APPENDIX A

TVA ROW CLEARING SPECIFICATIONS

Tennessee Valley Authority Right-of-Way Clearing Specifications

1. General - The clearing contractor shall review the environmental evaluation documents (categorical exclusion checklist, environmental assessment, or environmental impact statement) for the project or proposed activity, along with all clearing and construction appendices, conditions in applicable general and/or site-specific permits, the storm water pollution prevention plan, and any Tennessee Valley Authority (TVA) commitments to property owners. The contractor shall then plan and carry out operations using techniques consistent with good engineering and management practices as outlined in TVA's best management practices (BMPs) manual (Muncy 1992, and revisions thereto). The contractor will protect areas that are to be left unaffected by access or clearing work at and adjacent to all work sites. In sensitive areas and their buffers, the contractor will retain as much native ground cover and other vegetation as possible.

   If the contractor fails to use BMPs or to follow environmental expectations discussed in the prebid or prework meeting or present in contract specifications, TVA will order corrective changes and additional work as deemed necessary in TVA's judgment to meet the intent of environmental laws and regulations or other guidelines. Major violations or continued minor violations will result in work suspension until correction of the situation is achieved or other remedial action is taken at the contractor's expense. Penalty clauses may be invoked as appropriate.

2. Regulations - The clearing contractor shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances including without limitation all air, water, solid and hazardous waste, noise, and nuisance laws, regulations, and ordinances. The contractor shall secure or ensure that TVA has secured all necessary permits or authorizations to conduct work on the acres shown on the drawings and plan and profile for the contract. The contractor's designated project manager will actively seek to prevent, control, monitor, and safely abate all commonly recognized forms of workplace and environmental pollution. Permits or authorizations and any necessary certifications of trained or licensed employees shall be documented with copies submitted to TVA's right-of-way inspector or construction environmental engineer before work begins. The contractor will be responsible for meeting all conditions specified in permits. Permit conditions shall be reviewed in prework discussions.

3. Land and Landscape Preservation - The clearing contractor shall exercise care to preserve the condition of cleared soils by avoiding as much compacting and deep scarring as possible. As soon as possible after initial disturbance of the soil and in accordance with any permit(s) or other state or local environmental regulatory requirements, cover material shall be placed to prevent erosion and sedimentation of water bodies or conveyances to surface water or groundwater. In areas outside the clearing, use, and access areas, the natural vegetation shall be protected from damage. The contractor and his employees must not deviate from delineated access routes or use areas and must enter the site at designated areas that will be marked. Clearing operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the remaining natural vegetation and adjacent surroundings in the vicinity of the work. In sensitive public or environmental areas, appropriate buffer zones shall be observed and the methods of clearing or reclearing modified to protect

the buffer and sensitive area. Some areas may require planting native plants or grasses to meet the criteria of regulatory agencies or commitments to special program interests.

4. Streamside Management Zones - The clearing contractor must leave as many rooted ground cover plants as possible in buffer zones along streams and other bodies of water or wet-weather conveyances thereto. In such streamside management zones (SMZ), tall-growing tree species (trees that would interfere with TVA's National Electrical Safety Code clearances) shall be cut, and the stumps may be treated to prevent resprouting. Low-growing trees identified by TVA as marginal electrical clearance problems may be cut, and then stump treated with growth regulators to allow low, slow-growing canopy development and active root growth. Only approved herbicides shall be used, and herbicide application shall be conducted by certified applicators from TVA's Transmission, Operations, and Maintenance (TOM) organization after initial clearing and construction. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment, such as a feller-buncher. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Disturbed soils in SMZs must be stabilized by appropriate methods immediately after the right-of-way is cleared. Stabilization must occur within the time frame specified in applicable storm water permits or regulations. Stumps within SMZs may be cut close to the ground but must not be removed or uprooted. Trees, limbs, and debris shall be immediately removed from streams, ditches, and wet areas using methods that will minimize dragging or scarring the banks or stream bottom. No debris will be left in the water or watercourse. Equipment will cross streams, ditches, or wet areas only at locations designated by TVA after the application of appropriate erosion control BMPs consistent with permit conditions or regulatory requirements.

5. Wetlands - In forested wetlands, tall trees will be cut near the ground, leaving stumps and roots in place. The cambium may be treated with herbicides applied by certified applicators from the TOM organization to prevent regrowth. Understory trees that must be initially cut and removed may be allowed to grow back or may be treated with tree growth regulators selectively to slow growth and increase the reclearing cycle. The decision will be situationally made based on existing ground cover, wetland type, and tree species since tall tree removal may "release" understory species and allow them to grow quickly to "electrical clearance problem" heights. In many circumstances, herbicides labeled for water and wetland use may be used in reclearing.

6. Sensitive Area Preservation - If prehistoric or historic artifacts or features that might be of archaeological significance are discovered during clearing or reclearing operations, the activity shall immediately cease within a 100-foot radius, and a TVA right-of-way inspector or construction environmental engineer and the Cultural Resources Program manager shall be notified. The site shall be protected and left as found until a determination about the resources, their significance, and site treatment is made by TVA's Cultural Resources Program. Work may continue beyond the finding zone and the 100-foot radius beyond its perimeter.

7. Water Quality Control - The contractor's clearing and disposal activities shall be performed using BMPs that will prevent erosion and entrance of spillage, contaminants, debris, and other pollutants or objectionable materials into drainage

ways, surface water, or groundwater. Special care shall be exercised in refueling equipment to prevent spills. Fueling areas shall be remote from any sinkhole, crevice, stream, or other water body. Open burning debris will be kept away from streams and ditches and shall be incorporated into the soil.

The clearing contractor will erect and (when TVA or contract construction personnel are unable) maintain BMPs such as silt fences on steep slopes and adjacent to any stream, wetland, or other water body. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor personnel routinely and during periods of high runoff, and any necessary repairs will be made as soon as practicable. BMP inspections will be conducted in accordance with permit requirements. Records of all inspections will be maintained on site, and copies of inspection forms will be forwarded to the TVA construction environmental engineer.

8. Turbidity and Blocking of Streams - If temporary clearing activities must interrupt natural drainage, appropriate drainage facilities and erosion/sediment controls shall be provided to avoid erosion and siltation of streams and other water bodies or water conveyances. Turbidity levels in receiving waters or at storm water discharge points shall be monitored, documented, and reported if required by the applicable permit. Erosion and sediment control measures such as silt fences, water bars, and sediment traps shall be installed as soon as practicable after initial access, site, or right-of-way disturbance in accordance with applicable permit or regulatory requirements.

   Mechanized equipment shall not be operated in flowing water except when approved and, then, only to construct necessary stream crossings under direct guidance of TVA. Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA construction access road standards. Material shall not be deposited in watercourses or within stream bank areas where it could be washed away by high stream flows. Any clearing debris that enters streams or other water bodies shall be removed as soon as possible. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained for stream crossings.

9. Air Quality Control - The clearing or reclearing contractor shall take appropriate actions to limit the amount of air emissions created by clearing and disposal operations to well within the limits of clearing or burning permits and/or forestry or local fire department requirements. All operations must be conducted in a manner that prevents nuisance conditions or damage to adjacent land crops, dwellings, highways, or people.

10. Dust and Mud Control - Clearing activities shall be conducted in a manner that minimizes the creation of fugitive dust. This may require limitations as to type of equipment, allowable speeds, and routes utilized. Control measures such as water, gravel, etc., or similar measures may be used subject to TVA approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.

11. Burning - The contractor shall obtain applicable permits and approvals to conduct controlled burning. The contractor will comply with all provisions of the permit, notification, or authorization including burning site locations, controlled draft, burning hours, and such other conditions as stipulated. If weather conditions such as wind speed or wind direction change rapidly, the contractor's burning operation may be

temporarily stopped by TVA's field engineer. The debris to be burned shall be kept as clean and dry as possible and stacked and burned in a manner that produces the minimum amount of smoke. Residue from burning will be disposed of according to permit stipulations. No fuel starters or enhancements other than kerosene will be allowed.

12. Smoke and Odors - The contractor will properly store and handle combustible and volatile materials that could create objectionable smoke, odor, or fumes. The contractor shall not burn oil or refuse that includes trash, rags, tires, plastics, or other manufactured debris.

13. Vehicle Exhaust Emissions - The contractor shall maintain and operate equipment in a manner that limits vehicle exhaust emissions. Equipment and vehicles will be kept within the manufacturers' recommended limits and tolerances. Excessive exhaust gases will be eliminated, and inefficient operating procedures will be revised or halted until corrective repairs or adjustments are made.

14. Vehicle Servicing - Routine maintenance of personal vehicles will not be performed on the right-of-way. However, if emergency or "have to" situations arise, minimal/temporary maintenance to personal vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Heavy equipment will be serviced on the right-of-way, except in designated sensitive areas. The clearing or reclearing contractor will properly maintain these vehicles with approved spill protection controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the area environmental coordinator or construction environmental engineer will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

15. Noise Control - The contractor shall take steps to avoid the creation of excessive sound levels for employees, the public, or the site and adjacent property owners. Concentration of individual noisy pieces as well as the hours and locations of operation should be considered.

16. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers. The equipment and mufflers shall be maintained at peak operating efficiency.

17. Sanitation - A designated representative of TVA or the clearing contractor shall contact a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

18. Refuse Disposal - The clearing or reclearing contractor shall be responsible for daily cleanup and proper labeling, storage, and disposal of all refuse and debris on the site produced by his operations and employees. Facilities that meet applicable regulations

and guidelines for refuse collection will be required. Only approved transport, storage, and disposal areas shall be used.

19. Brush and Timber Disposal (Reclearing) - The reclearing contractor shall place felled tree boles in neat stacks at the edge of the right-of-way, with crossing breaks at least every 100 feet. Property owner requests shall be reviewed with the project manager or right-of-way specialist before accepting them. Lop and drop activities must be specified in the contract and on plan and profile drawings with verification with the right-of-way specialist before conducting such work. When tree trimming and chipping is necessary, disposal of the chips on the easement or other locations on the property must be with the consent of the property owner and the approval of the right-of-way specialist. No trees, branches, or chips shall remain in a surface water body or be placed at a location where washing into a surface water or groundwater source might occur.

20. Brush and Timber Disposal (Initial Clearing) - For initial clearing, trees are commonly part of the contractor's contract to remove as they wish. Trees may be removed from the site for lumber or pulpwood or they may be chipped or stacked and burned. All such activities must be coordinated with the TVA field engineer, and the open burning permits, notifications, and regulatory requirements must be met. Trees may be cut and left in place only in areas specified by TVA and approved by appropriate regulatory agencies. These areas may include sensitive wetlands or SMZs where tree removal would cause excessive ground disturbance or in very rugged terrain where windrowed trees are used as sediment barriers along the edge of the right-of-way.

21. Restoration of Site - All disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (Muncy 2012).* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor.

    D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

References

Muncy, J. A. 2012. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (revised edition). Edited by Abigail Bowen, Jodie Branum, Corey Chandler, Adam Dattilo, Britta Dimick, Shea Gaither, Casey Henley, Todd Liskey, Joe Melton, Cherie Minghini, Paul Pearman, Kenton Smithson, Joe Turk, Emily Willard, Robby Wilson. Norris: TVA Technical Note TVA/LR/NRM 92/1. Retrieved from <http://www.tva.com/power/projects/bmp_manual_2012.pdf> (n.d.).

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APPENDIX B

TVA ENVIRONMENTAL QUALITY PROTECTION SPECIFICATIONS FOR TRANSMISSION LINE CONSTRUCTION

Tennessee Valley Authority Environmental Quality Protection Specifications for Transmission Line Construction

1. General – Tennessee Valley Authority (TVA) and/or the assigned contractor shall plan, coordinate, and conduct operations in a manner that protects the quality of the environment and complies with TVA's environmental expectations discussed in the preconstruction meeting. This specification contains provisions that shall be considered in all TVA and contract construction operations. If the contractor fails to operate within the intent of these requirements, TVA will direct changes to operating procedures. Continued violation will result in a work suspension until correction or remedial action is taken by the contractor. Penalties and contract termination will be used as appropriate. The costs of complying with the Environmental Quality Protection Specifications are incidental to the contract work, and no additional compensation will be allowed. At all structure and conductor pulling sites, protective measures to prevent erosion will be taken immediately upon the end of each step in a construction sequence, and those protective measures will be inspected and maintained throughout the construction and right-of-way rehabilitation period.

2. Regulations - TVA and/or the assigned contractor shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances related to environmental protection and prevention, control, and abatement of all forms of pollution.

3. Use Areas - TVA and/or the assigned contractor's use areas include but are not limited to site office, shop, maintenance, parking, storage, staging, assembly areas, utility services, and access roads to the use areas. The construction contractor shall submit plans and drawings for their location and development to the TVA engineer and project manager for approval. Secondary containment will be provided for fuel and petroleum product storage pursuant to 29CFR1910.106(D)(6)(iii)(OSHA).

4. Equipment - All major equipment and proposed methods of operation shall be subject to the approval of TVA. The use or operation of heavy equipment in areas outside the right-of-way, access routes, or structure, pole, or tower sites will not be permitted without permission of the TVA inspector or field engineer. Heavy equipment use on steep slopes (greater than 20 percent) and in wet areas will be held to the minimum necessary to construct the transmission line. Steps will be taken to limit ground disturbance caused by heavy equipment usage, and erosion and sediment controls will be instituted on disturbed areas in accordance with state requirements.

   No subsurface ground-disturbing equipment or stump-removal equipment will be used by construction forces except on access roads or at the actual structure, pole, or tower sites, where only footing locations and controlled runoff diversions shall be created that disturb the soil. All other areas of ground cover or in-place stumps and roots shall remain in place. (Note: Tracked vehicles disturb surface layer of the ground due to size and function.) Some disking of the right-of-way may occur for proper seedbed preparation.

   Unless ponding previously occurred (i.e., existing low-lying areas), water should not be allowed to pond on the structure sites except around foundation holes; the water must be directed away from the site in as dispersed a manner as possible. At tower or

structure sites, some means of upslope interruption of potential overland flow and diversion around the footings should be provided as the first step in construction-site preparation. If leveling is necessary, it must be implemented by means that provide for continuous gentle, controlled, overland flow or percolation. A good grass cover, straw, gravel, or other protection of the surface must be maintained. Steps taken to prevent increases in the moisture content of the in-situ soils will be beneficial both during construction and over the service life of any structure.

5. Sanitation - A designated TVA or contractor representative shall contact a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

6. Refuse Disposal - Designated TVA and/or contractor personnel shall be responsible for daily inspection, cleanup, and proper labeling, storage, and disposal of all refuse and debris produced by his operations and by his employees. Suitable refuse collecting facilities will be required. Only state-approved disposal areas shall be used. Disposal containers such as dumpsters or roll-off containers shall be obtained from a proper waste disposal contractor. Solid, special, construction/demolition, and hazardous wastes as well as scrap are part of the potential refuse generated and must be properly managed with emphasis on reuse, recycle, or possible give away, as appropriate, before they are handled as waste. Contractors must meet similar provisions on any project contracted by TVA.

7. Landscape Preservation - TVA and its contractors shall exercise care to preserve the natural landscape in the entire construction area as well as use areas, in or outside the right-of-way, and on or adjacent to access roads. Construction operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural vegetation and surroundings in the vicinity of the work.

8. Sensitive Areas Preservation - Certain areas on site and along the right-of-way may be designated by the specifications or the TVA engineer as environmentally sensitive. These areas include but are not limited to areas classified as erodible, geologically sensitive, scenic, historical and archaeological, fish and wildlife refuges, water supply watersheds, and public recreational areas such as parks and monuments. Contractors and TVA construction crews shall take all necessary actions to avoid adverse impacts to these sensitive areas and their adjacent buffer zones. These actions may include suspension of work or change of operations during periods of rain or heavy public use; hours may be restricted or concentrations of noisy equipment may have to be dispersed. If prehistoric or historic artifacts or features are encountered during clearing or construction operations, the operations shall immediately cease for at least 100 feet in each direction, and TVA's right-of-way inspector or construction superintendent and Cultural Resources Program shall be notified. The site shall be left as found until a significance determination is made. Work may continue elsewhere beyond the 100-foot perimeter.

9. Water Quality Control - TVA and contractor construction activities shall be performed by methods that will prevent entrance or accidental spillage of solid matter, contaminants,

debris, and other objectionable pollutants and wastes into flowing caves, sinkholes, streams, dry watercourses, lakes, ponds, and underground water sources.

The clearing contractor will erect and (when TVA or contract construction personnel are unable) maintain best management practices (BMPs) such as silt fences on steep slopes and adjacent to any stream, wetland, or other water body. Additional BMPs may be required for areas of disturbance created by construction activities. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor personnel routinely and during periods of high runoff, and any necessary repairs will be made as soon as practicable. BMP inspections will be conducted in accordance with permit requirements. Records of all inspections will be maintained on site, and copies of inspection forms will be forwarded to the TVA construction environmental engineer.

Acceptable measures for disposal of waste oil from vehicles and equipment shall be followed. No waste oil shall be disposed of within the right-of-way, on a construction site, or on access roads.

10. Turbidity and Blocking of Streams - Construction activities in or near SMZs or other bodies of water shall be controlled to prevent the water turbidity from exceeding state or local water quality standards for that stream. All conditions of a general storm water permit, aquatic resource alteration permit, or a site-specific permit shall be met including monitoring of turbidity in receiving streams and/or storm water discharges and implementation of appropriate erosion and sediment control measures.

    Appropriate drainage facilities for temporary construction activities interrupting natural site drainage shall be provided to avoid erosion. Watercourses shall not be blocked or diverted unless required by the specifications or the TVA engineer. Diversions shall be made in accordance with TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (Muncy, 2012).*

    Mechanized equipment shall not be operated in flowing water except when approved and, then, only to construct crossings or to perform required construction under direct guidance of TVA. Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA construction access road standards. Material shall not be deposited in watercourses or within stream bank areas where it could be washed away by high stream flows. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained.

    Wastewater from construction or dewatering operations shall be controlled to prevent excessive erosion or turbidity in a stream, wetland, lake, or pond. Any work or placing of equipment within a flowing or dry watercourse requires the prior approval of TVA.

11. Clearing - No construction activities may clear additional site or right-of-way vegetation or disturb remaining retained vegetation, stumps, or regrowth at locations other than the structure sites and conductor setup areas. TVA and the construction contractor(s) must provide appropriate erosion or sediment controls for areas they have disturbed that have previously been restabilized after clearing operations. Control measures shall be implemented as soon as practicable after disturbance in accordance with applicable federal, state, and/or local storm water regulations.

12. Restoration of Site - All construction disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (Muncy 2012).* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor.

    D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

13. Air Quality Control - Construction crews shall take appropriate actions to minimize the amount of air pollution created by their construction operations. All operations must be conducted in a manner that avoids creating a nuisance and prevents damage to lands, crops, dwellings, or persons.

14. Burning - Before conducting any open burning operations, the contractor shall obtain permits or provide notifications as required to state forestry offices and/or local fire departments. Burning operations must comply with the requirements of state and local air pollution control and fire authorities and will only be allowed in approved locations and during appropriate hours and weather conditions. If weather conditions such as wind direction or speed change rapidly, the contractor's burning operations may be temporarily stopped by the TVA field engineer. The debris for burning shall be piled and shall be kept as clean and as dry as possible, then burned in such a manner as to reduce smoke. No materials other than dry wood shall be open burned. The ash and debris shall be buried away from streams or other water sources and shall be in areas coordinated with the property owner.

15. Dust and Mud Control - Construction activities shall be conducted to minimize the creation of dust. This may require limitations as to types of equipment, allowable speeds, and routes utilized. Water, straw, wood chips, dust palliative, gravel, combinations of these, or similar control measures may be used subject to TVA's approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.

16. Vehicle Exhaust Emissions - TVA and/or the contractors shall maintain and operate equipment to limit vehicle exhaust emissions. Equipment and vehicles that show

excessive emissions of exhaust gasses and particulates due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective repairs or adjustments are made.

17. Vehicle Servicing - Routine maintenance of personal vehicles will not be performed on the right-of-way. However, if emergency or "have to" situations arise, minimal/temporary maintenance to personal vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Heavy equipment will be serviced on the right-of-way except in designated sensitive areas. The Heavy Equipment Department within TVA or the construction contractor will properly maintain these vehicles with approved spill prevention controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the area environmental coordinator or construction environmental engineer will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

18. Smoke and Odors - TVA and/or the contractors shall properly store and handle combustible material that could create objectionable smoke, odors, or fumes. The contractor shall not burn refuse such as trash, rags, tires, plastics, or other debris.

19. Noise Control - TVA and/or the contractor shall take measures to avoid the creation of noise levels that are considered nuisances, safety, or health hazards. Critical areas including but not limited to residential areas, parks, public use areas, and some ranching operations will require special considerations. TVA's criteria for determining corrective measures shall be determined by comparing the noise level of the construction operation to the background noise levels. In addition, especially noisy equipment such as helicopters, pile drivers, air hammers, chippers, chain saws, or areas for machine shops, staging, assembly, or blasting may require corrective actions when required by TVA.

20. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers as required by the Department of Labor's *Safety and Health Regulations for Construction*. TVA may require spark arresters in addition to mufflers on some engines. Air compressors and other noisy equipment may require sound-reducing enclosures in some circumstances.

21. Damages - The movement of construction crews and equipment shall be conducted in a manner that causes as little intrusion and damage as possible to crops, orchards, woods, wetlands, and other property features and vegetation. The contractor will be responsible for erosion damage caused by his actions and especially for creating conditions that would threaten the stability of the right-of-way or site soil, the structures, or access to either. When property owners prefer the correction of ground cover condition or soil and subsoil problems themselves, the section of the contract dealing with damages will apply.

References

Muncy, J. A. 2012. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (revised edition). Edited by Abigail Bowen, Jodie Branum, Corey Chandler, Adam Dattilo, Britta Dimick, Shea Gaither, Casey Henley, Todd Liskey, Joe Melton, Cherie Minghini, Paul Pearman, Kenton Smithson, Joe Turk, Emily Willard, Robby

Wilson. Norris: TVA Technical Note TVA/LR/NRM 92/1. Retrieved from <http://www.tva.com/power/projects/bmp_manual_2012.pdf> (n.d.).

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APPENDIX C

TVA TRANSMISSION CONSTRUCTION GUIDELINES NEAR STREAMS

Tennessee Valley Authority Transmission Construction Guidelines Near Streams

Even the most carefully designed transmission line project eventually will affect one or more creeks, rivers, or other type of water body. These streams and other water areas are protected by state and federal law, generally support some amount of fishing and recreation, and, occasionally, are homes for important and/or endangered species. These habitats occur in the stream and on strips of land along both sides (the streamside management zone [SMZ]) where disturbance of the water, land, or vegetation could have an adverse effect on the water or stream life. The following guidelines have been prepared to help Tennessee Valley Authority (TVA) Transmission Construction staff and their contractors avoid impacts to streams and stream life as they work in and near SMZs. These guidelines expand on information presented in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (Muncy 2012).

Three Levels of Protection

During the preconstruction review of a proposed transmission line, the TVA Environmental Biological Compliance staff will have studied each possible stream impact site and will have identified it as falling into one of three categories: (A) standard streamside management protection, (B) protection of important permanent streams, springs, and sinkholes, or (C) protection of unique habitats. These category designations are based on the variety of species and habitats that exist in the stream, as well as federal requirements to avoid harming certain species.

As early as possible after field surveys are completed by the TVA Biological Compliance Staff, any streams that have been designated as either Category B or C will be discussed with the TVA Environmental Energy Delivery staff. The purpose of these discussions will be to minimize the number of crossings and their impact on the important resources in the streams during design and construction. The category designation for each stream site will then be marked on the transmission line plan and profile sheets. Construction crews are required to protect streams and other identified water habitats using the following pertinent set(s) of guidelines:

(A) Standard Stream Protection

This is the standard (basic) level of protection for streams, springs, sinkholes, and the habitats around them. The purpose of the following guidelines is to minimize the amount and length of disturbance to the water bodies without causing adverse impacts on the construction work.

Guidelines:

1. All construction work around streams, springs, and sinkholes will be done using pertinent best management practices (BMPs) such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 5, “Structural Controls Standards and Specifications” (Muncy 2012).

2. All equipment crossings of streams and shorelines must comply with appropriate state permitting requirements. Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Stumps can be cut close to ground level, but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement as a result of clearing operations by the actions of plowing, disking, blading, or other tillage or grading equipment will be minimized in SMZs. Shorelines that have to be disturbed must be stabilized as soon as feasible.

(B) Protection of Important Permanent Streams, Springs, and Sinkholes

This category will be used when there is one or more specific reason(s) why a permanent (always-flowing) stream, spring, or sinkhole requires protection beyond that provided by standard BMPs. Reasons for requiring this additional protection include high potential for occupancy by federally listed or significant state-listed species, federally designated critical habitat, or areas designated as special use classification (e.g., trout waters). The purpose of the following guidelines is to minimize the disturbance of the banks and water in the flowing stream(s) where this level of protection is required.

Guidelines:

1. Except as modified by Guidelines 2-4 below, all construction work around streams will be done using pertinent BMPs, such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 5, “Structural Controls Standards and Specifications” (Muncy 2012).

2. All equipment crossings of streams must comply with appropriate state (and, at times, federal) permitting requirements. Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Category B designations will be discussed with the TVA Environmental Energy Delivery staff as early as possible in the process, to allow time to discuss possible avoidance or minimization of impacts with design and construction.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Cutting of trees near permanent streams must be limited to those required to meet National

Electrical Safety Code and danger tree requirements. Stumps can be cut close to ground level, but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will be minimized in SMZs. Shorelines that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.

(C) Protection of Unique Habitats

This category will be used when, for one or more specific reasons, a temporary or permanent aquatic habitat requires special protection. This relatively uncommon level of protection will be appropriate and required when a unique habitat requiring special protection is present (for example, the spawning area of a rare species), the stream is known to be occupied by a federally listed or significant state-listed species, or when required as a special condition resulting from consultation with the United States Fish and Wildlife Service to avoid project effects on a listed species or designated critical habitat. The purpose of the following guidelines is to avoid or minimize any disturbance of the unique aquatic habitat.

Guidelines:

1. Except as modified by Guidelines 2-4 below, all construction work around the unique habitat will be done using pertinent BMPs, such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 5, "Structural Controls Standards and Specifications" (Muncy 2012).

2. Category C designations would be discussed with the TVA Environmental Energy Delivery staff as early as possible following field surveys to allow time to discuss possible avoidance or minimization of impacts with design and construction. Environmental Energy Delivery staff would discuss construction activities to take place in the SMZ with the Environmental Biological Compliance staff. On-site planning sessions would be conducted as needed. All crossings of streams also must comply with appropriate state (and, at times, federal) permitting requirements.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Cutting of trees near permanent streams should be limited to those required to meet National Electrical Safety Code, Federal Energy Regulatory Commission standards, and danger tree requirements. Stumps can be cut close to ground level, but must not be removed or uprooted.

4. Other vegetation near the unique habitat must be disturbed as little as possible during construction. Soil disturbance by plowing, disking, blading, or grading must be kept at a minimum. Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.

5. Special SMZ requirements will be coordinated with Environmental Biological Compliance staff.

Maintenance

During ongoing operations, SMZs will be inspected frequently; and during inactive periods, occasionally. Damaging or failing situations that may cause unacceptable water quality impacts will be corrected as soon as practical.

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Comparison of Guidelines Under the Three Stream and Water Body Protection Categories[1] (page 1)

Guidelines	A: Standard Stream Protection	B: Protection of Important Permanent Streams, Springs, and Sinkholes	C: Protection of Unique Habitats
1. Reference	• All TVA construction work around streams, springs, and sinkholes will be done using pertinent Best Management Practices (BMPs) such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities*, especially Chapter 5, "Structural Controls Standards and Specifications."	• Except as modified by Guidelines 2-4, all construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities*, especially Chapter 5, "Structural Controls Standards and Specifications."	• Except as modified by Guidelines 2-4, all construction work around the unique habitat will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 5, "Structural Controls Standards and Specifications."
2. Equipment Crossings	• All equipment crossings of streams and shorelines must comply with appropriate state permitting requirements. • Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.	• All equipment crossings of streams also must comply with appropriate state (and, at times federal) permitting requirements. • Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • All construction activity would be discussed with the TVA Environmental Energy Delivery staff as early as possible in the process to allow time to discuss possible avoidance or minimization of impacts with design and construction.	• All crossings of streams also must comply with appropriate state (and, at times federal) permitting requirements. • All construction activity would be discussed with the TVA Environmental Energy Delivery staff as early as possible following field surveys to allow time to discuss possible avoidance or minimization of impacts with design and construction. • On-site planning sessions would be conducted as needed.

[1]Source: *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (Muncy 2012)

Comparison of Guidelines Under the Three Stream and Water Body Protection Categories[1] (page 2)

Guidelines	A: Standard	B: Important Permanent Streams	C: Unique Water Habitats
3. Cutting Trees	• Cutting of trees within streamside management zones (SMZs) must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Stumps can be cut close to ground level, but must not be removed or uprooted.	• Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Cutting of trees near permanent streams must be limited to those meeting National Electrical Safety Code (NESC) and danger tree requirements. • Stumps can be cut close to ground level, but must not be removed or uprooted.	• Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Cutting of trees near permanent streams must be limited to those meeting NESC, Federal Energy Regulatory Commission standards, and danger tree requirements. • Stumps can be cut close to ground level, but must not be removed or uprooted.
4. Other Vegetation	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement as a result of clearing operations by the actions of plowing, disking, blading, or other tillage or grading equipment will be minimized in SMZs. • Shorelines that have to be disturbed must be stabilized as soon as feasible.	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will be minimized in SMZs. • Shorelines that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.	• Other vegetation near the unique habitat must be disturbed as little as possible during construction. • The soil disturbance by plowing, disking, blading, or grading must be kept at a minimum. • Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible. Special SMZ requirements will be coordinated with Environmental Biological Compliance staff.

[1]Source: *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities (Muncy 2012)*

APPENDIX D

TVA ENVIRONMENTAL QUALITY PROTECTION SPECIFICATIONS FOR TRANSMISSION SUBSTATION OR COMMUNICATIONS CONSTRUCTION

Tennessee Valley Authority Environmental Quality Protection Specifications for Transmission Substation or Communications Construction

1. General – Tennessee Valley Authority (TVA) and/or the assigned contractor and subcontractors shall plan, coordinate, and conduct his or her operations in a manner that protects the quality of the environment and complies with TVA's environmental expectations discussed in the preconstruction meeting (including clearing and grading or reclearing and removal or dismantling). This specification contains provisions that shall be considered in all TVA and contract construction, dismantling, or forensic operations. If the contractor and his or her subcontractors fail to operate within the intent of these requirements, TVA will direct changes to operating procedures. Continued violation will result in a work suspension until correction or remedial action is taken by the contractor. Penalties and contract termination will be used as appropriate. The costs of complying with the Environmental Quality Protection Specifications are incidental to the contract work, and no additional compensation will be allowed. At all site perimeters, structure, foundation, conduit, grounding, fence, drainage ways, etc., appropriate protective measures to prevent erosion or release of contaminants will be taken immediately upon the end of each step in a construction, dismantling, or forensic sequence, and those protective measures will be inspected and maintained throughout the construction and site stabilization and rehabilitation period.

2. Regulations - TVA and/or the assigned contractor and subcontractor(s) shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances related to environmental protection and prevention, control, and abatement of all forms of pollution.

3. Use Areas - TVA and/or the assigned contractor and/or subcontractor(s) use areas include but are not limited to site office, shop, maintenance, parking, storage, staging, assembly areas, utility services, and access roads to the use areas. The construction contractor and subcontractor(s) shall submit plans and drawings for their location and development to the TVA engineer and project manager for approval. Secondary containment will be provided for fuel and petroleum product storage pursuant to 29CFR1910.106(D)(6)(iii)(OSHA).

4. Equipment - All major equipment and proposed methods of operation shall be subject to the approval of TVA. The use or operation of heavy equipment in areas outside the right-of-way, access routes, site, or structure, pole, or tower sites will not be permitted without permission of the TVA inspector or field engineer. Heavy equipment use on steep slopes (greater than 20 percent) and in wet areas will be held to the minimum necessary to construct the transmission or communication facility. Steps will be taken to limit ground disturbance caused by heavy equipment usage, and erosion and sediment controls will be instituted on disturbed areas in accordance with state requirements and best management practices (BMPs).

   No subsurface ground-disturbing equipment or stump-removal equipment will be used by construction forces except on access roads or at the actual site, structure, pole, or tower sites, where only footing locations and controlled runoff diversions shall be created that disturb the soil. All other areas of ground cover or in-place stumps and roots shall remain in place. (Note: Tracked vehicles disturb surface layer of the ground

due to size and function.) Some disking of the right-of-way, access, and site(s) may occur for proper seedbed preparation.

Unless ponding previously occurred (i.e., existing low-lying areas), water should not be allowed to pond on the site or around structures except around foundation holes; the water must be directed away from the site in as dispersed a manner as possible. At tower or structure sites, some means of upslope interruption of potential overland flow and diversion around the footings should be provided as the first step in construction-site preparation. If leveling is necessary, it must be implemented by means that provide for continuous gentle, controlled, overland flow or percolation. A good grass cover, straw, gravel, or other protection of the surface must be maintained. Steps taken to prevent increases in the moisture content of the in-situ soils will be beneficial both during construction and over the service life of any anchor, foundation, or its structure.

5. Sanitation - A designated TVA or contractor and/or subcontractor(s) representative shall contract a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

6. Refuse Disposal - Designated TVA and/or contractor and subcontractor(s) personnel shall be responsible for daily inspection, cleanup, and proper labeling, storage, and disposal of all refuse and debris produced by his or her operations and by his or her employees. Suitable refuse collecting facilities will be required. Only state-approved disposal areas shall be used. Disposal containers such as dumpsters or roll-off containers shall be obtained from a proper waste disposal contractor. Solid, special, construction/demolition, and hazardous wastes as well as scrap are part of the potential refuse generated and must be properly managed with emphasis on reuse, recycle, or possible give away, as appropriate, before they are handled as wastes. Records of the amounts generated shall be provided to the site's or project's designated environmental specialist. Contractor(s) and subcontractor(s) must meet similar provisions on any project contracted by TVA. Final debris, refuse, product, and material removal is the responsibility of the contractor unless special written agreement is made with the ultimate TVA owner of the site.

7. Landscape Preservation - TVA and its contractor(s) and subcontractor(s) shall exercise care to preserve the natural landscape in the entire construction, dismantling, or forensic area as well as use areas, in or outside the right-of-way, and on or adjacent to access roads. Construction operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural vegetation and surroundings in the vicinity of the work.

8. Sensitive Areas Preservation - Certain areas on site and along the access and/or right-of-way may be designated by the specifications or the TVA engineer as environmentally sensitive. These areas include but are not limited to areas classified as erodible, geologically sensitive, scenic, historical and archaeological, fish and wildlife refuges, endangered species' habitat, water supply watersheds, and public recreational areas such as parks and monuments. Contractors, their subcontractor(s), and TVA

construction crews shall take all necessary actions to avoid adverse impacts to these sensitive areas and their adjacent buffer zones. These actions may include suspension of work or change of operations during periods of rain or heavy public use; hours may be restricted or concentrations of noisy equipment may have to be dispersed. If prehistoric or historic artifacts or features are encountered during clearing, grading, borrow, fill, construction, dismantling, or forensic operations, the operations shall immediately cease for at least 100 feet in each direction, and TVA's construction superintendent, project manager, or area environmental program administrator and TVA Cultural Resources Program shall be notified. The site shall be left as found until a significance determination is made. Work may continue elsewhere beyond the 100-foot perimeter.

9. Water Quality Control - TVA and contractor construction, dismantling, or forensic activities shall be performed by methods that will prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing caves, sinkholes, streams, dry watercourses, lakes, ponds, and underground water sources.

   The clearing contractor erected erosion and/or sedimentation control shall be maintained and (when TVA or contract construction personnel are unable) the construction crew(s) shall maintain BMPs such as silt fences on steep slopes and adjacent to any stream, wetland, or other water body. Additional BMPs may be required for areas of disturbance created by construction activities and at sequential steps of construction at the same location on site. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor and/or subcontractor(s) personnel routinely and during periods of high runoff, and any necessary repairs will be made as soon as practicable. BMP inspections and any required sampling will be conducted in accordance with permit requirements. Records of all inspections and sampling results will be maintained on site, and copies of inspection forms and sampling results will be forwarded to the TVA project manager or supporting environmental specialist.

   Acceptable measures for disposal of waste oil from vehicles and equipment shall be followed. No waste oil shall be disposed of within the site, access, or right-of-way, on a related construction site or its access roads.

10. Turbidity and Blocking of Streams - Construction, dismantling, or forensic activities in or near streamside management zones or other bodies of water shall be controlled to prevent the water turbidity from exceeding state or local water quality standards for that stream. **All conditions** of a general storm water permit, aquatic resource alteration permit, or a site-specific permit **shall be met** including monitoring of turbidity in receiving streams and/or storm water discharges and implementation of appropriate erosion and sediment control measures.

    Appropriate drainage facilities for temporary construction, dismantling, or forensic activities interrupting natural site drainage shall be provided to avoid erosion. Watercourses shall not be blocked or diverted unless required by the specifications or the TVA engineer. Diversions shall be made in accordance with TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (Muncy, 2012).*

    On rights-of-way, mechanized equipment shall not be operated in flowing or standing water bodies except when approved and, then, only to construct crossings or to perform

required construction under direct guidance of TVA. Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA construction access road standards. Material shall not be deposited in watercourses, their adjacent wetlands, or within stream bank areas where it could be washed away by high stream flows. Appropriate U.S. Army Corps of Engineers' and state permits shall be obtained.

Mechanized equipment shall not be operated in flowing or standing water on substation, switching station, or telecommunication sites.

Wastewater from construction, dismantling, or dewatering operations shall be controlled to prevent excessive erosion or turbidity in a stream, wetland, lake, pond or conveyed to a sinkhole. Any work or placing of equipment within a flowing or dry watercourse requires the prior approval of TVA.

11. Floodplain Evaluation - During the planning and design phase of the substation or communications facility, floodplain information should be obtained to avoid locating flood-damageable facilities in the 100-year floodplain. If the preferred site is located within a floodplain area, alternative sites must be evaluated and documentation prepared to support a determination of "no practicable alternative" to siting in the floodplain. In addition, steps taken to minimize adverse floodplain impacts should also be documented.

12. Clearing - No construction, dismantling, or forensic activities may clear additional site or right-of-way vegetation or disturb remaining retained vegetation, stumps, or regrowth at locations other than the structure, substation, or communication site or access thereto. TVA and the construction, dismantling, or forensic contractor(s) must provide appropriate erosion or sediment controls for areas they have disturbed after each disturbance that have previously been restabilized after clearing operations. Control measures shall be implemented as soon as practicable after disturbance in accordance with applicable federal, state, and/or local storm water regulations.

13. Restoration of Site - All construction, dismantling, or forensic-related disturbed areas with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (Muncy 2012).* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor.

D. Rehabilitation species shall use species designated by federal guidance that are low–maintenance, native species appropriate for the site conditions that prevail at that location.

E. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

F. The site must be protected from species designated by the federal Invasive Species Council and must not be the source of species that can be transported to other locations via equipment contaminated with viable materials; thus, the equipment must be inspected, and any such species' material found must be removed and destroyed prior to transport to another location.

14. Air Quality Control - Construction, dismantling, and/or forensic crews shall take appropriate actions to minimize the amount of air pollution created by their operations. All operations must be conducted in a manner that avoids creating a nuisance and prevents damage to lands, crops, dwellings, or persons.

15. Burning - Before conducting any open burning operations, the contractor and subcontractor(s) shall obtain permits or provide notifications as required to state forestry offices and/or local fire departments. Burning operations must comply with the requirements of state and local air pollution control and fire authorities and will only be allowed in approved locations and during appropriate hours and weather conditions. If weather conditions such as wind direction or speed change rapidly, the contractor's burning operations may be temporarily stopped by the TVA field engineer. The debris for burning shall be piled and shall be kept as clean and as dry as possible, then burned in such a manner as to reduce smoke. No materials other than dry wood shall be open burned. The ash and debris shall be buried away from streams or other water sources and shall be in areas coordinated with the property owner on rights-of-way or project manager for TVA sites.

16. RENOVATION OR DEMOLITION DEBRIS MAY NOT BE BURNED.

17. Dust and Mud Control - Construction, dismantling, or forensic activities shall be conducted to minimize the creation of dust. This may require limitations as to types of equipment, allowable speeds, and routes utilized. Water, straw, wood chips, dust palliative, gravel, combinations of these, or similar control measures may be used subject to TVA's approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.

18. Vehicle Exhaust Emissions - TVA and/or the contractor(s) and subcontractor(s) shall maintain and operate equipment to limit vehicle exhaust emissions. Equipment and vehicles that show excessive emissions of exhaust gasses and particulates due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective repairs or adjustments are made.

19. Vehicle Servicing - Routine maintenance of personal vehicles will not be performed on the right-of-way or access route to the site. However, if emergency or "have to" situations arise, minimal/temporary maintenance to personal vehicles will occur in order

to mobilize the vehicle to an off-site maintenance shop. Heavy equipment will be serviced on the site except adjacent to or in designated sensitive areas. The Heavy Equipment Department within TVA or the construction, dismantling, or forensic contractor will properly maintain these vehicles with approved spill protection controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the area environmental coordinator or construction environmental engineer will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Records of amounts generated shall be provided to TVA. Equipment shall not be temporarily stored in stream floodplains whether overnight or on weekends or holidays.

20. Smoke and Odors - TVA and/or the contractor(s) and subcontractor(s) shall properly store and handle combustible material that could create objectionable smoke, odors, or fumes. The contractor and subcontractor(s) shall not burn refuse such as trash, rags, tires, plastics, or other debris.

21. Noise Control - TVA and/or the contractor and subcontractor(s) shall take measures to avoid the creation of noise levels that are considered nuisances, safety, or health hazards. Critical areas including but not limited to residential areas, parks, public use areas, and some ranching operations will require special considerations. TVA's criteria for determining corrective measures shall be determined by comparing the noise level of the construction, dismantling, or forensic operation to the background noise levels. In addition, especially noisy equipment such as helicopters, pile drivers, air hammers, chippers, chain saws, or areas for machine shops, staging, assembly, or blasting may require corrective actions when required by TVA.

22. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers as required by the Department of Labor's *Safety and Health Regulations for Construction.* TVA may require spark arresters in addition to mufflers on some engines. Air compressors and other noisy equipment may require sound-reducing enclosures in some circumstances.

23. Damages - The movement of construction, dismantling, or forensic crews and equipment shall be conducted in a manner that causes as little intrusion and damage as possible to crops, orchards, woods, wetlands, and other property features and vegetation. The contractor and subcontractor(s) will be responsible for erosion damage caused by his or her actions and employees and, especially, for creating conditions that would threaten the stability of the right-of-way or site soil, the structures, or access to either. When property owners prefer the correction of ground cover condition or soil and subsoil problems themselves, the section of the project to be handled shall be documented with an implementation schedule and a property owner signature obtained.

24. Final Site Cleanup and Inspection - The contractor’s designated person shall ensure that all construction, dismantling, or forensic-related debris, products, materials, and wastes are properly handled, labeled as required, and removed from the site. Upon completion of those activities, that person and a TVA-designated person shall walk down the site and complete an approval inspection.

References

Muncy, J. A. 2012. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities

(revised edition). Edited by Abigail Bowen, Jodie Branum, Corey Chandler, Adam Dattilo, Britta Dimick, Shea Gaither, Casey Henley, Todd Liskey, Joe Melton, Cherie Minghini, Paul Pearman, Kenton Smithson, Joe Turk, Emily Willard, Robby Wilson. Norris: TVA Technical Note TVA/LR/NRM 92/1. Retrieved from <http://www.tva.com/power/projects/bmp_manual_2012.pdf> (n.d.).

Revision January 2013

APPENDIX E

ROW VEGETATION MANAGEMENT GUIDELINES 2013

Energy Delivery Environmental Protection Procedures
Right-Of-Way Vegetation Management Guidelines

1.0 Overview

A. The Tennessee Valley Authority (TVA) must manage the vegetation on its rights-of-way and easements to ensure emergency maintenance access and routine access to structures, switches, conductors, and communications equipment. In addition, TVA must maintain adequate clearance, as specified by the National Electrical Safety Code, between conductors and tall growing vegetation and other objects. This requirement applies to vegetation within the right-of-way as well as to trees located off the right-of-way.

B. Each year TVA assesses the conditions of the vegetation on and along its rights-of-way. This is accomplished by aerial inspections, periodic field inspections, aerial photography, and information from TVA personnel, property owners and the general public. Important information gathered during these assessments includes the coverage by various vegetation types, the mix of plant species, the observed growth, the seasonal growing conditions, and the density of the tall vegetation. TVA also evaluates the proximity, height, and growth rate of trees adjacent to the right-of-way that may be a danger to the line or structures.

C. TVA right-of-way specialists develop a vegetation re-clearing plan that is specific to each line segment and is based on terrain conditions, species mix, growth, and density.

2.0 Right-of-Way Management Methods

A. TVA uses an integrated vegetation management approach. In farming areas, TVA encourages property owner management of the right-of-way using low growing crops. In dissected terrain with rolling hills and interspersed woodlands, TVA may utilize mechanical mowing.

B. TVA uses a variety of herbicides specific to the species present with a variety of possible application techniques. TVA utilizes control methods, including use of low volume herbicide applications, occasional single tree injections, and tree growth regulators (TGRs) to a large extent.

C. In very steep terrain, in sensitive environmental areas, in extensive wetlands, at stream banks, and in sensitive property owner land use areas, hand clearing may be utilized. Hand clearing is recognized as one of the most hazardous occupations documented by the Occupational Health and Safety Administration. For that reason, TVA utilizes low volume herbicide applications in these areas when feasible.

D. TVA does not encourage tree re-clearing by individual property owners because of the high hazard potential of hand clearing, possible interruptions of the line, and electrical safety considerations for untrained personnel that might do the work. Private property owners may re-clear the right-of-way with trained re-clearing professionals.

E. Mechanical mowers not only cut the tall saplings and seedlings on the right-of-way, they also shatter the stump and the supporting near surface root crown. The tendency of resistant species is to re-sprout from the root crown and shattered stumps can produce a multi-stem dense stand in the immediate area. Repeated use of mowers on short cycle re-clearing with many original stumps re-growing in the above manner can create a single species thicket or monoculture. With the original large root system and multiple stems, the resistant species can produce re-growth at the rate of 5-10 feet in a year. In years with high rainfall, the growth can reach 12-15 feet in a single year. These dense, monoculture stands can become nearly impenetrable for even large tractors. Such stands have low diversity, little wildlife food or nesting potential, and become a property owner concern. Selective herbicide application may be used to control monoculture stands.

F. TVA encourages property owners to sign an agreement to manage rights-of-way on their land for wildlife under the auspices of "Project Habitat," a joint project by TVA, BASF, and wildlife organizations, e.g., National Wild Turkey Federation, Quail Unlimited, and Buckmasters. The property owner maintains the right-of-way in wildlife food and cover with emphasis on quail, turkey, deer or other wildlife. A variation used in or adjacent to developing suburban areas is to sign agreements with the developer and residents to plant and maintain wildflowers on the right-of-way.

G. TVA places strong emphasis on managing rights-of-way in the above manner. When the property owners do not agree to these opportunities, TVA must maintain the right-of-way in the most environmentally acceptable, cost-effective, and efficient manner possible.

3.0 Herbicide Program

A. TVA has worked with universities (such as Mississippi State University, University of Tennessee, Purdue University and others), chemical manufacturers, other utilities, U.S. Department of Transportation, U.S. Fish and Wildlife (USFWS), and U.S. Forest Service (USFS) personnel to explore options for vegetation control. The results have been strong recommendations to use species-specific, low volume herbicide applications in more situations. Research, demonstrations, and other right-of-way programs show a definite improvement of rights-of-way treated with selective low-volume applications of new herbicides using a variety of application techniques and timing. Table 1 below identifies herbicides currently used on TVA rights-of-way. Table 2 identifies pre-emergent herbicides currently being used on bare ground areas on TVA rights-of-way and in substations. Table 3 identifies TGRs that may be used on tall trees that have special circumstances that require trimming on a regular cycle, e.g., restrictions on complete removal. The rates of application utilized are those listed on the U.S. Environmental

Protection Agency (USEPA) approved label and consistent with utility standard practice throughout the Southeast.

Table 1 - Herbicides Currently Used on TVA Rights-of-Way

Trade Name	Active Ingredient	Label Signal Word
Accord/Accord XRT II	Glyphosate/Liquid	Caution
Arsenal	Imazapyr/Liquid/Granule	Caution
Chopper	Imazapyr/RTU	Caution
Clearstand	Imazapyr/Metsulfuron Methyl/Liquid	Caution
Escort	Metsulfuron Methyl/Dry Flowable	Caution
Garlon	Triclopyr/Liquid	Caution
Garlon 3A	Triclopyr/Liquid	Danger
Habitat	Imazapyr/Liquid	Caution
Krenite S	Fosamine Ammoinium	Caution
Milestone VM	Aminopyralid/Liquid	Caution
Pathfinder II	Triclopyr/RTU	Caution
Rodeo	Glyphosate/Liquid	Caution
Roundup	Glyphosate/Liquid	Caution
Roundup Pro	Glyphosate	Caution
Streamline	Aminocyclopyrachlor/ Metsulfuron Methyl/Liquid	Caution
Transline	Clopyralid/Liquid	Caution
Viewpoint	Imazapyr/Aminocyclopyrachlor/ Metsulfuron Methyl/Liquid	Caution

Table 2 - Pre-Emergent Herbicides Currently Used for Bare Ground Areas On TVA Rights-of-Way

Trade Name	Active Ingredients	Label Signal Word
Arsenal 5G	Imazapyr/Granule	Caution
Sahara	Diuron/Imazapyr	Caution
SpraKil SK-26	Tebuthiuron/Diuron/Granules	Caution
SpraKil S-5	Tebuthiuron/Granules	Caution
Topsite	Diuron/Imazapyr	Caution

Table 3 - Tree Growth Regulators (TGRs) Currently Used On TVA Rights-of-Way

Trade Name	Active Ingredients	Label Signal Word
Profile 2SC	TGR-paclobutrazol	Caution
TGR	Flurprimidol	Caution

B. The herbicides listed in Table 1 and 2 and TGRs listed in Table 3 have been evaluated in extensive studies in support of registration applications and label requirements. Many have been reviewed in the USFS vegetation management environmental impact statements (EISs), and those evaluations are incorporated here by reference (USFS 1989a, 1989b, 2002a, and 2002b). Electronic copies can be accessed at http://www.fs.fed.us/r8/planning/documents/vegmgmt/. The result of these reviews has been a consistent finding of limited environmental impact beyond that of control of the target vegetation. All the listed herbicides have been found to be of low environmental toxicity when applied by trained applicators following the label and registration procedures, including prescribed measures, such as buffer zones, to protect threatened and endangered species.

C. Low volume herbicide applications are recommended since research demonstrates much wider plant diversity after such applications. There is better ground erosion protection and more wildlife food plants and cover plants develop. In most situations there is increased development of wild flowering plants and shrubs. In conjunction with herbicides, the diversity and density of low-growing plants provide control of tall-growing species through competition.

D. Wildlife managers often request the use of herbicides in place of rotary mowing in order to avoid damage to nesting and tunneling wildlife. This method retains ground cover year around with a better mix of food species and associated high-protein insect populations for birds in the right seasons. Most also report less damage to soils (even when compared with rubber-tired equipment).

E. Property owners interested in tree production often request the use of low volume applications rather than hand or mechanical clearing because of the insect and fungus problems in damaged vegetation and debris left on the right-of-way. The insect and fungus invasions, such as pine tip moth, oak leaf blight, sycamore and dogwood blight, etc., are becoming widespread across the nation.

F. Best Management Practices (BMPs) governing application of herbicides are contained within *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities* (Muncy 2012) which is incorporated by reference. Herbicides can be liquid, granular, or powder and can be applied aerially or by ground equipment and may be selectively applied or broadcast, depending on the site requirements, species present, and condition of the vegetation. Water quality considerations include measures taken to keep herbicides from reaching streams whether by direct application or through runoff of or

flooding by surface water. "Applicators" must be trained, licensed, and follow manufacturers' label instructions, USEPA guidelines, and respective state regulations and laws.

G. When herbicides are used, their potential adverse impacts are considered in selecting the compound, formulation, and application method. Herbicides that are designated "Restricted Use" by USEPA require application by or under the supervision of applicators certified by the respective state control board. Aerial and ground applications are done either by TVA or by contractors in accordance with the following guidelines identified in the TVA BMP manual (Muncy 2012):

1. The sites to be treated are selected and application directed by the appropriate TVA official.
2. A preflight walking or flying inspection is made within 72 hours prior to applying herbicides aerially. This inspection ensures that no land use changes have occurred, that sensitive areas are clearly identified to the pilot, and that buffer zones are maintained.
3. Aerial application of liquid herbicides will normally not be made when surface wind speeds exceed 5 miles per hour, in areas of fog, or during periods of temperature inversion.
4. Pellet application will normally not be made when the surface wind speeds exceed 10 miles per hour, or on frozen or water saturated soils.
5. Liquid application is not performed when the temperature reaches 95 degrees Fahrenheit or above.
6. Application during unstable, unpredictable, or changing weather patterns is avoided.
7. Equipment and techniques are used that are designed to ensure maximum control of the spray swath with minimum drift.
8. Herbicides are not applied to surface water or wetlands unless specifically labeled for aquatic use. Filter and buffer strips will conform at least to federal and state regulations and any label requirements. The use of aerial or broadcast application of herbicides is not allowed within a streamside management zone (SMZ) adjacent to perennial streams, ponds, and other water sources. Hand application of certain herbicides labeled for use within SMZs is used only selectively.
9. Buffers and filter strips (200 feet minimum width) are maintained next to agricultural crops, gardens, farm animals, orchards, apiaries, horticultural crops, and other valuable vegetation.
10. Herbicides are not applied in the following areas or times: (a) in city, state, and national parks or forests or other special areas without written permission and/or required permits (b) off the right-of-way and (c) during rainy periods or during the 48- hour interval prior to rainfall predicted with a 20 percent or greater probability by local forecasters, when soil active herbicides are used.

H. TVA currently uses primarily low volume applications of foliar and basal applications, e.g., Accord (Glyphosate), Arsenal (Imazapyr), Clearstand (Imazapyr / Metsulfuron

Methyl), Milestone VM (Aminopyralid) and Streamline (Aminocyclopyrachlor / Metsulfuron Methyl).

4.0 References

Muncy, J. A. 2012. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities (revised edition). Edited by Abigail Bowen, Jodie Branum, Corey Chandler, Adam Dattilo, Britta Dimick, Shea Gaither, Casey Henley, Todd Liskey, Joe Melton, Cherie Minghini, Paul Pearman, Kenton Smithson, Joe Turk, Emily Willard, Robby Wilson. Norris: TVA Technical Note TVA/LR/NRM 92/1. Retrieved from <http://www.tva.com/power/projects/bmp_manual_2012.pdf> (n.d.).

U.S. Forest Service. 1989a. Vegetation Management in the Coastal Plain/Piedmont Final Environmental Impact Statement, Volumes I and II. Southern Region Management Bulletin R8-MB-23, January 1989. Atlanta, Ga.: USDA Forest Service.

———. 1989b. Vegetation Management in the Appalachian Mountains Final Environmental Impact Statement, Volumes I and II. Southern Region Management Bulletin R8-MB-38, July 1989. Atlanta, Ga.: USDA Forest Service.

———. 2002a. Vegetation Management in the Appalachian Mountains Final Environmental Impact Statement Supplement. Southern Region Management Bulletin R8-MB-97A, October 2002. Atlanta, Ga.: USDA Forest Service.

———. 2002b. Vegetation Management in the Coastal Plain/Piedmont Final Environmental Impact Statement Supplement. Southern Region Management Bulletin R8-MB-98A, October 2002. Atlanta, Ga.: USDA Forest Service.

APPENDIX F

CONSULTATION INFORMATION

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

January 20, 2021

Mr. E. Patrick McIntyre, Jr.
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), RIDGELY SOLAR PROJECT, LAKE COUNTY, TENNESSEE (TVA PROJECT NUMBER CID# 78812)

TVA proposes to enter into a Power Purchase Agreement (PPA) with Ridgely Energy Farm, LLC (Ridgely Energy) to purchase the power generated by the proposed Ridgely Solar Project in Lake County, Tennessee. The proposed solar facility would be constructed and operated by Ridgely Energy. In addition to purchasing the electric output under the PPA with Ridgely Solar, TVA also proposes to build the interconnection facilities and communications equipment required to connect Ridgely Solar to the electrical grid. This includes the construction of a new 161-kiloVolt (kV) three-position ring bus station on the property. In addition, upgrades and communication equipment may be needed on the existing 161-kV transmission line (TL) right-of-way (ROW) between the Tiptonville and Dyersburg substations. TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance, where physical effects could occur including the footprint of the solar array, any supporting infrastructure and access roads (2454.60 acres), and the approximately 5.5 miles of 100 foot Tiptonville TL ROW where upgrades are proposed as well as areas within a half-mile radius of the project within which the project would be visible, where visual effects on aboveground resources could occur.

Ridgely Energy contracted with AECOM to conduct the Phase I Cultural Resources survey. The resulting report for the archaeological survey, titled *A Phase I Archaeological Survey of the Ridgely Solar Project, Lake County, Tennessee* and the architectural survey, titled *Phase I Historic Resources Report for Ridgely Solar Project, Ridgely, Tennessee*, can be downloaded.

Architectural Resources
AECOM's background check at the Tennessee Historical Commission identified 44 previously recorded architectural resources. Thirty-six of these resources are no longer extant (Table 3-1 in the referenced architectural report). During the current survey, AECOM revisited previously recorded architectural resources LK-98, LK-108, LK-112, LK-113, LK-278, LK-269, LK-258, and LK-257. In addition, AECOM identified 35 previously unrecorded historic resources (HR#1-9, #11-14, #16, #19-21, #23-24, #27-43, #45-48) within the APE. AECOM recommends that the

35 newly identified architectural resources and seven of the previously recorded resources do not meet, either individually or collectively, the criteria for National Register Historic Places (NRHP) inclusion due to a lack of significance and/or architectural integrity. One previously recorded historic resource, LK-258 (Parker House), is recommended eligible for listing in the NRHP under Criterion A. As the viewshed is predominately masked by existing vegetation and has already been compromised by existing modern residential development, TVA finds that the proposed undertaking would have no effect to LK-258.

Archaeological Resources

A portion of the APE associated with the 5.5 miles of TL ROW upgrades was previously surveyed (McKee 2011). The previous survey identified three sites (40LK117, 40LK118, and 40LK119) within the current APE. All three sites were determined, in consultation, to be ineligible for the NRHP. In addition, site 40LK72 and a portion of site 40LK92 were previously recorded within the APE. Site 40LK73 was listed as "destroyed". AECOM revisited 40LK72 and identified a small pre-contact artifact surface scatter. Shovel testing in this location failed to identify any artifacts below the ground surface or potential intact deposits. AECOM recommends the site ineligible for the NRHP based on lack of integrity. Site 40LK92 was recorded as a Historic World War II bombing range based on archival documentation. AECOM failed to identify any cultural resources associated with the site. During the current archaeological survey, AECOM identified 12 isolated finds, 11 historic artifact scatters (40LK126, 40LK127, 40LK133, 40LK148, 40LK156, 40LK160, 40LK137, 40LK138, 40LK139, 40LK145, 40LK146), 32 pre-contact sites (40LK164, 40LK165, 40LK128 - 40LK131, 40LK134, 40LK149, 40LK150, 40LK157,40LK144, 40LK135, 40LK158, 40LK159, 40LK143, 40LK151-40LK155, 40LK161-40LK163), and six multicomponent historic and pre-contact sites (40LK125, 40LK132, 40LK147, 40LK141, 40LK140, 40LK71). AECOM recommends all but seven of these archaeological resources not eligible for the NRHP due to lack of integrity and research value. AECOM recommends the remaining seven archaeological sites (40LK71, 40LK128, 40LK130, 40LK131, 40LK142, 40LK157, 40LK161) as undetermined for NRHP eligibility.

In order to avoid effects to these potentially eligible sites, the boundaries of the sites, along with a 20-meter buffer, has been added to the "exclusion areas" within the project area (Figure 1). Ridgely Solar will avoid these exclusion areas from any development, disturbance, or other construction activities associated with the development of the project or future activities associated with the operation and maintenance of the solar array. In order to ensure avoidance of these sites during the life of the project, Ridgely Energy and TVA will sign the attached draft legal agreement.

TVA has read the referenced reports and agrees with the recommendations of the authors. TVA finds that with the aforementioned avoidance plan in place the proposed undertaking would have no effects to historic properties. Pursuant to 36 CFR Part 800.4(d)(1) we are notifying you of TVA's finding of no historic properties affected, providing the documentation specified in § 800.11(e); and inviting you to review the finding. In addition, we are seeking your agreement with TVA's eligibility determinations.

Please contact Michaelyn Harle by email, mharle@tva.gov with your comments.

Sincerely,

Clinton E. Jones
Manager
Cultural Compliance

MSH:ABM
Enclosures
cc (Enclosures):
Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

INTERNAL COPIES NOT TO BE INCLUDED WITH OUTGOING LETTER:

S. Dawn Booker, BR 2C-C
Michael C. Easley, BR 2C-C
Brandon Hartline, BR 2C-C
Michaelyn S. Harle, WT 11C-K
Susan R. Jacks, WT 11C-K
Dana M. Nelson, WT 11C-K
Elizabeth Smith, WT 11C-K
Rebecca C. Tolene, WT 11C-K
William B. Wells, BR 2C-C
W. Douglas White, WT 11C-K
ECM, ENVRecords

Figure 1 Ridgely Solar Archaeological Resources

Withheld Under Section 304 of the National Historic Preservation Act

Letter Agreement with TVA

Re: Letter Agreement
Cultural Resources Survey Results and Section 106 Consultation

Tennessee Valley Authority ("TVA") and Ridgely Energy Farm, LLC ("Ridgely Solar") are parties to a Power Purchase Agreement ("PPA") under which TVA has agreed to purchase the power generated by the Ridgely Solar Project ("Undertaking") in Lake County, Tennessee, for a term of 20 years. The project includes solar facility to be constructed and operated by Ridgely Solar. In order to fulfill TVA's Section 106 responsibilities under the National Historic Preservation Act, Ridgely Solar conducted a Phase I cultural resources survey of the area of potential effects ("APE").

The Phase I cultural resources survey identified seven (7) archaeological sites (40LK71,40LK128, 40LK130, 40LK131, 40LK142, 40LK157, 40LK161) ("Sites") that are potentially eligible for the National Register of Historic Places (NRHP) within the project area. Ridgely Solar intends to purchase or lease the property that includes the Sites. As shown on the refined APE, Ridgely Solar excluded each of these areas from any development, disturbance, or other construction activities associated with the development of the project or future activities associated with the operation and maintenance of the project. A revised and final APE for the Undertaking is attached to this letter.

To further ensure that the Sites to be leased or owned by Ridgely Solar are adequately protected during the operation of the project, Ridgely Solar and TVA agree that no disturbance of these Sites will occur for the entire 20-year term of the PPA without TVA's review and consultation with the SHPO and federally recognized Indian tribes in accordance with applicable federal regulations prior to any disturbance of these sites.

TVA agrees that so long as Ridgely Solar avoids and does not disturb these Sites during construction or 20-year operation of the project, there will be no effect on historic properties. TVA and Ridgely Solar further agree that these avoidance measures will protect the Sites.

Very truly yours,

DocuSigned by:
Omar Aboudaher
8C6842D7B22C4D3...

DS
BD

Ridgely Energy Farm, LLC

ACCEPTED AND AGREED THIS

_____DAY OF January 2021

_____

Tennessee Valley Authority

BY: _____

ITS: _____

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

January 5, 2021

Sam Waltman
Cardno, Inc.
76 San Marcos Street
Austin, Texas 78702

Dear Mr. Waltman:

This is in reference to your request on behalf of Ridgely Energy Farm, LLC, for an approved jurisdictional determination (AJD) for a proposed solar facility located near Ridgely, Lake County, Tennessee, as shown on the enclosed map. Based on the information you provided, a site visit, and other information available to us, it is our AJD that the review area in question contains both jurisdictional and non-jurisdictional wetlands and streams as described in the attached AJD Form.

The basis for our AJD is available on our website at the following address: http://www.mvm.usace.army.mil/About/Offices/Regulatory/JurisdictionalDeterminations.aspx. This AJD is valid for five years from the date of this letter, unless new information warrants a revision of the determination before the expiration date or the District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

If you object to this AJD, you may request an administrative appeal under Corps of Engineers regulations at 33 CFR Part 331 as described in Section I.D. of the attached Notification of Administrative Appeal Options and Process and Request for Appeal (RFA) form. The completed RFA form must be submitted to the Mississippi Valley Division, Administrative Appeals Review Officer, P.O. Box 80, Vicksburg, Mississippi 39181-0080 within 60 days from the date of this letter. In order for an RFA to be accepted by the Corps of Engineers, the Corps of Engineers must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 and that it has been received by the division office at the above address by March 6, 2021. Please review and carefully consider this information. It is not necessary to submit an RFA form to the division office if you do not object to the decision in this letter.

This determination has been conducted to identify the limits of the Corps of Engineers Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are United States Department of Agriculture (USDA) program participants, or anticipate participation in the USDA program, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

The Memphis District, Regulatory Division is committed to providing quality and timely service to our customers. In an effort to improve customer service, we invite you to complete a Customer Service Survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Your comments, positive or negative, will not affect any current or future dealings with the Corps of Engineers.

If you have questions, please contact Ben Pitcock at (901) 544-3468 and refer to File No. MVM-2020-264.

Sincerely,

Tim H. Flinn, P.E.
Memphis District
Regulatory Division

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Sam Waltman, Cardno, Inc., on behalf of Ridgely Energy Farm, LLC	File Number: MVM-2020-264	Date: 1/5/2021

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Gregg Williams
USACE – Memphis District
Regulatory Division
167 North Main Street B-202
Memphis, Tennessee 38103-1894
(901) 544-0736

If you only have questions regarding the appeal process you may also contact: Administrative Appeals Review Officer
USACE – Mississippi Valley Division
P.O. Box 80
Vicksburg, MS 39181-0080
(601) 634-5820

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

MVD version revised November 30, 2010

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 1/5/2021
ORM Number: MVM-2020-264
Associated JDs: MVM-2020-264
Review Area Location[1]: State/Territory: Tennessee City: Ridgely County/Parish/Borough: Lake
Center Coordinates of Review Area: Latitude 36.298885° Longitude -89.476030°

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☒ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
S-D-2 (Blue Bank Bayou	3505.05	linear feet	(a)(2) Perennial tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Blue Bank Bayou is a well-known stream that is mapped as a blue line on topographic maps.
S-E-1	110.96	linear feet	(a)(2) Perennial tributary contributes	This stream contributes flow directly into an (a)(1) water.

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
			surface water flow directly or indirectly to an (a)(1) water in a typical year.	
S-E-3	109.19	linear feet	(a)(2) Perennial tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	This stream contributes flow directly into an (a)(1) water.
Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
Wetland-D-1	1.52	acre(s)	(a)(4) Wetland abuts an (a)(1)-(a)(3) water.	This wetland is adjacent to Blue Bank Bayou which flows into the Mississippi River.
Wetland-E-3	0.18	acre(s)	(a)(4) Wetland abuts an (a)(1)-(a)(3) water.	This wetland is adjacent to Blue Bank Bayou which flows into the Mississippi River.
Wetland-E-4	0.05	acre(s)	(a)(4) Wetland abuts an (a)(1)-(a)(3) water.	This wetland is adjacent to Blue Bank Bayou which flows into the Mississippi River.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
Wetland-B-1	0.44	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-1	0.02	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-2	3.37	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-3	0.13	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-4	11.91	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.

[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
Wetland-C-5	0.21	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-6	0.19	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-7	1.50	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-8	0.58	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-9	0.10	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-10	0.04	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-11	0.07	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-C-12	0.03	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-D-2	23.38	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-E-1	0.30	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-E-2	0.25	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-E-5	0.28	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Wetland-E-6	0.01	acre(s)	(b)(1) Non-adjacent wetland.	This wetland does not abut an (a)(1) – (a)(3) water.
Stream S-A-1	2204.91	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-A-2	2326.17	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-A-3	4249.47	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-A-4	3108.14	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
Stream S-A-5	1387.10	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-B-1	4425.78	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-B-2	2034.47	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-B-3	682.78	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-1	2057.52	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-2	498.33	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-3	1026.2	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-4	761.39	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-5	1106.07	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-6	670.30	linear feet	(b)(3) Ephemeral feature, including	This stream only flows in direct response to precipitation.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
			an ephemeral stream, swale, gully, rill, or pool.	
Stream S-C-7	701.54	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-8	1216.49	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-C-9	116.01	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-1	649.23	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-3	4621.98	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-4	1483.61	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-5	3185.35	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-6	1183.66	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-D-7	1810.63	linear feet	(b)(3) Ephemeral feature, including an ephemeral	This stream only flows in direct response to precipitation.

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
			stream, swale, gully, rill, or pool.	
Stream S-D-8	1378.02	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.
Stream S-E-2	126.19	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	This stream only flows in direct response to precipitation.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

- ☒ Information submitted by, or on behalf of, the applicant/consultant: Sam Waltman, Cardno, Inc.
  This information is sufficient for purposes of this AJD.
  Rationale: A site visit was performed by Memphis District Regulatory personnel to validate the agent's findings.
- ☐ Data sheets prepared by the Corps: Title(s) and/or date(s).
- ☒ Photographs: Aerial and Other: Ridgely Solar Facility, Natural Resources Report, Cardno, Inc.
- ☒ Corps site visit(s) conducted on: October 2, 2020
- ☐ Previous Jurisdictional Determinations (AJDs or PJDs): ORM Number(s) and date(s).
- ☒ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.
- ☐ USDA NRCS Soil Survey: Title(s) and/or date(s).
- ☐ USFWS NWI maps: Title(s) and/or date(s).
- ☐ USGS topographic maps: Title(s) and/or date(s).

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

B. Typical year assessment(s): The antecedent precipitation tool calculated the day of the site visit to be "Normal Conditions".

C. Additional comments to support AJD: Please reference the attached maps and tables for the reviewed area's boundaries, features and locations.

Table 5-2 Delineated Wetlands Ridgely Properties

Wetland ID	Latitude	Longitude	Type	Acreage	Potentially Jurisdictional (USACE)	TVA Ram Category
WET-B-1	36.29936969	-89.49622882	PEM	0.44	No	1
WET-C-1	36.30465743	-89.46416312	PFO	0.02	No	1
WET-C-2	36.30160638	-89.46387351	PFO	3.37	No	2
WET-C-3	36.29770457	-89.46488503	PEM	0.13	No	2
WET-C-4	36.2966913	-89.46366472	PFO	11.91	No	2
WET-C-5	36.29720299	-89.46373537	PUB	0.21	No	-
WET-C-6	36.29638432	-89.46205866	PEM	0.19	No	1
WET-C-7	36.29424472	-89.4654706	PFO	1.50	No	2
WET-C-8	36.29345616	-89.4650397	PFO	0.58	No	2
WET-C-9	36.29337773	-89.46549164	PEM	0.10	No	1
WET-C-10	36.29389261	-89.46526275	PEM	0.04	No	1
WET-C-11	36.29209394	-89.47315356	PEM	0.07	No	1
WET-C-12	36.29343965	-89.46196966	PEM	0.03	No	1
WET-D-1	36.29972911	-89.48172331	PFO	1.52	Yes	3
WET-D-2	36.30678047	-89.48968232	PEM	23.38	No	1
Total				**43.48**		
Total Non-jurisdictional				**41.96**		
Total Jurisdictional				**1.52**		

Table 5-3 Delineated Wetlands TVA Transmission Line

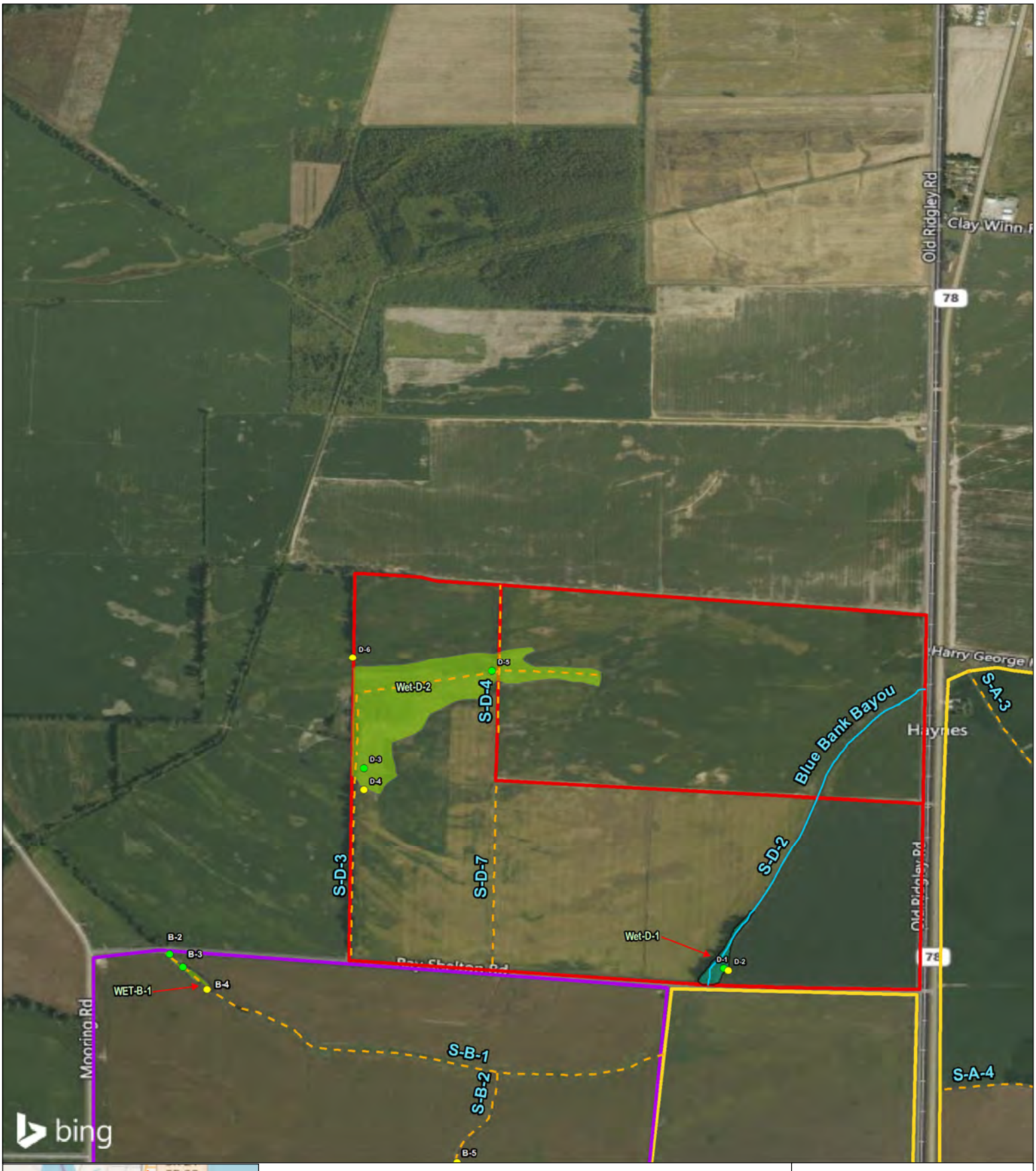
Wetland ID	Latitude	Longitude	Type	Acreage	Jurisdictional	TVA Ram Category
WET-E-1	36.35558152	-89.46275997	PEM	0.30	No	1
WET-E-2	36.357638	-89.46262957	PEM	0.25	No	1
WET-E-3	36.36424257	-89.46237973	PEM	0.18	Yes	1
WET-E-4	36.34742589	-89.46296531	PEM	0.05	Yes	1
WET-E-5	36.34049823	-89.46206794	PEM	0.28	No	1
WET-E-6	36.35328427	-89.46266763	PUB(x)	0.01	No	-
Total				**1.08**		
Total Non-jurisdictional				**0.85**		
Total Jurisdictional				**0.23**		

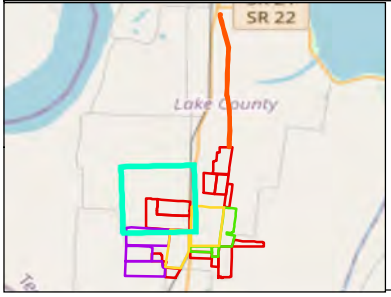
Table 5-4 Delineated Streams (Parcels)

Stream ID	Latitude	Longitude	Flow Type	Stream Length (ft)	Water Depth (In.)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)	TVA/TDEC Hydrologic Determination
S-A-1	36.29361973	-89.48019616	Ephemeral	2204.91	0	1.5	Organic	No	WWC
S-A-2	36.29181326	-89.48036527	Ephemeral	2326.17	0	2	Organic	No	WWC
S-A-3	36.30372675	-89.47033375	Ephemeral	4249.47	0	1.5	Organic	No	WWC
S-A-4	36.29672567	-89.47082873	Ephemeral	3108.14	0	1.5	Organic	No	WWC
S-A-5	36.29493945	-89.47071408	Ephemeral	1387.10	0	1.5	Organic	No	WWC
S-B-1	36.29912288	-89.49590662	Ephemeral	4,425.78	0	3	Organic	No	WWC
S-B-2	36.2944816	-89.48784093	Ephemeral	2034.47	0	2.5	Organic	No	WWC
S-B-3	36.28329525	-89.48726944	Ephemeral	682.78	0	2	Organic	No	WWC
S-C-1	36.30552392	-89.46278916	Ephemeral	2057.52	0	5	Organic	No	WWC
S-C-2	36.30435223	-89.45985129	Ephemeral	498.33	0	3	Organic	No	WWC
S-C-3	36.30431856	-89.46239501	Ephemeral	1026.20	0	0.5	Organic	No	WWC
S-C-4	36.29214069	-89.46838184	Ephemeral	761.39	5	3	Organic	No	WWC
S-C-5	36.29276419	-89.47416859	Ephemeral	1106.07	0	0.5	Organic	No	WWC
S-C-6	36.29238675	-89.47256052	Ephemeral	670.30	0	0.5	Organic	No	WWC
S-C-7	36.29219653	-89.47593231	Ephemeral	701.54	0	0.5	Organic	No	WWC
S-C-8	36.29471877	-89.46086041	Ephemeral	1216.49	0	0.5	Organic	No	WWC
S-C-9	36.293133	-89.46147992	Ephemeral	116.01	0	0.5	Organic	No	WWC
S-D-1	36.30746981	-89.46303895	Ephemeral	649.23	2	5	Organic	No	WWC
S-D-2	36.30326065	-89.47950092	Perennial	3505.05	10	6	Organic	Yes	Stream
S-D-3	36.30507805	-89.49027135	Ephemeral	4621.98	2	3	Organic	No	WWC
S-D-4	36.3078735	-89.4877841	Ephemeral	1483.61	3	3	Organic	No	WWC
S-D-5	36.29490616	-89.4551541	Ephemeral	3185.35	0	3	Organic	No	WWC
S-D-6	36.31422041	-89.46931254	Ephemeral	1183.66	0	3	Organic	No	WWC
S-D-7	36.30194944	-89.48792695	Ephemeral	1810.63	0	3	Organic	No	WWC
S-D-8	36.28960381	-89.46360755	Ephemeral	1378.02	0	3	Organic	No	WWC
Total				**46390.19**					
Total Non-jurisdictional				**42,885.14**					
Total Jurisdictional				**3505.05**					

Table 5-5 Delineated Streams (TVA TLine)

Stream ID	Latitude	Longitude	Flow Type	Length within ROW (ft)	Water Depth (In.)	Top of Bank at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)	TVA/TDEC Hydrologic Determination
S-E-1	36.36372221	-89.46239008	Perennial	110.96	12	10	Unconsolidated	Yes	Not Scored – No impacts Anticipated
S-E-2	36.36644718	-89.46297969	Ephemeral	126.19	3	4	Unconsolidated	No	
S-E-3	36.34721516	-89.4630439	Perennial	109.19	12	9	Unconsolidated	Yes	
Total				**346.34**					
Total Non-jurisdictional				**126.19**					
Total Jurisdictional				**220.15**					





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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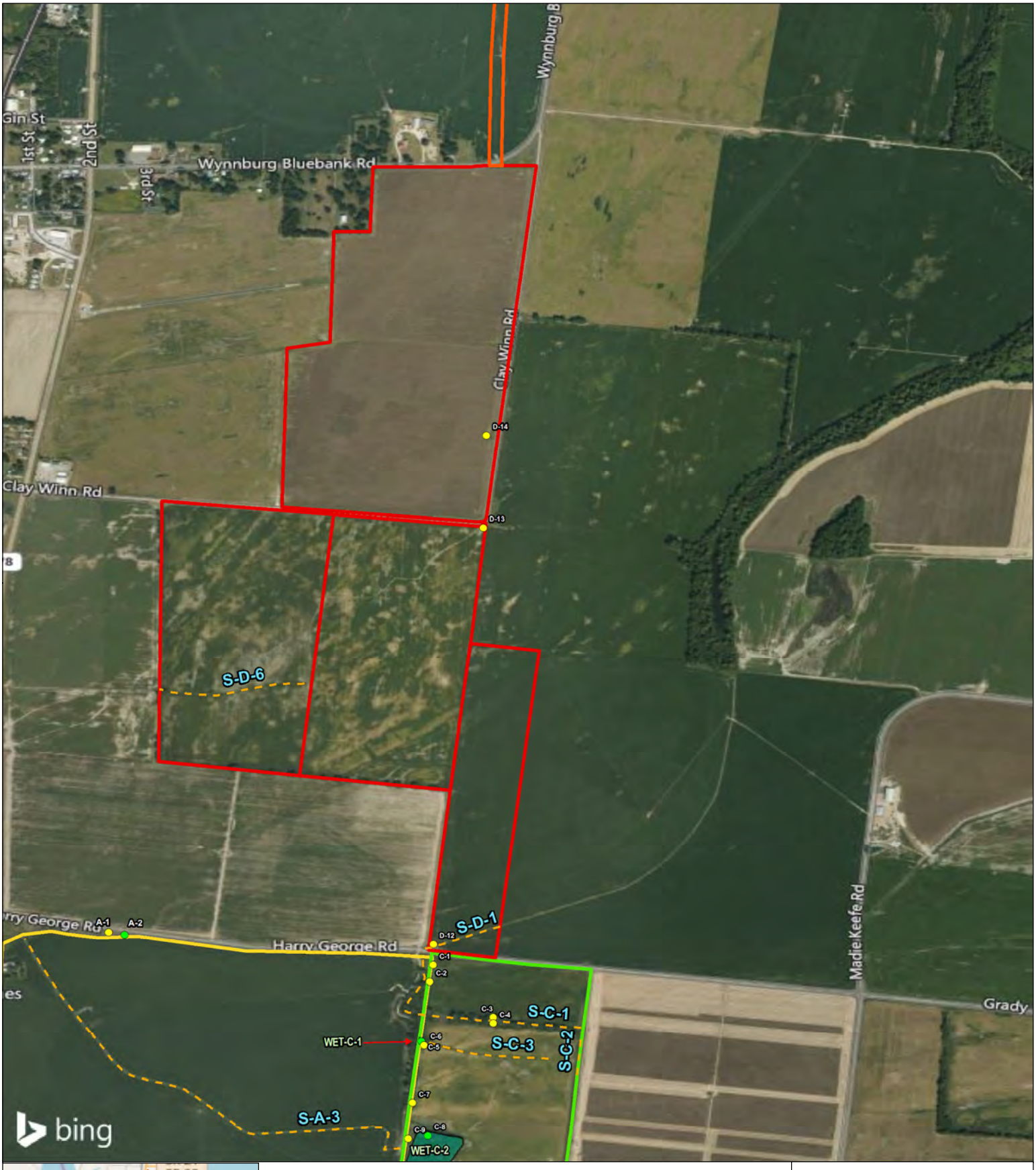
First Solar Ridgely

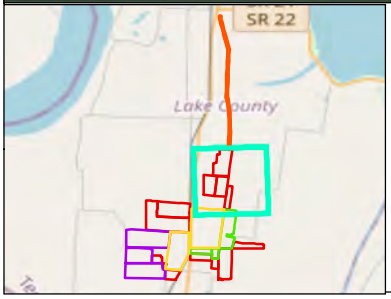
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-1

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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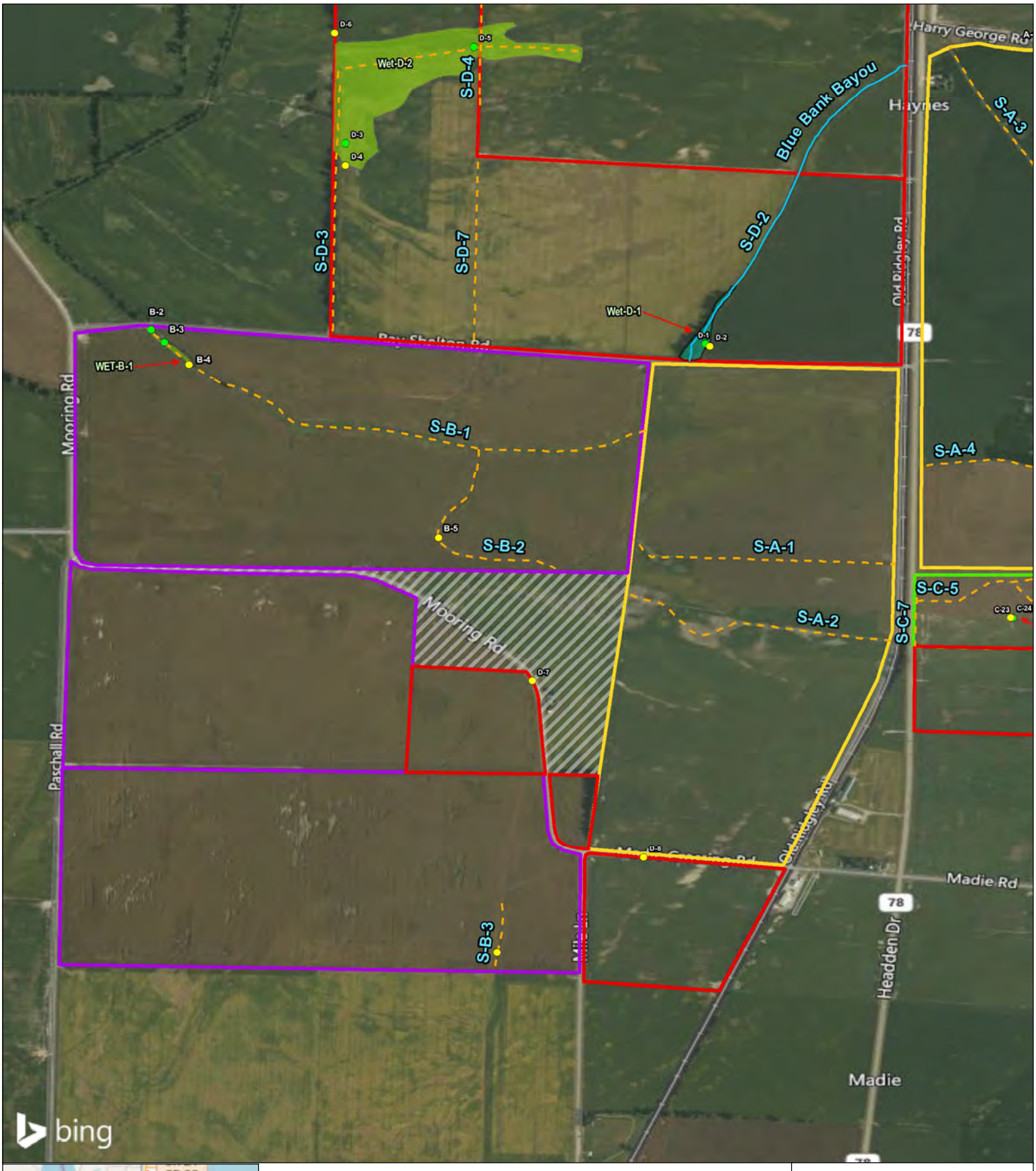
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-2

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



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Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-3

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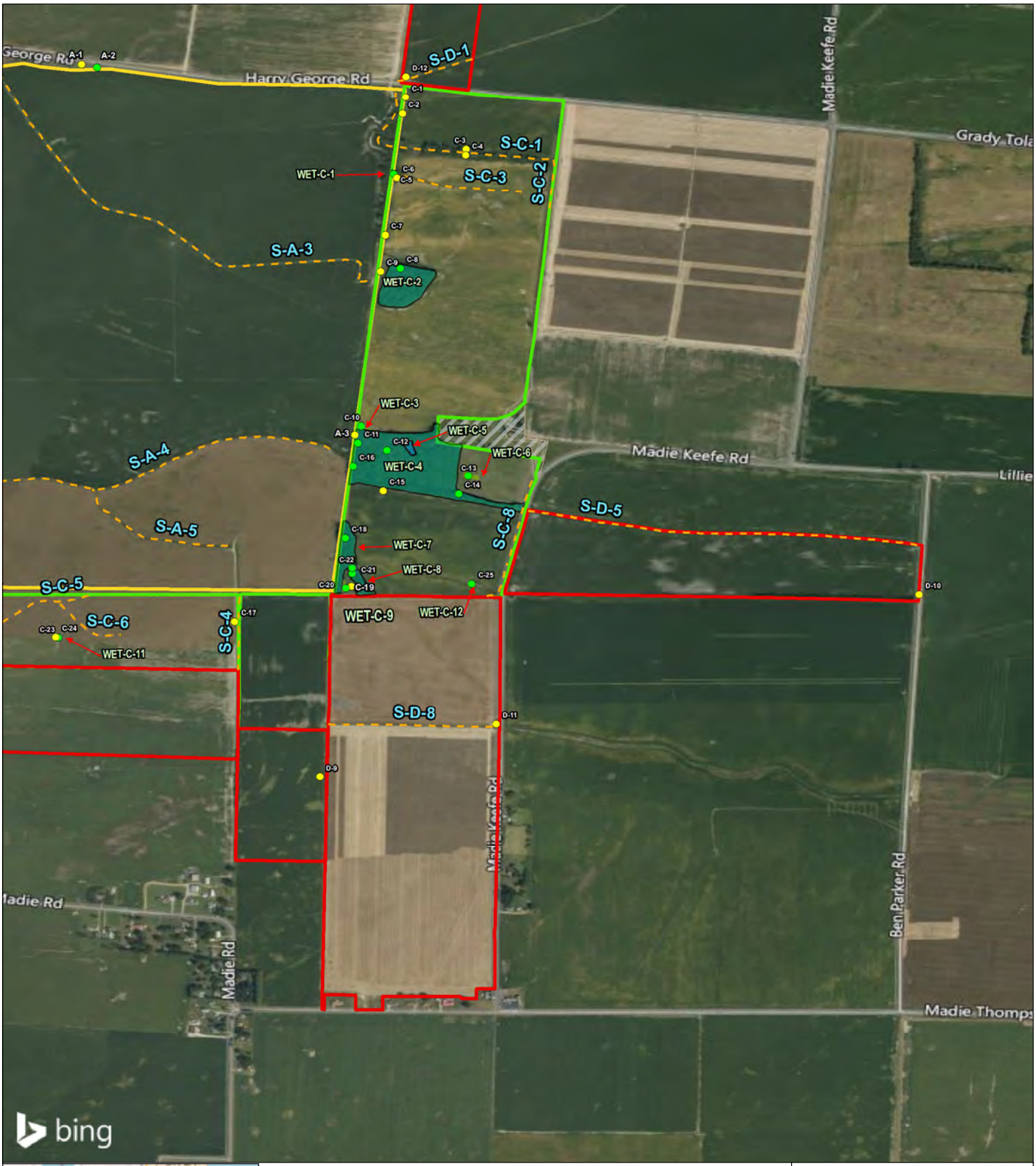
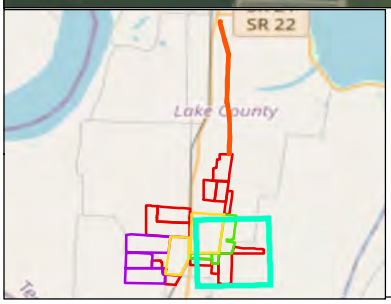
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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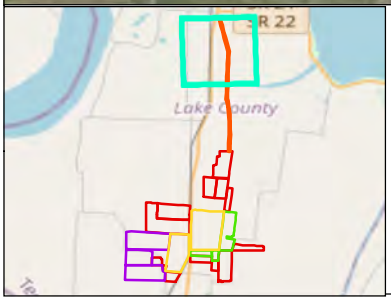
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-4

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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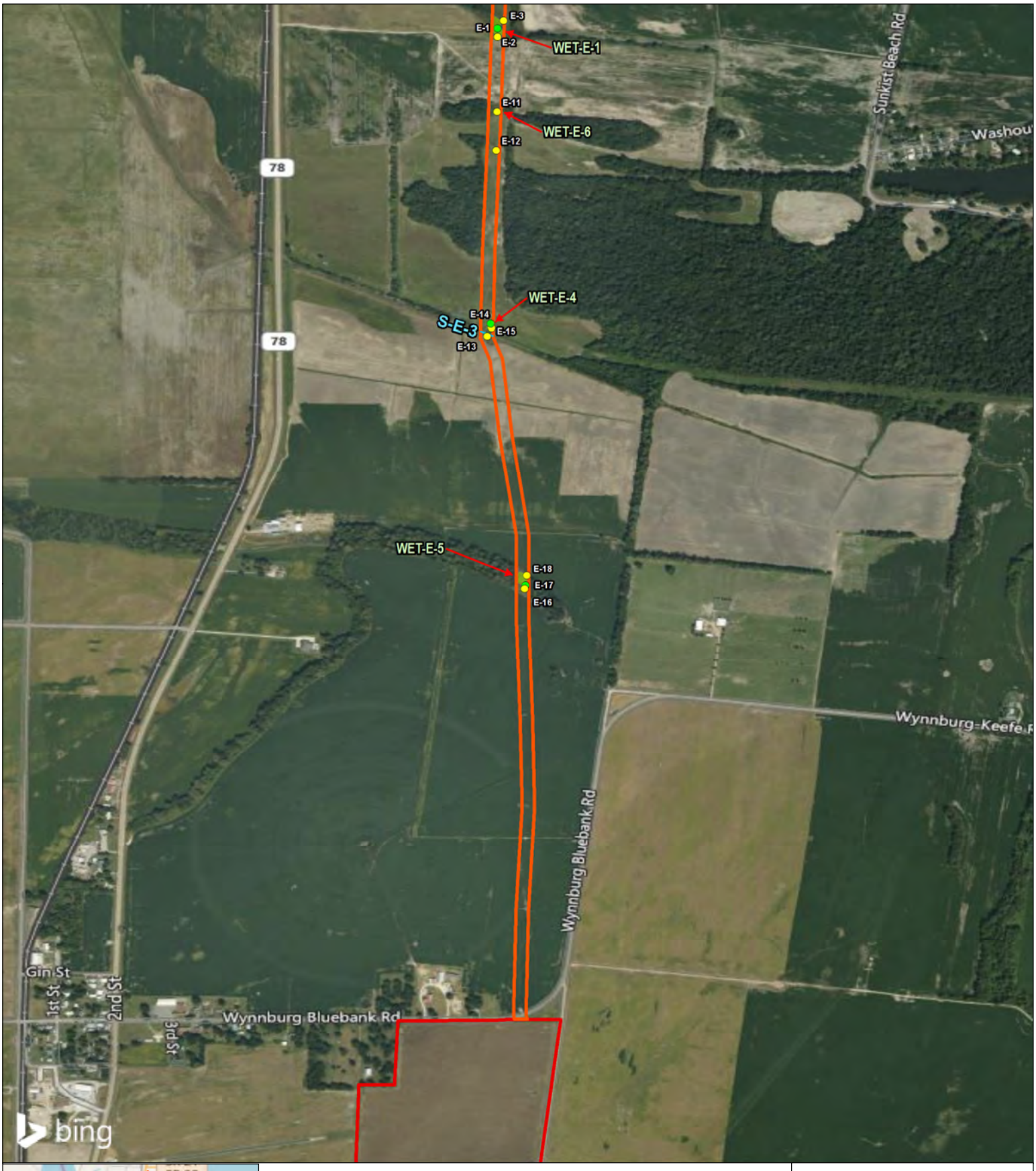
First Solar Ridgely

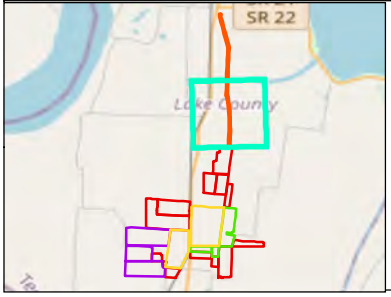
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-5

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

N

0 250 500 1,000
Feet

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First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-6

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

December 15, 2020

Mr. Daniel Elbert
U.S. Fish and Wildlife Service
Tennessee Field Office
446 Neal Street
Cookeville, Tennessee 38501

Dear Mr. Elbert:

TENNESSEE VALLEY AUTHORITY (TVA) – RIDGELY SOLAR PROJECT – REQUEST FOR CONCURRENCE

TVA has entered into a power purchase agreement (PPA) with Ridgely Energy Farm, LLC (referred to herein as "Ridgely Solar"), to purchase the power generated by the proposed Ridgely Solar Project (Project) in Lake County, Tennessee. The Project site is able to accommodate as much as 300 megawatts (MW) alternating current (AC) in generating capacity and would be constructed and operated by Ridgely Solar. Under the terms of the conditional PPA between TVA and Ridgely Solar, TVA would purchase the electric output generated by the initial 177 MW proposed solar facility on the Project site for an initial term of 20 years. Additionally, TVA proposes to build the interconnection facilities and communications equipment required to connect Ridgely Solar to the existing electrical grid. This includes the construction of a new 161-kilovolt (kV) multi-breaker ring bus switching station and subsequent connections to the existing TVA Tiptonville to Highway 412/Dyersburg 161-kV transmission line.

The total Project area is approximately 2,404 acres (2,344 acres for the proposed solar facility and upgrades to approximately 60 acres of existing TVA transmission line right-of-way [ROW]). Approximately 1,961 acres would be permanently disturbed (e.g., solar arrays, substation, switching station, retention basins, operation and maintenance [O&M] building, etc.), and 103 acres would be temporarily disturbed (e.g., laydown area, underground mega-volt ampere [MVA] gen-tie easement, transmission ROW). Approximately 1.7 acres of forest is proposed for removal. Jurisdictional wetlands and streams would be avoided to the greatest extent possible. See attached First Solar Ridgely Natural Resources Report (FSRNRR) for figures, and photographs.

Review of the TVA Regional Natural Heritage database and the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) website identified five species listed as federally endangered, threatened, candidate, or delisted and monitored under the Endangered Species Act (ESA) that have the potential to occur within the project area in Lake County, Tennessee. These species include one fish (pallid sturgeon), two birds (bald eagle and interior least tern) and two mammals (Indiana bat and northern long-eared bat) that have the potential to occur within Lake County based on historic range, proximity to known occurrence records,

biological characteristics, and/or physiographic characteristics. No federally designated critical habitats for these species are present within or adjacent to the project action area, therefore no adverse modification of critical habitats would occur.

Multiple field surveys were conducted by biologists from Cardno from July 2016 to August 2020 to determine whether suitable habitat for federally listed species occurs within the Project area. Onsite investigations identified 25 ephemeral drainages, 21 wetlands, one intermittent stream, three perennial stream, and two excavated pond. A total of 43,541.25 linear feet of streams and empemeral drainages would be impacted. Approximately 23.5 acres of wetlands may be impacted as well; however 29.97 acres of wetlands would be avoided much of which is forested wetland habitat.

Phase 1 Bat Habitat Assessments were conducted using the 2018 Range-Wide Indiana Bat Summer Survey Guidelines for determining presence/absence of the federally endangered Indiana bat and the federally threatened Northern Long Eared Bat (NLEB). No caves, mines, bridges, derelict buildings, or other potential winter roosting structures were identified during field surveys of the project action area. Potentially suitable summer roosting habitat for Indiana bat and NLEB occurs within the forested fragments in the Project area (see FSRNRR dated Nov 12, 2020 Appendix B, pages 242, 245, and 255). Suitable foraging habitat for bats was observed within the perennial stream corridors, fencerows, wetlands, pond, and forests throughout the Project site.

No large, turbid, free-flowing riverine habitat such as the Mississippi River occurs on site or would be impacted by the proposed actions. Therefore, no impacts to habitat for pallid sturgeon would occur. Sandbars, mudflats, or sparsely vegetated sandy or gravel areas along major rivers also are not present in the Project area, and therefore no interior least tern habitat would be impacted. TVA has determined there would be no effects to interior least tern or pallid sturgeon as a result of the proposed actions.

Four bald eagle nests are known from Lake County. Suitable foraging habitat and trees for roosting and nesting are not present in the predominantly agricultural Project area. The closest known bald eagle nest is approximately 3.2 miles away and would not be impacted. Actions are in compliance with the National Bald Eagle Management Guidelines. TVA has determined there would be no effects to bald eagle as a result of the proposed actions.

The nearest known record of Indiana bat is from Fulton County, Kentucky where a bat was tracked by Copperhead Consulting during a 2017 spring migration study to a tree on Reelfoot National Wildlife Refuge near the Tennessee/Kentucky state line, approximately 11.5 miles from the Project area. No known hibernacula or maternity roosts for Indiana bat occur within ten miles of the project site. No known hibernacula or maternity roosts for this species occur within five miles of the project site.

Up to 1.7 acres of suitable summer roosting habitat for Indiana bat and NLEBs may be removed (see attached Figure 1 for Forested Area Overview Map). All tree removal would occur between October 15 and March 31, outside of the time when Indiana bat and NLEB pups would be

present in maternity roosts (June 1 - July 31). Best Management Practices would be used around bodies of water, minimizing sedimentation and changes to hydrology. Due to the distance from known records and seasonal restrictions on tree removal, TVA has determined that the removal of this small amount of suitable summer roosting habitat may affect, but would not likely adversely affect Indiana bat and northern long-eared bat.

We respectfully request concurrence with our determination. Should you have any questions or wish to discuss the project in more detail, please contact Elizabeth Hamrick at ecburton@tva.gov.

Sincerely,

W. Douglas White
Manager
Biological Compliance

EBH:ABM
Enclosures

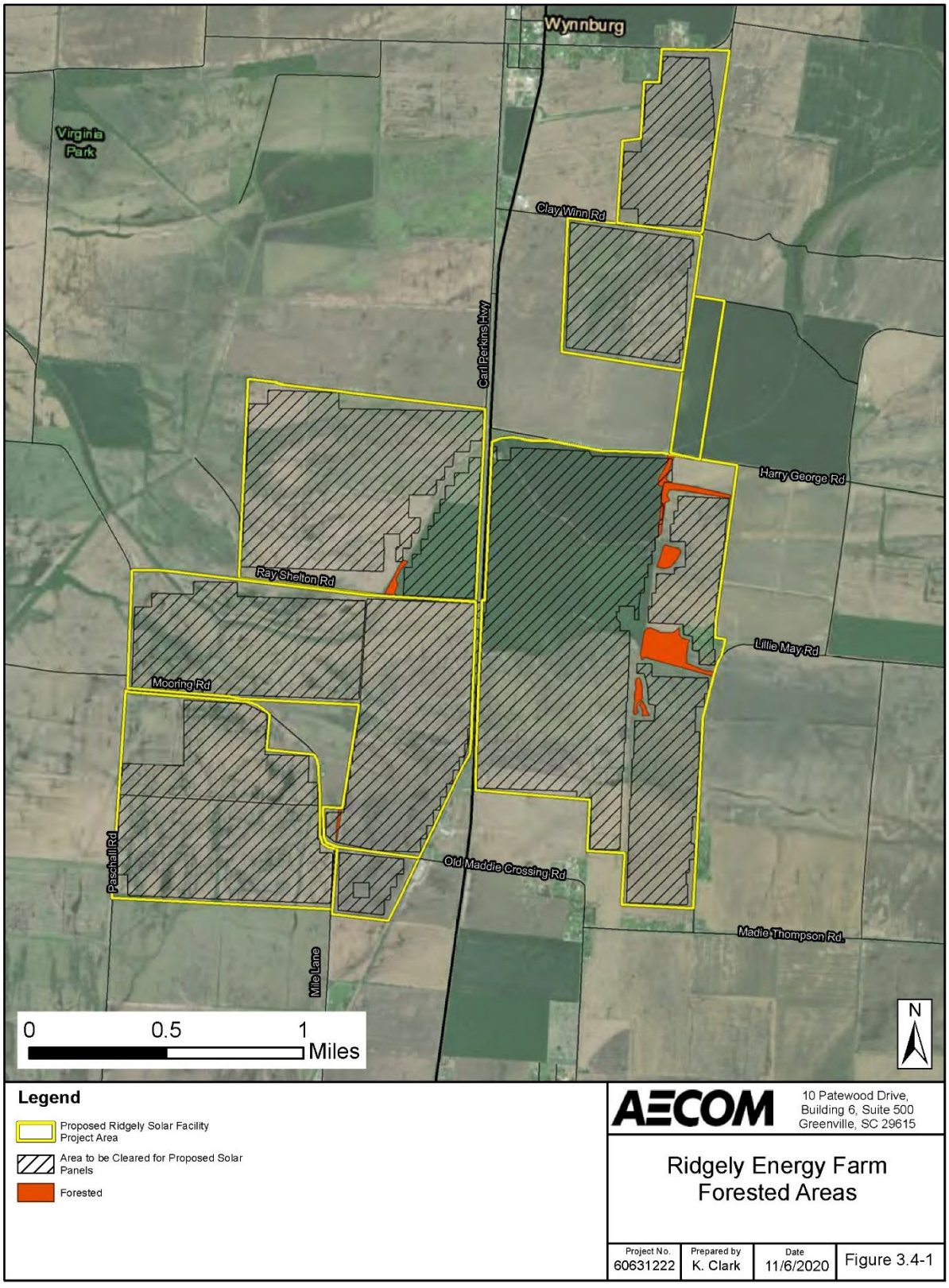


Figure 1. Forested Areas and Proposed Solar Panel Clearing within the Proposed Ridgely Solar Project Site, Lake County, Tennessee.

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
JACKSON ENVIRONMENTAL FIELD OFFICE
DIVISION OF WATER RESOURCES
1625 HOLLYWOOD DRIVE
JACKSON, TN 38305
PHONE 731-512-1300 STATEWIDE 1-888-891-8332 FAX 731-661-6283

December 10, 2020

Chad Martin, Project Manager
Senior Principal – Environmental Permitting Section
CARDNO
76 San Marco Street
Austin, TX 78702

Re: hydrodeterminations at Ridgely Energy Farm, LLC

Dear Chad:

Thank you so much for working with me on getting the hydro-determination calls for the linear features on the Ridgely Energy Farm correct. I also greatly appreciate Frank meeting me in the field to view several of these features and discuss the hydro-determination process in Tennessee.

I have reviewed all the updated information and found it to be accurate. All HD information has been uploaded to our database. I concur with the determination of 18 wet weather conveyance segments and 3 stream segments (Sb1a, SD1 and SD2) located within the project boundaries. As I understand it the project has been redesigned to avoid any impacts to stream segments.

This concurrence did not consider any wetland determinations made within the project boundaries. Concurrence with any wetland calls should be coordinated through the Memphis District Army Corps of Engineers. Any isolated wetland call from the Corps may require a water quality from the State of Tennessee to alter. Please contact this office if this occurs.

Also be advised that CGP coverage will be required for this project. This can be coordinated through our office. Please contact Gregg Overstreet at Gregg.overstreet@tn.gov or 731-512-1308.

Sincerely,

Amy Fritz

Department of Environment & Conservation

Amy Fritz, Environmental Consultant
Division of Water Resources
Jackson Environmental Field Office

Grace, Erika

Subject: AJD Request: Ridgely Tennessee
Attachments: Appendix C Project Mapping.pdf; First Solar Ridgely Parcels_Delineated Features.kmz; First Solar Ridgely Parcels_Delineated Features.kmz

From: Samuel Waltman
Sent: Wednesday, September 9, 2020 3:40 PM
To: roger.s.allan@usace.army.mil
Subject: AJD Request: Ridgely Tennessee

Hi Roger,

Attached is an RGL 16-1 requesting an AJD at a 2,411-acre project site near the City of Ridgely in Lake County, Tennessee. This project area is the site of a proposed solar facility. Also attached are Delineation maps of the project area, as well as a kmz for the parcels. I will need to create a kmz for the transmission line portion of the delineation and will send that along shortly. Also I would like to send you the full delineation report; however it may be too large for email (~26mb). Do you have a secure server that I could upload this to? I would just invite you to our sharepoint for download but I know the Corps have previously had security concerns with that, so just let me know.

Thank you!

Sam Waltman
ENVIRONMENTAL PROJECT MANAGER
CARDNO

Mobile +1 713 301 2179
Address 76 San Marcos Street, Austin, Texas 78702
Email Email Web www.cardno.com

CONNECT WITH CARDNO

Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: District Name Here

- I am requesting a JD on property located at: TN-78 and Harry George Rd
  (Street Address)
  City/Township/Parish: Ridgely County: Lake State: TN
  Acreage of Parcel/Review Area for JD: 2,411
  Section: NA Township: NA Range: NA
  Latitude (decimal degrees): 36.298885° Longitude (decimal degrees): -89.476030°
  (For linear projects, please include the center point of the proposed alignment.)
- Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
- ___ I currently own this property. ___ I plan to purchase this property.
  _X_ I am an agent/consultant acting on behalf of the requestor.
  ___ Other (please explain): _____.
- Reason for request: (check as many as applicable)
  ___ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
  ___ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
  ___ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
  ___ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
  ___ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
  ___ A Corps JD is required in order to obtain my local/state authorization.
  ___ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
  ___ I believe that the site may be comprised entirely of dry land.
  ___ Other: _____
- Type of determination being requested:
  _X_ I am requesting an approved JD.
  ___ I am requesting a preliminary JD.
  ___ I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
  ___ I am unclear as to which JD I would like to request and require additional information to inform my decision.

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature:  Date: 09/09/2020

- Typed or printed name: Sam Waltman

Company name: Cardno, Inc.

Address: 76 San Marcos Street Austin, Texas 78702

Daytime phone no.: (713) 301-2179

Email address: sam.waltman@cardno.com

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

Natural Resources Report

Ridgely Solar Facility

Lake County, Tennessee

Cardno
Shaping the Future

Document Information

Prepared for	First Solar, Dev., LLC
Project Name	Ridgely Solar Facility Natural Resources Report
Project Number	E318201608
Project Manager	Chad Martin
Date	September 8, 2020

Prepared for:

First Solar Dev., LLC
11757 Katy Freeway. Ste. 400
Houston, TX 77079

Prepared by:

Cardno
76 San Marcos Street
Austin, Texas 78702
Tel 512 605 2640 Toll-free 800 368 7511
www.cardno.com

Table of Contents

Figures

Tables

Appendices

Acronyms

CWA	Clean Water Act
First Solar	First Solar Development, LLC
GIS	Geographic information systems
IPaC	Information for Planning and Consultation
NHD	National Hydrography Dataset
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NTCHS	National Technical Committee for Hydric Soils
NWP	Nationwide Permit
NWI	National Wetland Inventory
OHWM	Ordinary High Watermark
PDOP	Position Dilution of Precision
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
TDEC	Tennessee Department of Environment and Conservation
TLine	Transmission Line
TNW	Traditional Navigable Water
TVA	Tennessee Valley Authority
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.

1 Executive Summary

Cardno was contracted by First Solar Development, LLC (First Solar) to conduct an environmental assessment on multiple properties consisting of 2,411 acres, including 3.3 mile (40 acres) of 100-foot-wide existing transmission line right-of-way (ROW), referenced as the Ridgely Properties (Project). The Project consists of four groups of properties and a Tennessee Valley Authority (TVA) transmission line right-of-way (ROW) (designated as studies A-E) in Lake County, Tennessee that were surveyed by Cardno from July 2016 to August 2020. The tasks performed as part of this environmental assessment included a review of threatened and endangered (T&E) species, potential cultural resources, vegetation assessments, and a delineation of potential waters of the United States (WOUS). The methodology, results, and recommendations of the review as it pertains to the Project area are contained within and summarized below.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, five bird species, five fish species, nine flowering plant species, one snail species, one freshwater mussel species, and one reptile species listed by the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the Tennessee Department of Environment and Conservation (TDEC), and/or the TVA Natural Heritage Database as having the potential to occur within or be affected by the Project (**Appendix F**). No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's wren, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the Tennessee Department of Environment and Conservation (TDEC) species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American Ginseng, and Lake Cress. The Bewick's wren occupies brush thickets and scrub that are found in open country and riparian woodlands. The Striped whitelip, Mississippi Green Snake, and listed plant species are known to occur in streams, ponds, marshes, swamps, and bottomlands, thus limiting their potential suitable habitat to wetlands and waterbodies within the Project area. The eastern woodrat would be limited to the small and fragmented forested areas within the Project area. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long-eared Bat (NLEB) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the small patches of forested riparian areas and the distance to current summer and winter grounds, it is highly unlikely that the NLEB would be impacted by this Project. Though Cardno scientists did not conduct 'in water' surveys, no mussel relics were identified along their stream banks. Although the portions of Blue Bank Bayou that flow through the Project area may contain suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project.

In compliance with Section 404 of the Clean Water Act (CWA), this report contains a delineation of potential wetland features that may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Field delineations were performed by Cardno scientists during site visits to different portions of the Project from July 2016 to August 2020. All potential wetlands identified by the National Wetlands Inventory (NWI) as well as all potential jurisdictional waters identified by the National Hydrography Dataset (NHD) in the Project area during initial desktop evaluations were investigated in the field. Cardno's final review of data compiled to date was analyzed under the rules and guidelines defined in the Navigable Waters Protection Rule published on April 21, 2020 and due to be in effect on June 22, 2020. Our classification of streams and

adjacent wetlands are catalogued accordingly, to the best of our understanding of normal hydraulic conditions at the properties under review.

Cardno scientists identified **25** ephemeral drainages, **three** perennial streams, and **21** wetlands, including two excavated ponds within the Project area. From the field investigation, it was determined that **three** of the identified streams, as well as **three** of the identified wetlands may possess a hydrological connection to Blue Bank Bayou or to the Mississippi River directly. Blue Bank Bayou flows to the Mississippi River, a Traditional Navigable Water (TNW). Therefore, it is Cardno's opinion that the delineated stream S-D-2 and wetland Wet-D-1 may likely be classified as jurisdictional under USACE guidance. Likewise, due to their direct flow into the Mississippi River, S-E-1 and S-E-3 and their associated wetlands (Wet-E-3 and Wet-E-4, respectively) will also likely be classified as jurisdictional under USACE guidance. The ephemeral streams did not exhibit flow during field investigations, and eighteen of the identified wetlands, including the two excavated ponds appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance.

If any streams and/or wetlands are deemed 'jurisdictional' by the USACE, the proposed Project could be completed under a Nationwide Permit (NWP) 51. Additionally, the Project would need to develop a Storm Water Pollution Prevention Plan (SWPPP) and provide Notice of Intent (NOI) prior to Project construction. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS, including the loss of no more than 300 linear feet of stream bed. If impacts from the construction of the energy generation facility and associated infrastructure including roads, parking lots, stormwater management facilities, and pipelines permanently impact less than ½-acre then the Project may proceed under a NWP. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit. Impacts to streams or wetlands within the Project area may require an Aquatic Resource Alteration Permit (ARAP) or a Section 401 Water Quality Certification from the Tennessee Division of Water Resources.

2 Introduction

Cardno was contracted by First Solar Development, LLC (First Solar) to conduct an environmental assessment on multiple properties consisting of 2,411 acres, including 3.3 mile (40 acres) of 100-foot-wide existing transmission line right-of-way (ROW), referenced as the Ridgely Properties (Project) in Lake County, Tennessee (**Figure 2-1**). The Project consists of four groups of properties and one transmission line (TLine) ROW that were surveyed by Cardno from 2016 to 2020. These are presented as Studies A through E in **Table 2-1**.

Table 2-1 Environmental Assessment Studies Conducted in Lake County, Tennessee

Study ID	Property Parcels	Field Survey Dates
Study A	• 599-acre (Staulcup)	7/27/2016 – 7/28/2016
Study B	• 540-acre (Paschall)	9/13/2016 – 9/14/2016
Study C	• 209-acre (Leeper, Forrester, and Staulcup)	6/13/2018
Study D	• 1023-acre (Leeper, Kaiser, Forrester, Paschall, Patterson, Richardson, Staulcup, and Weakely)	6/2/2020 – 6/4/2020
Study E	• 40-acre TVA Line ROW	8/3/2020- 8/6/2020

This report contains a delineation of all resources that potentially fall under the jurisdiction of the USACE. Cardno conducted desktop investigations to:

> Identify potential environmental permits that may be required to construct the Project; and

> Review and document cultural resources that may be located within or in close proximity to the Project area that may be impacted by Project activities.

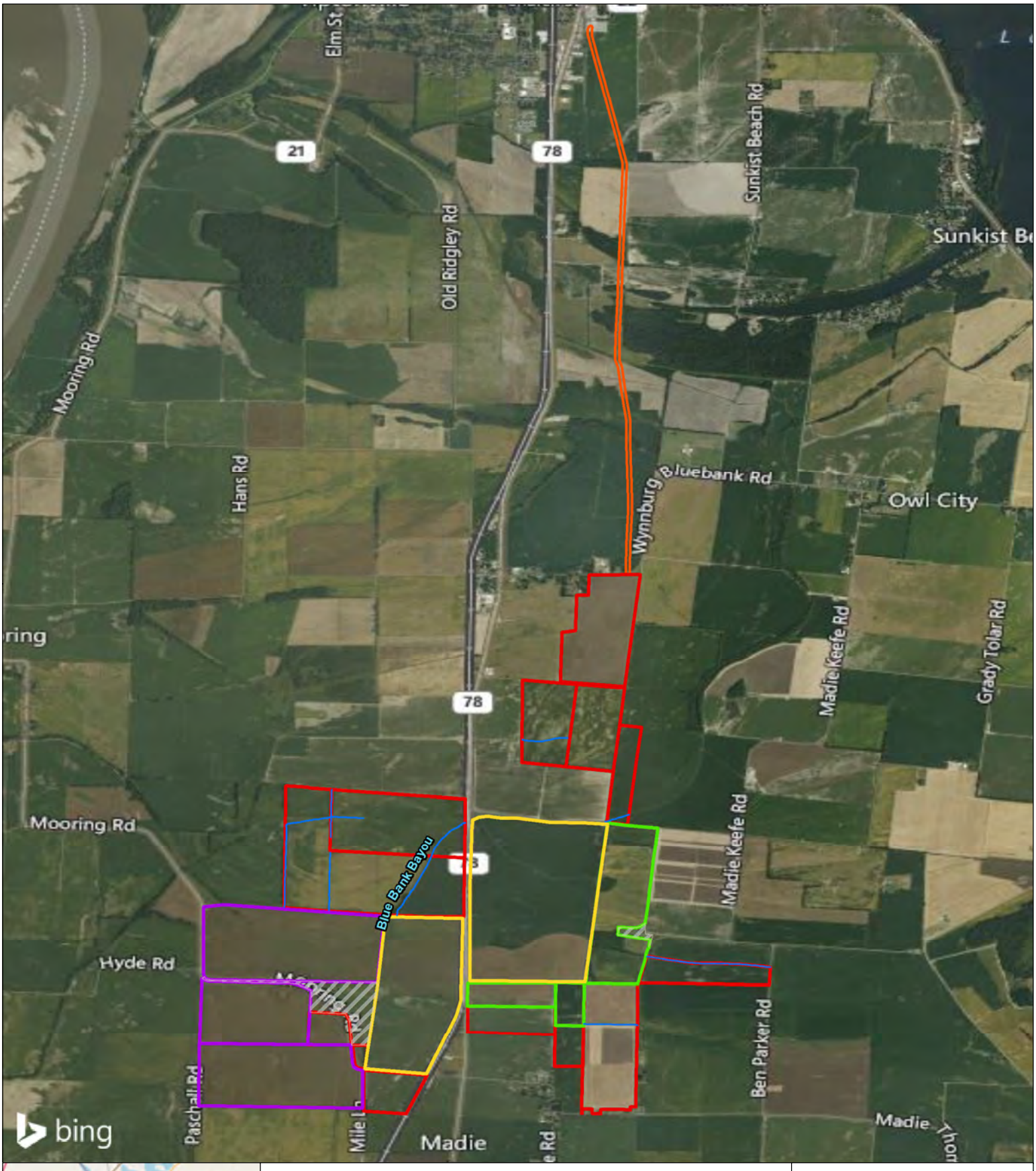
Cardno scientists conducted field delineations during five site visits within different portions of the Project from July 2016 to August 2020 to:

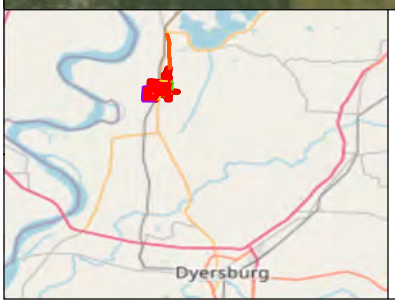
> Delineate the approximate boundaries of potential jurisdictional wetlands and waterbody ordinary high water marks (OHWM) within the Project; and

> Document general site conditions; and

> Evaluate the potential for federally listed species habitat.

The results of the desktop and onsite investigations are provided in this report.





- Study A
- Study B
- Study C
- Study D
- Study E
- Excluded Parcels
- Streams

0 750 1,500 3,000
Feet

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First Solar Ridgely

Project Area Overview
Figure 2-1

Date:	Project No:	Page No:
June 2020	E318201608	2-2

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_FIG.2-1 OVERVIEW.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

3 Site Location

The Project is located in a rural setting in the eastern portion of Lake County (**Figure 2-1**). According to the United States Environmental Protection Agency (USEPA) Level III and IV Ecoregions of Tennessee map accessed June 2020, the Project area falls within the Northern Mississippi Alluvial Plain (73a) ecoregion, and consists of a relatively flat region of Quaternary alluvial deposits of sand, silt, clay, and gravel. It is bounded distinctly on the east by the Bluff Hills (74a), and on the west by the Mississippi River. Most of the region is in cropland, with some areas of deciduous forest. The natural vegetation consists of Southern floodplain forest (oak, tupelo, bald cypress). Soils within the Northern Mississippi Alluvial Plains are underlain by Holocene alluvium. The two main distinctions in the Tennessee portion of the ecoregion are between areas of loamy, silty, and sandy soils with better drainage, and areas of more clayey soils of poor drainage that may contain wooded swampland and oxbow lakes (Griffith et al 1997).

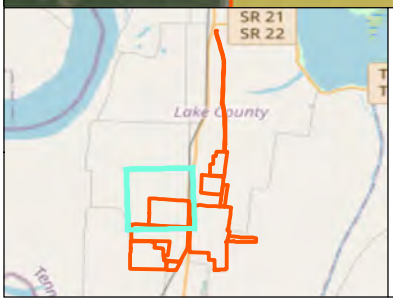
The Project and surrounding areas consists mainly of croplands containing soybeans, cotton, corn, sorghum, and vegetables. The Mississippi River is located to the west of the Project approximately 3.8 miles away from the Project area and Reelfoot Lake is located approximately 2.7 miles northeast of the Project. Additionally, Blue Bank Bayou is located adjacent and within the Project and serves as a tributary to the Mississippi River and Reelfoot Lake.

3.1 Vegetation Communities

Field surveys were conducted in June and August 2020 to document plant communities within the 2,411-acre Project area. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be classified as a combination of deciduous forest, evergreen forest, and herbaceous/agricultural vegetation. No forested areas in the proposed project area had structural characteristics indicative of old growth forest stands (Leverett 1996). The plant communities observed in the proposed Project area are common and well represented throughout the region.

The forests in the proposed Project area consist of mostly deciduous forest. Deciduous forest, where deciduous trees account for more than 75 percent of total canopy cover, occupies about 0.32 percent of the proposed Project area. Oak (*Quercus) species,* American sycamore (*Platanus occidentalis),* Sweet Gum *(Liquidambar styraciflua),* and Ash (*Fraxinus)* species. The invasive Chinese privet (*Ligustrum sinense)* are prevalent in the understory of forested areas across the Project. This species also seems to persist in areas that were recently cleared, readily invading abandoned lots and farmlands where it forms impenetrable thickets.

Grassland/herbaceous areas consist of 0.06 percent of the Project area and is characterized by greater than 75 percent cover of forbs and grasses such as curley dock (*Rumex crispus),* buckhorn (*Plantago lanceolate),* goldenrod (*Andropogon virginicus), and* winter ryegrass (*Lolium perenne)* and less than 25 percent cover of other types of vegetation. Agricultural land accounts for approximately 96.7 percent of the Project area and are dominated with planted wheat *(Triticum aestivum)*, soybeans *(Glycine max)*, cotton *(Gossypium hirsutum)*, or corn *(Zea mays)* (Appendix H). Areas of wetlands, consisting of approximately 2.0 percent, were present in the Project area. Woody wetlands vegetative communities consisted mainly of water oak (*Quercus nigra),* red maple *(Acer rubrum),* sweetgum *(Liquidambar styraciflua),* ash (*Fraxinus)* species, bald cypress (*Taxodium distichum)* and American elm (*Ulmus Americana).* Emergent Herbaceous wetlands vegetation communities were dominated by spikerush (*Eleocharis parvula).* See the wetland section 5.3 for more discussion of those areas. The remaining acreage consisted of roads, infrastructure and barren land.



- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

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First Solar Ridgely

Vegetation Assemblages within the Proejct Area

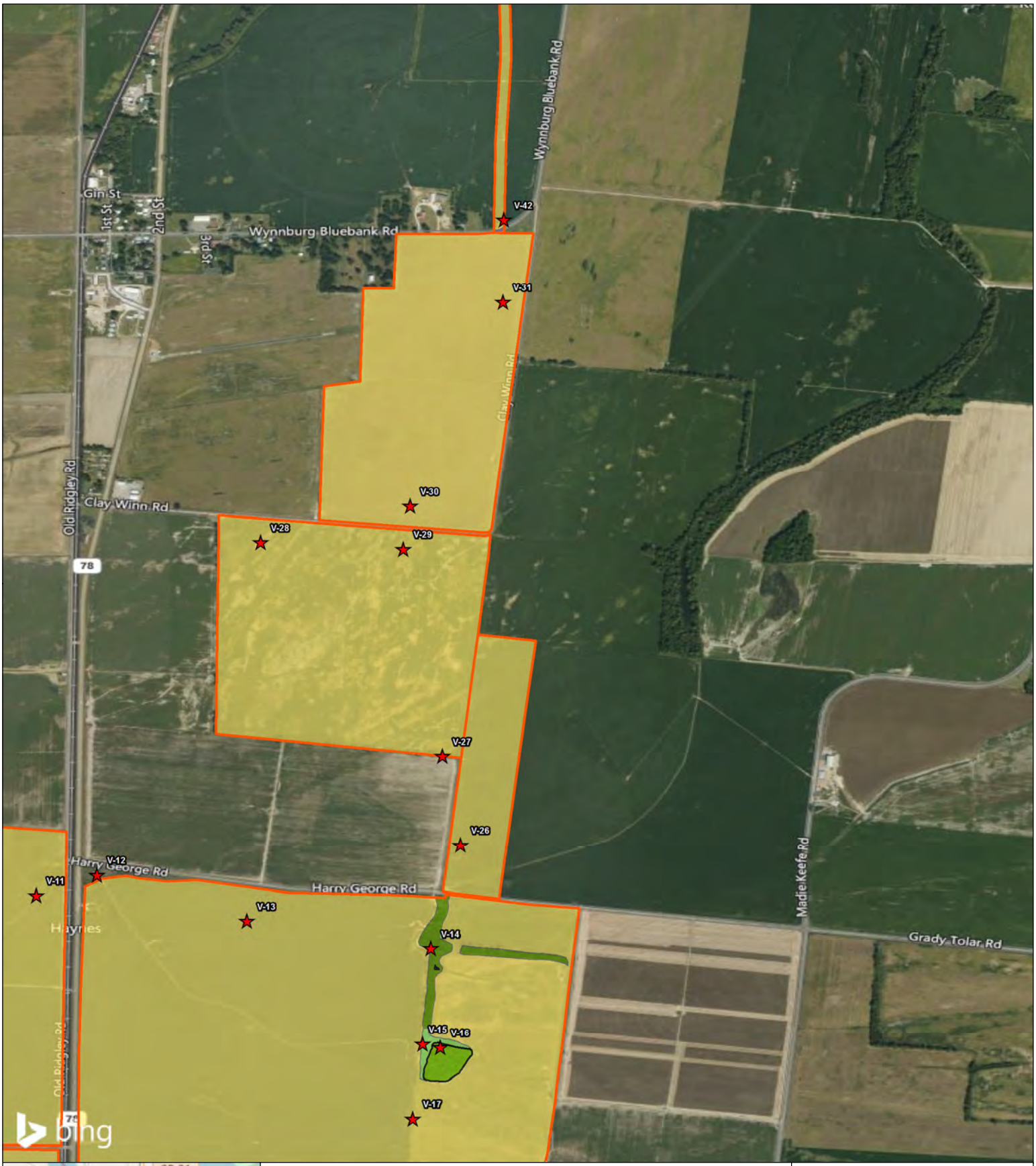
Figure 3-1 (1)

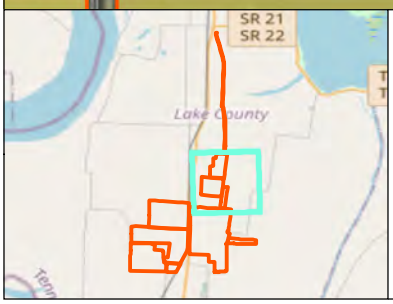
Date:	Project No:	Page No:
June 2020	E318201608	3-2

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

Cardno Shaping the Future

First Solar Ridgely

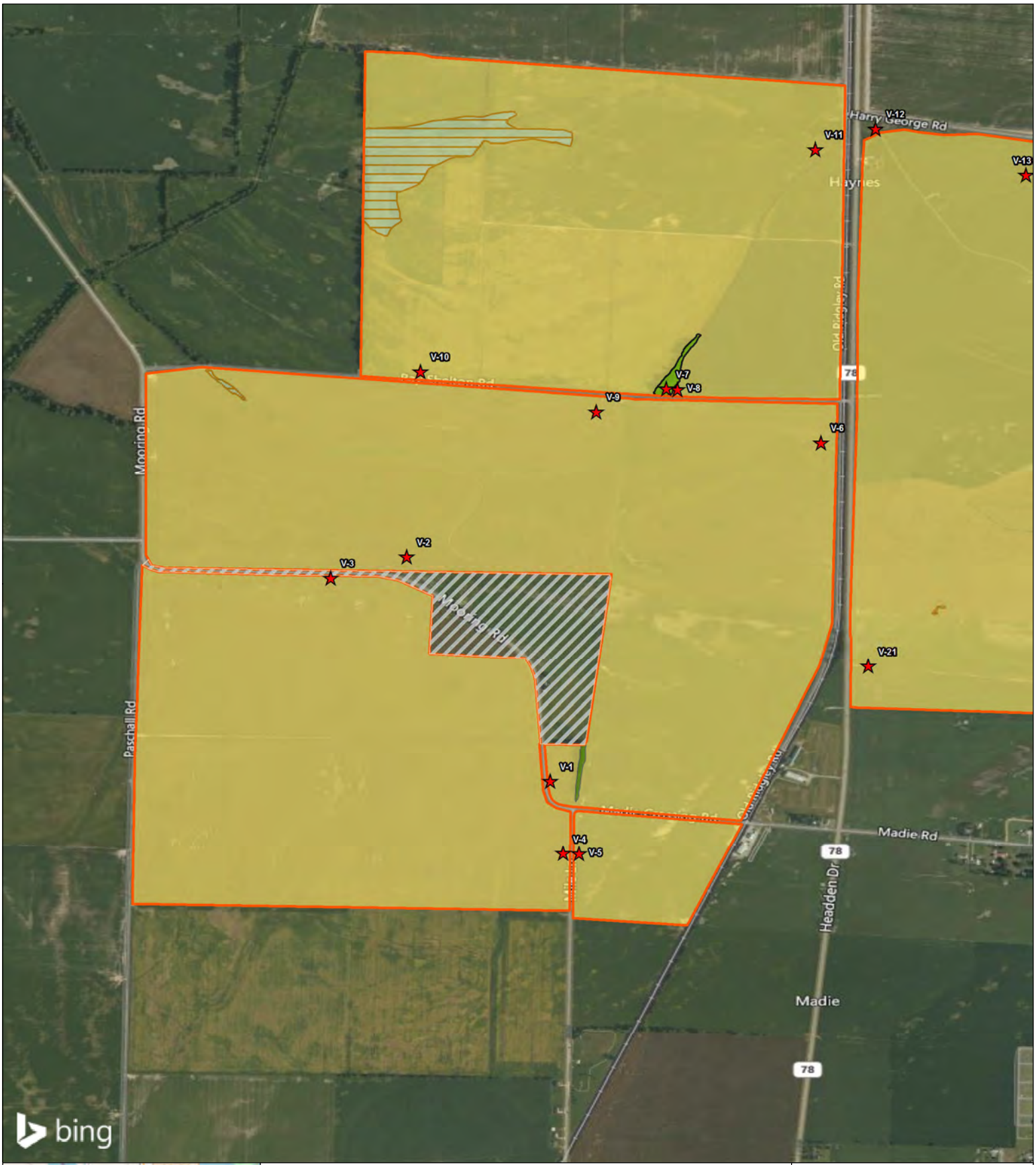
Vegetation Assemblages within the Proejct Area Figure 3-1 (2)

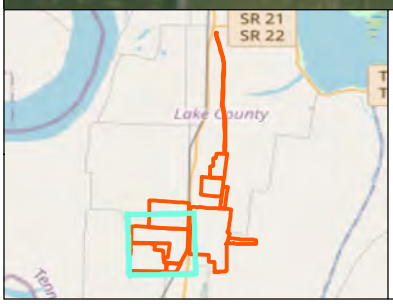
Date:	Project No:	Page No:
June 2020	E318201608	3-3

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

0 295 590 1,180
Feet

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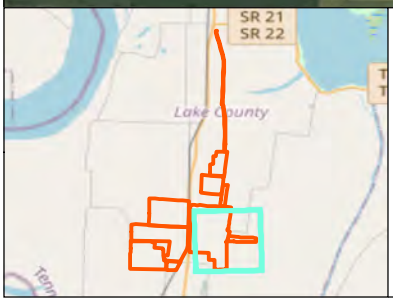
Vegetation Assemblages within the Proejct Area
Figure 3-1 (3)

Date:	Project No:	Page No:
June 2020	E318201608	3-4

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

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First Solar Ridgely

Vegetation Assemblages within the Proejct Area

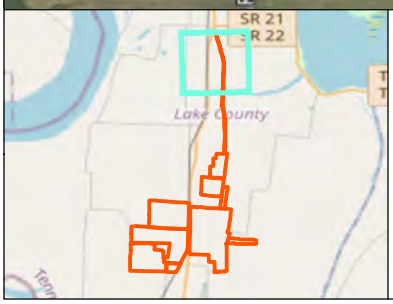
Figure 3-1 (4)

Date:	Project No:	Page No:
June 2020	E318201608	3-5

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 300 600 1,200

Feet

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First Solar Ridgely

Vegetation Assemblages within the Proejct Area

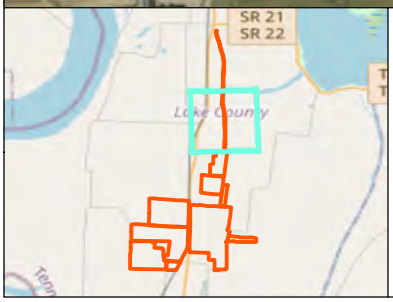
Figure 3-1 (5)

Date:	Project No:	Page No:
June 2020	E318201608	3-6

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 300 600 1,200

Feet

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First Solar Ridgely

Vegetation Assemblages within the Proejct Area

Figure 3-1 (6)

Date:	Project No:	Page No:
June 2020	E318201608	3-7

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

3.2 Wildlife Communities

Wildlife species likely to occur in the forest, field, and transitional ecotone habitats of the Project are those typically found in similar habitats across the state. Mammals likely to occur include the white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), white-footed mouse (*Peromyscus leucopus*), woodland vole (*Microtus pinetorum*), short-tailed shrew (*Blarina brevicauda*), and cotton mouse (*Peromyscus gossypinus*).

Birds likely to occur in the habitats of the Project include songbirds, birds of prey, game birds, and wading birds. Songbirds that commonly occur in these habitat types include the American crow (*Corvus brachyrhynchos*), northern cardinal (*Cardinalis cardinalis*), tufted titmouse (*Baeolophus bicolor*), brown thrasher (*Toxostoma rufum*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), chipping sparrow (*Spizella passerina*), and Carolina wren (*Thryothorus ludovicianus*). Birds of prey expected in these habitats include the red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and turkey vulture (*Cathartes aura*). Game birds likely to occur include the wild turkey (*Meleagris gallopavo*), bobwhite (*Colinus virginianus*), and mourning dove (*Zenaida macroura*). Wading birds likely to utilize riparian, pond, and wetland habitats of the Project include the green heron (*Butorides virescens*) and great blue heron (*Ardea herodias*).

Reptiles and amphibians likely to occur in the Project include the box turtle (*Terrapene carolina*), eastern garter snake (*Thamnophis sirtalis*), timber rattlesnake (*Croatus horridus*), black racer (*Coluber constrictor*), fence lizard (*Sceloporus undulatus*), upland chorus frog (*Pseudacris triseriata feriarum*), and American toad (*Bufo americanus*).

Many of these species are most likely to be found in relatively undisturbed areas of upland and riparian forest on the Project. However, the majority of the Project is actively farmed, so overall species diversity is expected to be relatively low, and most species present are widespread in their occurrence, adapted to open field and edge habitats, and relatively common in the region. During the winter, the agricultural fields are likely to be used by waterfowl and other birds feeding on crop residues. The ponds in the Project area also may be used by waterfowl in the winter, as well as reptiles and amphibians year-round.

3.3 Land Use

The land located within and in proximity to the Project is rural, consisting of mostly agricultural use and with some scattered residential development. The current land use at the Project site is agricultural and residential. There are seven natural areas within 10 miles of the project area. Lake Isom National Wildlife Refuge is .97 miles east of the easternmost portion of the project site. Reelfoot Lake State Park lies 2.68 miles northeast of the northeastern most portion of the project site. Girvin Conservation Area is 3.91 miles northwest of the project area. Reelfoot State Wildlife Management Area is 4.36 miles northeast of the project area. Reelfoot National Wildlife Refuge is 8.74 miles to northeast of the project site. Gayoso Bend Conservation Area lies 8.81 miles southwest of the project site and Black Island Conservation Area is 9.50 miles west of the project site.

3.4 Soil Series

Soils within the Project can be generally described as poorly drained to somewhat poorly drained soils that occur on floodplains, back swamps, natural levees and loess hills. According to the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) website (Soil Survey Staff, 2020), the Project is located within 12 soil map units, which are listed below (**Table 3-1 & Figure 3-2**). Six (6) of the map units within the Project area meet the criteria as described by the National Technical Committee for Hydric Soils (NTCHS).

It should also be noted that caution must be used when comparing the list of hydric components to soil survey maps. Many of the soils on the list have ranges in water table depths that allow the soil component to range from hydric to non-hydric depending on the location of the soil within the landscape as described in the map unit. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during onsite investigations.

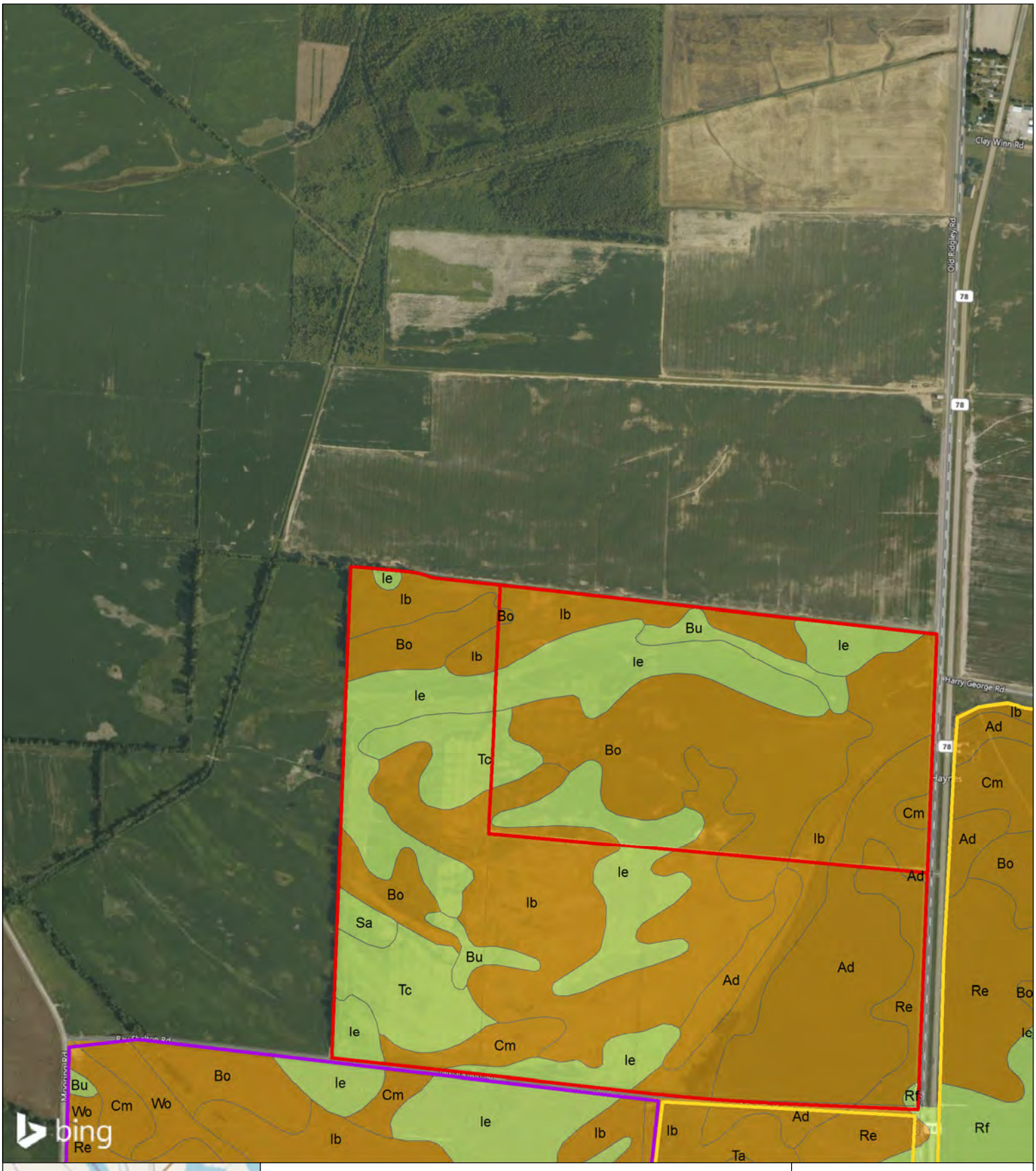
Table 3-1 Characteristics of Soil Mapping Units within the Project Area

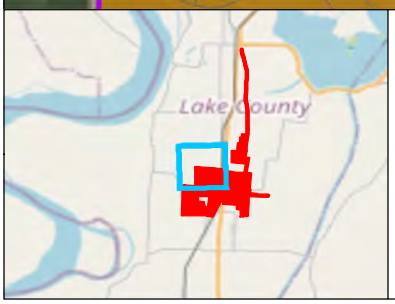
Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
Adler silt loam	Ad	Moderately well drained	Moderately High to High	N/A	No	7.69
Bowdre silty clay	Bo	Somewhat poorly drained	Moderately low to moderately high	N/A	No	6.15
Bruno soils and alluvial land	Bu	Excessively drained	High to very high	N/A	Yes	7.69
Commerce silt loam	Cm	Somewhat poorly drained	Moderately high	N/A	No	11.54
Iberia silt loam, 0 to 2 percent slopes	Ib	Poorly drained	Very low to moderately low	N/A	Yes	10.77
Iberia silty clay loam	Ie	Poorly drained	Very low to moderately low	N/A	Yes	15.38

Table 3-1 Characteristics of Soil Mapping Units within the Project Area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
Reelfoot silt loam	Re	Somewhat poorly drained	Moderately high to high	N/A	No	12.31
Reelfoot silty clay loam	Rf	Somewhat poorly drained	Moderately high to high	N/A	Yes	5.38
Sharkey clay, 0 to 1 percent slopes, occasionally flooded	Sa	Poorly drained	Very low to moderately low	High	Yes	8.46
Tiptonville silt loam	Ta	Moderately well drained	Moderately high to high	N/A	No	5.38
Tunica clay (flooded)	Tc	Poorly drained	Very low to moderately low	N/A	Yes	1.54
Worthen silt loam	Wo	Well drained	Moderately high to high	N/A	No	7.69

Source: Soil Survey Staff, 2020





Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

0 205 410 820

Feet

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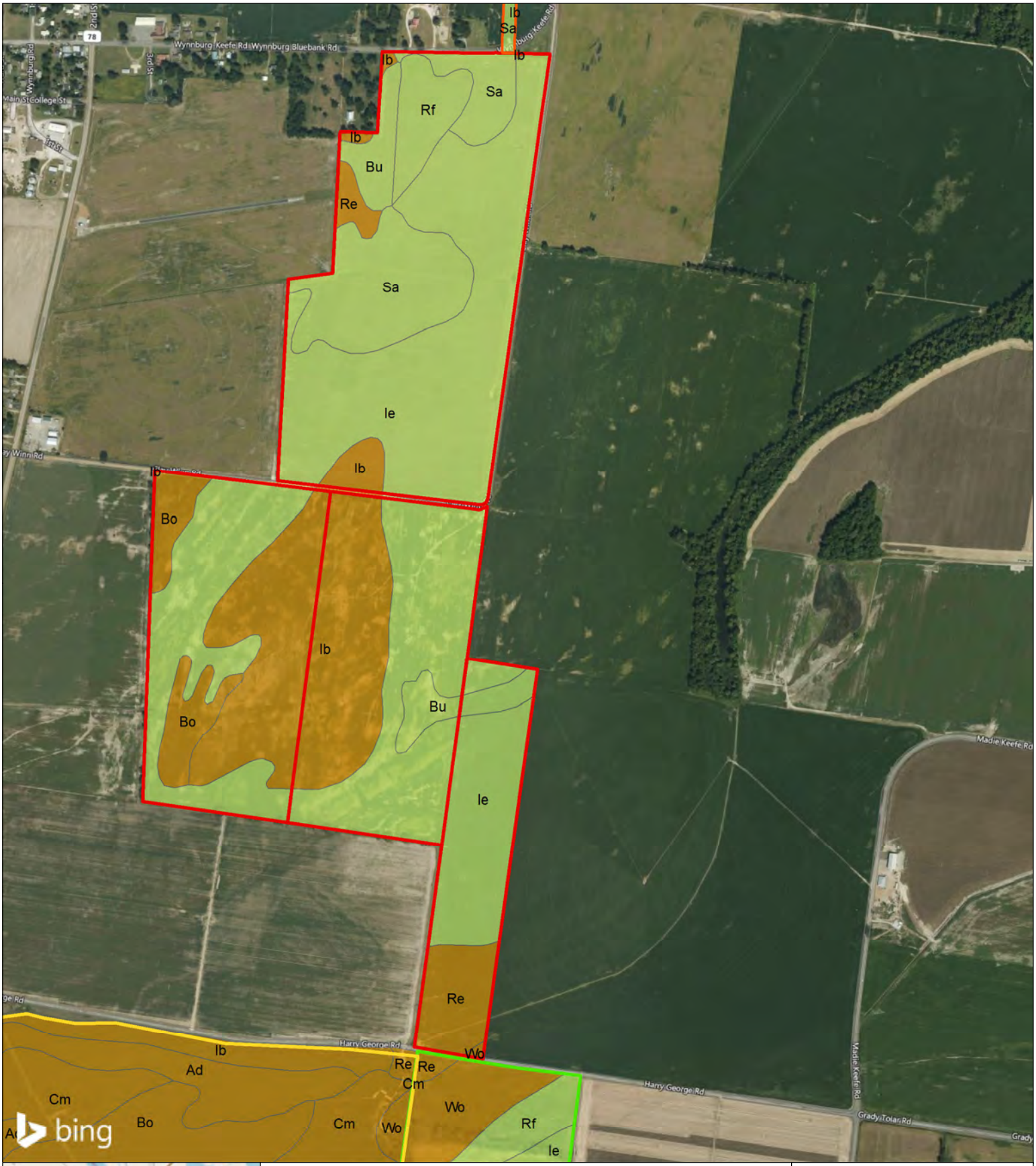
Soils Within the Project Area

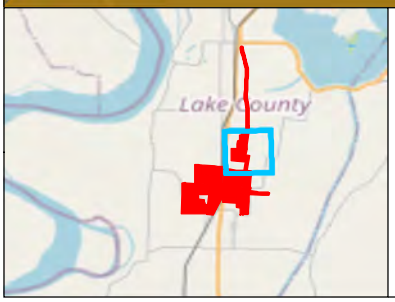
Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (1)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

0 205 410 820
Feet

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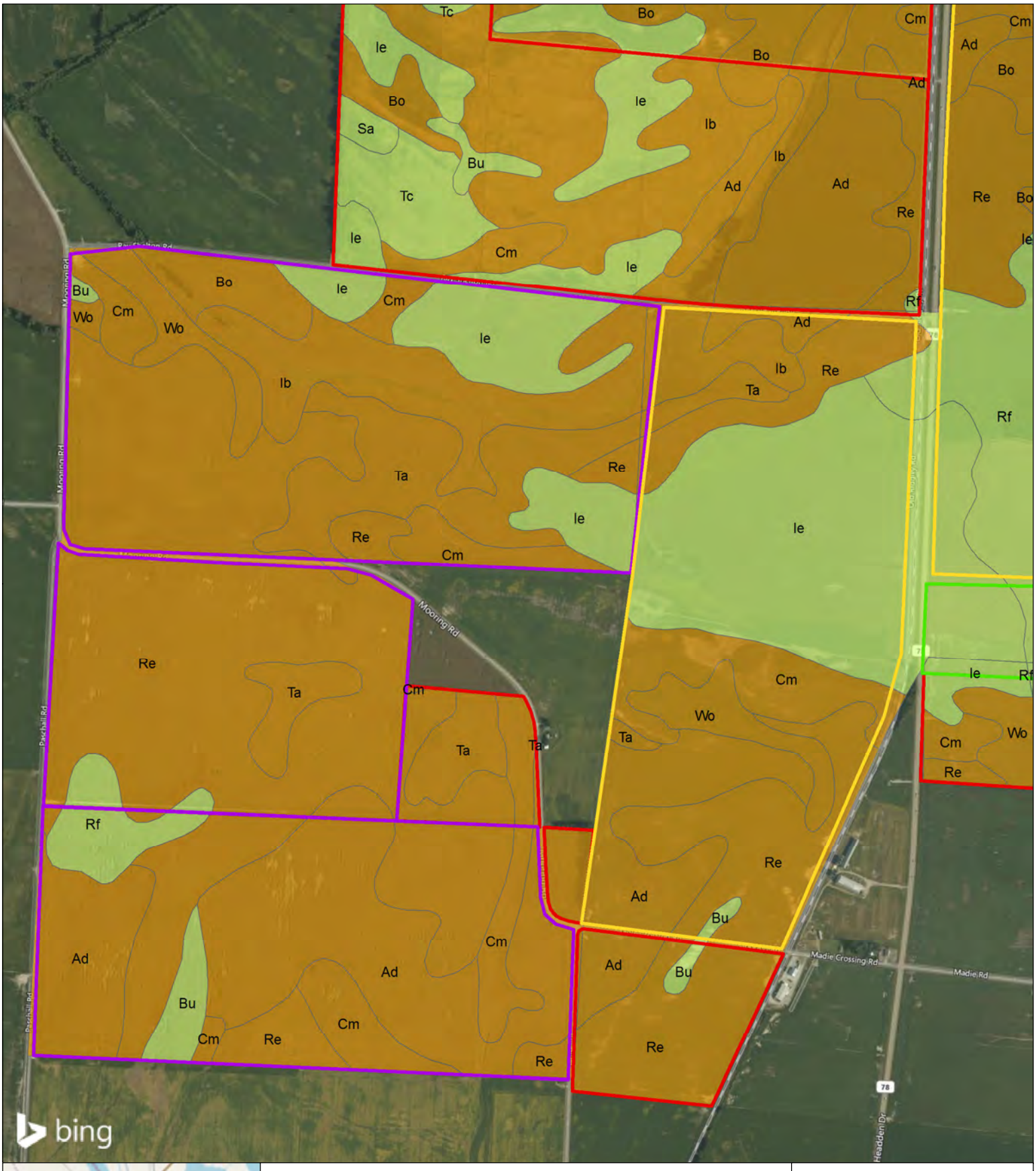
Soils Within the Project Area

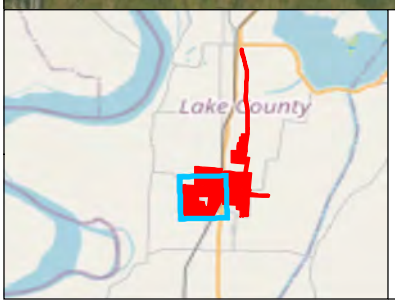
Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (2)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

0 205 410 820

Feet

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First Solar Ridgely

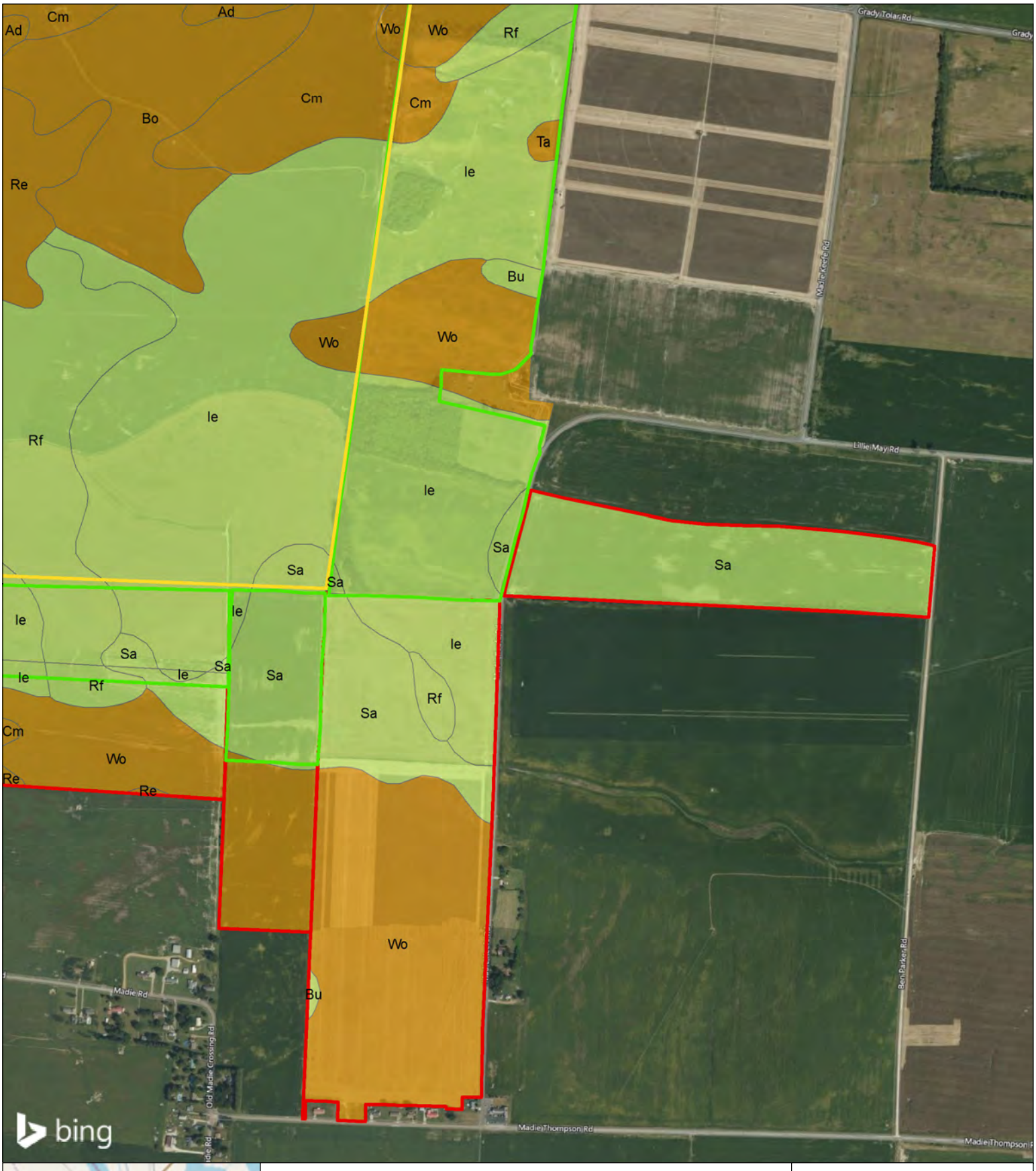
Soils Within the Project Area

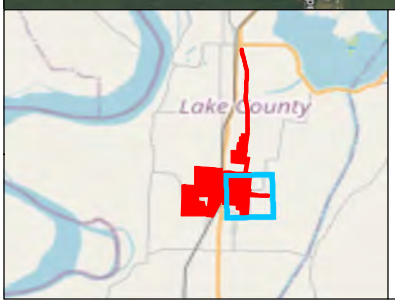
Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (3)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

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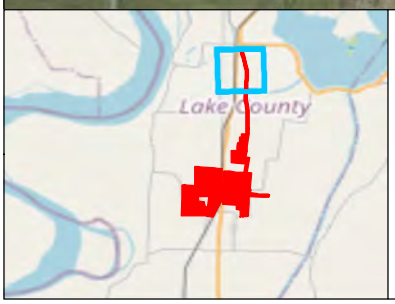
Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (4)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

Cardno
Shaping the Future

First Solar Ridgely

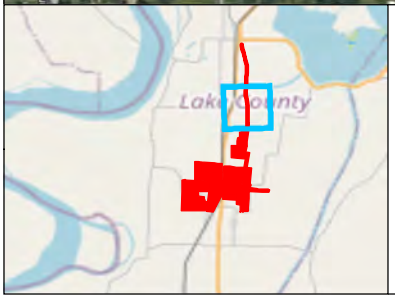
Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (5)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

0 205 410 820

Feet

Cardno
Shaping the Future

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (6)**

Date Created: 9/8/2020 Date Revised: 9/8/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: samuel.waltman

Data Source: Basemap: Bing Maps Aerial (2020)

4 Assessment Methodology

Cardno conducted desktop reviews of the Project area utilizing local and federal GIS data to identify potential habitat for listed species, wetlands, hydric soils, floodplains, and cultural resources that could affect the Project development process.

Federal and state resources were reviewed as a precursor to field site assessments, to identify potential habitat that may be found for listed species in the Project area. Results of the threatened and endangered species review are provided in **Section 5.1.**

4.1 WOUS Delineation

The delineation of WOUS, including wetlands was conducted during five site visits to different portions of the Project from July 2016 to August 2020. Cardno scientists performed all wetland delineation surveys in accordance with the USACE Wetland Delineation Manual (USACE Manual; Environmental Laboratory 1987) in conjunction with the Atlantic and Gulf Coastal Plain Regional Supplement to the USACE Delineation Manual (USACE 2010). Cardno also completed TVA rapid assessment datasheets (**Appendix E**) on all wetlands and classified them based on function and value in compliance with Executive Order 11990 – Protection of Wetlands. Streams were also classified and Cardno scientists completed TVA hydrologic determination field data sheets (**Appendix G**). The results of the delineation are provided in **Sections 5.2 and 5.3**.

Wetlands are collectively defined by the USACE (Environmental Laboratory 1987) and the U.S. Environmental Protection Agency (EPA; Federal Register 1980) as those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. An area is a wetland if it meets the wetland hydrology, hydrophytic vegetation, and hydric soil criteria established in the USACE Manual.

Cardno scientists collected all pertinent field data information on USACE Atlantic and Gulf Coastal Plain wetland forms (**Appendix A**).

Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Dominant vegetation was identified and categorized in accordance with the regional indicator status in the national list of plant species that occur in wetlands (Lichvar et. al. 2016). The indicator status of a plant species is expressed in terms of the estimated probability of that species to occur in wetland conditions within a given region. **Table 4-1** lists the plant indicator status categories. A vegetative community would be determined to be hydrophytic if more than 50 percent of the dominant species present were FAC, FACW, or OBL.

Wetland Hydrology

Wetland hydrology includes all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987).

Table 4-1 Plant Indicator Status Categories

Category	Indicator	Frequency of Occurrence in Wetlands (percent)
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands. Examples: *Carya aquatica, Persicarian punctata*.
Facultative Wetland Plants	FACW	Plants that occur usually (estimated probability 67-99%) in wetlands, but also occurring in both wetlands and non-wetlands. Examples: *Spartina patens; Panicum dichotomiflrum*.
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability of 33-67%) of occurring in both wetlands and non-wetlands. Examples: *Stenotaphrum secundatum; Rumex cripsus*.
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1-33%) in wetlands, but occur more often (estimated probability 67-99%) in non-wetlands. Examples: *Cirsium vulgare; Rubus trivialis.*
Obligate Upland Plants	UPL	Plants that occur rarely (estimated probability <1%) in wetlands, but almost always (>99% estimated probability) in non-wetlands. Examples: *Geranium carolinianum.*

Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper stratum. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, and are used to differentiate hydric from non-hydric soils (Environmental Laboratory 1987).

At each recorded data point, a pit up to 20-inches deep was excavated for evaluation. Soils were surveyed for horizon profile, matrix, value, chroma, texture, and concretions.

Hydric soils were determined to be present if one primary hydric soil indicator was present. Background soils information of the Project area was obtained from the USDA NRCS Web Soil Survey.

4.2 Mapping

All wetlands and other water features were recorded using a sub-meter Global Positioning System (GPS) device. The GPS was programmed to record points with a minimum of four satellites and a Position Dilution of Precision (PDOP) value no greater than 6.0. Water features were delineated by collecting GPS points along the perimeter of the wetland or ordinary high water mark with suitable frequency to represent the feature within the Project area.

4.3 Photographs

Photographs are the visual documentation of site conditions as they existed during the field survey. Representative photos were taken at wetland and upland areas. For all other features, a minimum of one photo was taken, unless the area was large and required additional representation. The photographic log is provided in **Appendix B.**

5 Results of Findings

5.1 Threatened and Endangered Species Review

Cardno conducted desktop environmental assessments for listed species within the Project area. **Table 5-1** and **Appendix F** lists the species that were identified by the USFWS IPaC database, TVA Natural Heritage Database, and the TDEC as having the potential to occur within or be affected by the Project. Species included in **Table 5-1,** acquired from the TVA Database, were included using a buffer from the Project boundary that included ten-miles for aquatic species, five-miles for plant species, and terrestrial species within three miles of the Project.

Table 5-1 IPaC Federally Listed Species, TDEC, and TVA Natural Heritage Database T&E Listed Species Potentially Affected by Project

Group	Common Name	Scientific Name	Habitat	Likelihood of Occurrence	Federal Status	State Status
Mammals	Indiana bat [2]	*Myotis sodalis*	Caves and mines during winter; large trees with exfoliating bark near riparian areas in summer.	Low	E	E
	Northern long-eared bat [2]	*Myotis septentrionalis*	Caves and mines during winter; large trees with exfoliating bark near riparian areas in summer.	Low	T	T
	Eastern Woodrat [4]	*Neotoma floridana*	Occurs in forested areas, but also uses caves and rocky outcrops.	Low	-	D
Birds	Bald Eagle [1, 3, 4]	*Haliaeetus leucocephalus*	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.	None	-	D
	Bewick's Wren [3]	*Thryomanes bewickii*	Brushy areas, thickets and scrub in open country, open and riparian woodland.	Moderate	-	D
	Least Bittern [3]	*Ixobrychus exilis*	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.		-	D
	Interior Least Tern [1 ,2, 3, 4]	*Sternula antillarum athalass*	Mississippi River sand bars & islands, dikes.	None	E	E
	Swainson's Warbler [3]	*Limnotlypis swainsonii*	Mature, rich, damp, deciduous floodplain and swamp forests.	None	-	D
Fish	Alligator Gar [1, 3]	*Atractosteus spatula*	Sluggish pools of large rivers, oxbows, swamps, and backwaters; west Tennessee.	None	-	D
	Pallid Sturgeon [1 ,2 ,3, 4]	*Scaphirhynchus albus*	Large, turbid, free-flowing riverine habitat, in strong current over firm gravel or sandy substrates; Mississippi River main channel.	None	E	E
	Sicklefin Chub [3]	*Macrhybopsis meeki*	Main channel of the Mississippi River in swift currents over sand and gravel substrates.	None	-	D
	Golden Topminnow [1, 3]	*Fundulus chrysotus*	Swamps, backwaters, and pools of ditches and slow-moving creeks; Reelfoot Lake & imm. vicinity.	Low	-	D
	Blue Sucker [4]	*Cycleptus elongates*	Inhibits main stems of major rivers and lower sections of main tributaries throughout their range. They are well adapted to strong currents and are found within riffles and rapidly flowing chutes. Blue suckers require gravel or rock	None	-	T

Table 5-1 IPaC Federally Listed Species, TDEC, and TVA Natural Heritage Database T&E Listed Species Potentially Affected by Project

Group	Common Name	Scientific Name	Habitat	Likelihood of Occurrence	Federal Status	State Status
			bottoms with constantly flowing water that is relatively silt-free.			
Flowering Plants	Nuttall's Waterweed [3]	*Elodea muttalii*	Aquatic; Streams And Ponds	Moderate	-	S
	Blue Mud-plantain [1, 3]	*Heteranthera limosa*	Mud Flats	Moderate	-	T
	Bristly Sedge [3]	*Carex comosa*	Swamps	Moderate	-	T
	Yellow Water-crowfoot [3]	*Ranunculus flabellaris*	Ponds and marshes	Moderate	-	T
	Ovate-leaved Arrowhead [1, 3, 4]	*Sagittaria platyphylla*	Swamps, Emergent	Moderate	-	S
	Featherfoil [1, 3 ,4]	*Hottonia inflate*	Wet Sloughs And Ditches	Moderate	-	S
	Copper Iris [3]	*Iris fulva*	Bottomlands	Moderate	-	T
	Lake Cress [1, 3, 4]	*Neobeckia aquatic*	Gum Or Cypress Swamps	Moderate	-	S
	American Ginseng [4]	*Panax quinquefolius*	Often found on north or east facing hills, this plant requires deep, rich, well-drained soil with plenty of calcium and organic matter.	Low	-	S, CE
Mollusks	Striped Whitelip [3]	*Webbhelix multilineata*	Low wet habitats, marshes, floodplains, meadows; lake margins; under leaf litter or drift; Mississippi River floodplain.	Moderate	-	R
	Fatmucket [3]	*Lampsilis siliquoidea*	Slackwater with mud subst; Wolf R (Miss R trib); west TN; may occur at Reelfoot Lk; also rept Drakes Ck (Cumb R), Sumner Co.	Low	-	R
Reptiles	Mississippi Green Watersnake [1, 3, 4]	*Nerodia cyclopean*	Marshes, swamps, bayous, shallow lakes and ponds, wet prairies, oxbows and floodplain sloughs; far west Tennessee.	Moderate	-	D

[1] Indicates species which were identified from information provided by the TVA Regional Natural Heritage Database.
[2] Indicates species which were identified from information provided by the USFWS IPaC Database.
[3] Indicates species which were identified from information provided by the Tennessee Department of Environment and Conservation
[4] Indicates species which were identified from information provided by the TVA Regional Heritage County List

S – Special Concern, D – Deemed in Need of Management, R-Rare, Not State Listed, E-Endangered, T-Threatened, CE-Commercially Exploited

Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's wren, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the TDEC species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American ginseng, and Lake Cress. The Bewick's wren occupies brush thickets and scrub that are found in open country and riparian woodlands. The Striped whitelip, Mississippi Green Snake, and listed plant species are known to occur in streams, ponds, marshes, swamps, and bottomlands, thus limiting their potential suitable habitat to wetlands and waterbodies within the Project area. The eastern woodrat would be limited to the small and fragmented forested areas within the Project area. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long-eared Bat) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the small patches of forested riparian areas and the distance to current summer and winter grounds, it is highly unlikely that the NLEB would be impacted by this Project. Though Cardno scientists did not conduct 'in water' surveys, no mussel relics were identified along their stream banks. Although the portions of Blue Bank Bayou that flow through the Project area may contain

suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project.

5.2 Wetlands

Vegetation Community Types

Cardno scientists identified two types of wetland vegetative communities within the Project area: herbaceous wetland and forested wetland. Community identification was based on soils, hydrology, and an emphasis on dominant vegetation. **Appendix A** provides datasheets which include survey point-specific vegetative community species data.

Hydrology

The entire Project area is relatively well drained by overland flow, drainages, and culverts which lead to deeply cut roadside ditches or Blue Bank Bayou. Many ag-field drainages were identified by a review of aerial imagery. Cardno scientists inspected these drainages at the time of the onsite investigation, and determined them to be ephemeral in nature.

Soils

Soils were delineated with the X-Rite Munsell M50215B Soil Book of Color, and exhibited a hue, lightness, and chroma ranging from 10 YR (3/1) to 10YR (5/3) throughout the Project area. The datasheets presented in **Appendix A** provide soils color data for each soil pit.

5.2.1 Parcels

Cardno scientists investigated the entire Project for wetlands that exhibited the three USACE criteria (hydrophytic vegetation, wetland hydrology, and hydric soils). Cardno's onsite investigations identified **15** wetlands (**Table 5-2**) totaling **53.44** acres. Unconsolidated bottom, herbaceous, and forested wetlands were observed within the Project.

Table 5-2 Delineated Wetlands Ridgely Properties

Wetland ID	Type	Acreage	Potentially Jurisdictional	TVA Ram Category
WET-B-1	PEM	0.68	No	1
WET-C-1	PFO	0.03	No	1
WET-C-2	PFO	5.17	No	2
WET-C-3	PEM	0.20	No	2
WET-C-4	PFO	18.28	No	2
WET-C-5	PUB	0.32	No	-
WET-C-6	PEM	0.30	No	1
WET-C-7	PFO	2.30	No	2
WET-C-8	PFO	0.89	No	2
WET-C-9	PEM	0.15	No	1
WET-C-10	PEM	0.06	No	1
WET-C-11	PEM	0.11	No	1
WET-C-12	PEM	0.05	No	1

Table 5-2 Delineated Wetlands Ridgely Properties

Wetland ID	Type	Acreage	Potentially Jurisdictional	TVA Ram Category
WET-D-1	PFO	1.52	Yes	3
WET-D-2	PEM	23.38	No	1
Total		**53.44**		
Total Non-jurisdictional		**51.92**		
Total Jurisdictional		**1.52**		

5.2.2 TVA TLine

Cardno scientists investigated the TVA TLine in August 2020 for wetlands that exhibited the three USACE criteria (hydrophytic vegetation, wetland hydrology and hydric soils). Cardno's onsite investigations identified **six** wetlands (**Table 5-3**) totaling **1.07** acres. Only herbaceous and ponded PUB(x) wetlands were identified within the TVA TLine ROW.

Table 5-3 Delineated Wetlands TVA Transmission Line

Wetland ID	Type	Acreage	Jurisdictional	TVA Ram Category
WET-E-1	PEM	.30	No	1
WET-E-2	PEM	.25	No	1
WET-E-3	PEM	.18	Yes	1
WET-E-4	PEM	.05	Yes	1
WET-E-5	PEM	.28	No	1
WET-E-6	PUB(x)	.01	No	-
Total		**1.07**		
Total Non-jurisdictional		**0.84**		
Total Jurisdictional		**0.23**		

5.3 Waterbodies

5.3.1 Parcels

Twenty-four ephemeral drainages, **one** perennial stream, and **one** ponded area (recorded as PUB(x) wetlands above) were identified to be located within the Project boundaries (Table 5-4) (**Appendix C**).

Table 5-4 Delineated Streams (Parcels)

Stream ID	Flow Type	Stream Length (feet)	Water Depth (Inches)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)
S-A-1	Ephemeral	2204.4	0	1.5	Organic	No
S-A-2	Ephemeral	1219.01	0	2	Organic	No
S-A-3	Ephemeral	4248.51	0	1.5	Organic	No

Table 5-4 Delineated Streams (Parcels)

Stream ID	Flow Type	Stream Length (feet)	Water Depth (Inches)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)
S-A-4	Ephemeral	3107.44	0	1.5	Organic	No
S-A-5	Ephemeral	1386.79	0	1.5	Organic	No
S-B-1	Ephemeral	3903.13	0	3	Organic	No
S-B-2	Ephemeral	2520.69	0	2.5	Organic	No
S-B-3	Ephemeral	845.84	0	2	Organic	No
S-C-1	Ephemeral	1300.37	0	5	Organic	No
S-C-2	Ephemeral	498.33	0	3	Organic	No
S-C-3	Ephemeral	1026.2	0	0.5	Organic	No
S-C-4	Ephemeral	761.39	5	3	Organic	No
S-C-5	Ephemeral	1106.07	0	0.5	Organic	No
S-C-6	Ephemeral	670.28	0	0.5	Organic	No
S-C-7	Ephemeral	701.54	0	0.5	Organic	No
S-C-8	Ephemeral	1216.49	0	0.5	Organic	No
S-C-9	Ephemeral	116.01	0	0.5	Organic	No
S-D-1	Ephemeral	649.23	2	5	Organic	No
S-D-2 (Blue Bank Bayou)	Perennial	3505.05	10	6	Organic	Yes
S-D-3	Ephemeral	4621.98	2	3	Organic	No
S-D-4	Ephemeral	1483.61	3	3	Organic	No
S-D-5	Ephemeral	3185.35	0	3	Organic	No
S-D-6	Ephemeral	1183.66	0	3	Organic	No
S-D-7	Ephemeral	1810.63	0	3	Organic	No
S-D-8	Ephemeral	1378.02	0	3	Organic	No
Total		**43,090.15**				
Total Non-jurisdictional		**39,585.10**				
Total Jurisdictional		**3505.05**				

5.3.2 TVA TLine

One ephemeral drainage, **two** perennial streams, and **one** ponded area (recorded as PUB(x) wetlands above) were identified to be located within the TVA TLINE ROW (Table 5-5) (**Appendix C**).

Table 5-5 Delineated Streams (TVA TLine)

Stream ID	Flow Type	Length within ROW (feet)	Water Depth (Inches)	Top of Bank at Bankfull (ft)	Substrate	Jurisdictional
S-E-1	Perennial	110.96	12	10	Unconsolidated	Yes
S-E-2	Ephemeral	126.19	3	4	Unconsolidated	No
S-E-3	Perennial	109.19	12	9	Unconsolidated	Yes
Total		**346.34**				
Total Non-jurisdictional		**126.19**				
Total Jurisdictional		**220.15**				

5.4 Jurisdictional Summary

Cardno scientists identified **25** ephemeral drainages, **three** perennial streams, and **21** wetlands, including twos excavated ponded areas within the Project area. From the field investigation, it was determined that **three** of the identified streams, as well as **three** of the identified wetlands (Wet-D-1, Wet-E-3, and Wet-E-4) may possess a hydrological connection to Blue Bank Bayou or the Mississippi River. Blue Bank Bayou (S-D-2) and streams S-E-1 and S-E-3 flow to the Mississippi River, a TNW. Therefore, it is Cardno's opinion that these delineated streams and associated wetlands may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did not exhibit flow during field investigations, and 18 of the identified wetlands, including the excavated ponds appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance. Cardno completed this wetland and stream assessment under the rules and guidelines defined in the Navigable Waters Protection Rule published on April 21, 2020 and in effect on June 22, 2020. Our classification of streams and adjacent wetlands are classified accordingly, to the best of our understanding of normal hydraulic conditions at the property under review.

6 Conclusion and Recommendations

Cardno reviewed current and historic mapping, as well as local, state, and federal GIS data layers as part of a desktop investigation during its environmental assessment. No significant concerns were identified onsite that would affect construction of the proposed Project.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, five bird species, five fish species, nine flowering plant species, one snail species, one freshwater mussel species, and one reptile species listed by the USFWSb IPaC, the TDEC, and/or the TVA Natural Heritage Database as having the potential to occur within or be affected by the Project. No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's wren, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the TDEC) species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American Ginseng, and Lake Cress. The Bewick's wren occupies brush thickets and scrub that are found in open country and riparian woodlands. The Striped whitelip, Mississippi Green Snake, and listed plant species are known to occur in streams, ponds, marshes, swamps, and bottomlands, thus limiting their potential suitable habitat to wetlands and waterbodies within the Project area. T The eastern woodrat would be limited to the small and fragmented forested areas within the Project area. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to NLEB) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the small patches of forested riparian areas and the distance to current summer and winter grounds, it is highly unlikely that the NLEB would be impacted by this Project. Though Cardno scientists did not conduct 'in water' surveys, no mussel relics were identified along their stream banks. Although the portions of Blue Bank Bayou that flow through the Project area may contain suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project. Migratory bird nesting surveys are recommended if construction will occur during the nesting season and if scrub/shrub and trees will be cleared as part of the Project.

Impacts to streams or wetlands within the Project area may require an Aquatic Resource Alteration Permit (ARAP) or a Section 401 Water Quality Certification from the Tennessee Division of Water Resources. In compliance with Section 404 of the CWA, this report contains a delineation of potential WOUS that may fall under the jurisdiction of the USACE. Field delineations were conducted during five site visits to different portions of the Project area from July 2016 to August 2020, in which all potentially jurisdictional waters within the Project area were mapped and characterized.

Cardno scientists identified **25** ephemeral drainages, **three** perennial streams, and **21** wetlands, including two excavated ponded areas within the Project area. From the field investigation, it was determined that **three** of the identified streams, as well as **three** of the identified wetlands (Wet-D-1, Wet-E-3, and Wet-E-4) may possess a hydrological connection to Blue Bank Bayou or the Mississippi River. Blue Bank Bayou (S-D-2) and streams S-E-1 and S-E-3 flow to the Mississippi River, a TNW. Therefore, it is Cardno's opinion that these delineated streams and associated wetlands may likely be classified as jurisdictional under USACE guidance. Therefore, it is Cardno's opinion that the delineated stream and wetland may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did not exhibit flow during field investigations, and 14 of the identified wetlands, including the excavated ponded area appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance.

Because only the USACE may issue determinations on the jurisdictional status of the streams and wetlands identified within the Project, Cardno recommends avoiding these resources to the greatest extent practicable during initial design phases, until a jurisdictional determination has been issued by the USACE Memphis District. If any of the identified streams or wetlands are deemed jurisdictional by the USACE, the Project may proceed under a NWP 51. Nationwide 51 requires a pre-construction notification to the USACE and allows for construction, expansion or modification of land-based renewable energy production facilities, including attendant features. Utility lines transferring energy to a distribution system, regional grid, or other facility are generally considered to be separate single and complete linear projects. If the only activity requiring USACE authorization is the construction of a utility line (water or electric), then a NWP 12 may be used. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS, including the loss of no more than 300 linear feet of stream bed. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

7 References

Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Federal Register. 1980. 40 CFR Part 230: Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, Vol. 45, No. 249, pp. 85352-85353, U.S. Government Printing Office.

Griffith, G.E., Omernik, J.M., Comstock, J.A., Lawrence, S., Martin, G., Goddard, A., Hulcher, V.J., and Foster, T., 2001, Ecoregions of Tennessee and Georgia, (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,700,000).

F Grossman, D. H., D. Faber-Langendoen, A. S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume I. The National Vegetation Classification System: development, status, and applications. The Nature Conservancy, Arlington, Virginia, USA

Leverett, R.T. 1996. Definitions and history. Pp. 3-17, In M.B. Davis (Ed.). Easter Old Growth Forests: Prospects for Rediscovery and Recovery. Island Press, Washington, DC.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

Soil Survey Staff, 2020. Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 2020.

TDEC (Tennessee Department of Environment and Conservation). 2020. Natural Heritage Program. Rare Species by County: Lake County, TN. Accessed May 2020.

TVA (Tennessee Valley Authority). 2020. Regional Natural Heritage Database.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J. F. Berkowitz, J.S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Fish & Wildlife Service (USFWS) IPaC Trust Resources Report (generated May 2020)

First Solar – Ridgely
Natural Resources Report

APPENDIX A

WETLAND DETERMINATION DATASHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 7/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-1

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.307603 Long: -89.47227 Datum: WGS 1984

Soil Map Unit Name: Iberia silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Mowed area on side of road

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1.			
2. Paspalum notatum	90		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 4/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 7/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-2

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.30755 Long: -89.472236 Datum: WGS 1984

Soil Map Unit Name: Iberia silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

This water body is Blue Bank Bayou. It supports a buffer of hydric vegetation, with ag field to the south, and mowed road ROW to the north.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 1

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Equisetum hyemale	50		FACW
2. Setaria pumila	10		FAC
3. Persicaria maculosa	15		FACW
4. Althaea officinalis	15		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☑ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-A-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/1	100	10 YR 4/4	10	C		Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 6/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-3

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 0

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.297532 Long: -89.465216 Datum: WGS 1984

Soil Map Unit Name: Iberia silty clay loam NWI classification: PFO-3

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

NWI dataset shows PFO, currently ag field. Historical aerial imagery does not reveal any forested area in the last decade.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis occidentalis	40	Yes	FACU
2. Carya tomentosa	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1. Toxicodendron radicans	20	Yes	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .333 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	90	x 4 =	360
UPL species		x 5 =	
Column Totals:	110 (A)		420 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below). all ag field; tree species were taken at adjacent property off site.

SOIL

Sampling Point: DP-A-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/13/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-1

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.282881 Long: -89.487336 Datum: WGS 1984

Soil Map Unit Name: Ad NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Tilled field, depression with hydric soils. Planted with soy.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Glysine max	100	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	75	10YR 3/6	25	R	M	Clay	
4-8	10YR 3/2	75	10YR 3/6	25	R	M	Sandy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Active ag soil

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-2

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.299845 Long: -89.496762 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

historical drainage of Blue Bayou

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Cinna arundinacea	20	Yes	FACW
2. Carex spp	20	Yes	FAC
3. Cyperus esculentus	20	Yes	FAC
4. Althaea officinalis	15	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 = Total Cover		

50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	60	5YR 4/6	40	C	M	Sandy clay	
4-12	10YR 4/2	75	5YR 4/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-3

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.299502 Long: -89.496397 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historical drainage of Blue Bayou

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Equisetum hyemale	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	60	5YR 4/6	40	C	M	Sandy clay	
4-12	10YR 4/2	75	5YR 4/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-4

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.298897 Long: -89.495739 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland buffer between planted soy and Blue Bank Bayou riparian area.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Sorghum halepense	40	Yes	FACU
2. ambrosia artemisiifolia	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	75	10YR 4/6	15	R	M	Loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-5

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.294182 Long: -89.488929 Datum: WGS 1984

Soil Map Unit Name: Cm NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Ephemeral ag drainage, planted soy growing, no defined bank-edges.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 4

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-5

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

= Total Cover

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

= Total Cover

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. Glysine max (planted soy)	100	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

= Total Cover

50% of total cover: 20% of total cover:

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			

= Total Cover

50% of total cover: 20% of total cover:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	0	x 3 =	
FACU species	0	x 4 =	
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	85	10YR 4/6	15	R		Silty loam	
	10YR 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-1
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.306727 | Long: -89.463833 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
Hydrophytic vegetation was observed; however, wetland hydrology and hydric soil indicators were not. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-1

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Sambucus nigra*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Leersia hexandra*	30	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	30	x 1 =	30
FACW Species	30	x 2 =	60
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	60 (A)		90 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Colbert | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Alabama | Sampling Point: DP-C-2
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.306272 | Long: -89.463921 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-2

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	75	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	70	Yes	FACU
2. *Rubus occidentalis*	20	Yes	
3.			
4.			
5.			
6.			
	90	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	145	x 4 =	580
UPL Species	0	x 5 =	0
Column Totals:	145 (A)		580 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-3
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 10
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.305311 | Long: -89.462189 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-3

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	60	Yes	FACU
2. *Ulmus americana*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Rhus copallinum*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1. *Solidago altissima*	40	Yes	FACU
2. *Portulaca oleracea*	20	Yes	FACU
3. *Rubus occidentalis*	10	No	
4. *Sambucus nigra*	10	No	FACW
5. *Rumex crispus*	10	No	FAC
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 20% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10	x 2 =	20
FAC Species	40	x 3 =	120
FACU Species	120	x 4 =	480
UPL Species	15	x 5 =	75
Column Totals:	185 (A)		695 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	9-Apr	10YR 4/6	2	R	M	Silty Loam	
5-16	10YR 4/2	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☑ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-4
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 10
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.305147 | Long: -89.462195 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-4

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	60	Yes	FACU
2. *Ulmus americana*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Rhus copallinum*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1. *Solidago altissima*	40	Yes	FACU
2. *Portulaca oleracea*	20	Yes	FACU
3. *Rubus occidentalis*	10	No	
4. *Sambucus nigra*	10	No	FACW
5. *Rumex crispus*	10	No	FAC
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 20% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10	x 2 =	20
FAC Species	40	x 3 =	120
FACU Species	120	x 4 =	480
UPL Species	15	x 5 =	75
Column Totals:	185 (A)		695 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	9-Apr	10YR 4/6	2	R	M	Silty Loam	
5-16	10YR 4/2	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☑ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-5
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Convex | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.304638 | Long: -89.464147 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Yes ☐ No Hydric Soils Present? ☑ Yes ☐ No Wetland Hydrology Present? ☑ Yes ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-5

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	75	x 3 =	225
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	75 (A)		225 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ **No:** ☐

Remarks: (if observed, list morphological adaptations below).

SOIL Sampling Point: DP-C-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	10YR 3/6	5	R	M	Loamy Clay	
6-16	10YR 6/1	100	10YR 4/6	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-6
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.304533 | Long: -89.464074 | Datum: WGS 1984
Soil Map Unit Name: Commerce silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-6

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	10	x 3 =	30
FACU Species	90	x 4 =	360
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		390 (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-7
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.302970 | Long: -89.464390 | Datum: WGS 1984
Soil Map Unit Name: Commerce silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
Hydrophytic vegetation was observed; however, wetland hydrology and hydric soil indicators were not. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-7

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Quercus nigra*	30	Yes	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Celtis laevigata*	15	Yes	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Cornus florida*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 60% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	15	x 2 =	30
FAC Species	60	x 3 =	180
FACU Species	105	x 4 =	420
UPL Species	0	x 5 =	0
Column Totals:	180 (A)		630 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-8
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.302076 | Long: -89.463971 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1A

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-8

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2. *Ulmus americana*	20	Yes	FAC
3. *Acer negundo*	10	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	80	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	130	x 2 =	260
FAC Species	30	x 3 =	90
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	160 (A)		350 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-9
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.301993 | Long: -89.464511 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-9

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	10	x 3 =	30
FACU Species	90	x 4 =	360
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		390 (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-10
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297765 | Long: -89.465043 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-10

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	100	x 2 =	200
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Colbert | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Alabama | Sampling Point: DP-C-11
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297303 | Long: -89.465133 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Yes ☐ No Wetland Hydrology Present? ☑ Yes ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-11

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Celtis laevigata*	50	Yes	FACW
2. *Quercus nigra*	20	Yes	FAC
3. *Fraxinus pennsylvanica*			FACW
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 67% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	50	x 2 =	100
FAC Species	20	x 3 =	60
FACU Species	10	x 4 =	40
UPL Species	0	x 5 =	0
Column Totals:	80 (A)		200 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ **No:** ☐

Remarks: (if observed, list morphological adaptations below).

SOIL Sampling Point: DP-C-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-12
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297109 | Long: -89.464344 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☑ Water Marks
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-12

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Taxodium distichum*	40	Yes	OBL
2. *Fraxinus pennsylvanica*	30	Yes	FACW
3. *Liquidambar styraciflua*	20	Yes	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	40	x 1 =	40
FACW Species	40	x 2 =	80
FAC Species	20	x 3 =	60
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-13
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296392 | Long: -89.462128 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Ye ☐ No
Wetland Hydrology Present? ☑ Ye ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☑ Water Marks
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-13

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Ipomoea hederacea*	40	Yes	FACU
2. *Eleocharis parvula*	30	Yes	OBL
3. *Rumex crispus*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	30	x 1 =	30
FACW Species	0	x 2 =	0
FAC Species	5	x 3 =	15
FACU Species	40	x 4 =	160
UPL Species	0	x 5 =	0
Column Totals:	75 (A)		205 (B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

No — Dominance Test is >50%

Yes — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-14
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.295904 | Long: -89.462384 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-14

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya illinoinensis*	30	Yes	FACU
2. *Celtis laevigata*	20	Yes	FACW
3. *Cornus drummondii*	20	Yes	FAC
4. *Ulmus americana*	20	Yes	FAC
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	40	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	40	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 60% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	20	x 2 =	40
FAC Species	40	x 3 =	120
FACU Species	70	x 4 =	280
UPL Species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

Yes — Dominance Test is >50%

No — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-15
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296110 | Long: -89.464448 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland. Soy bean field.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-15

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size : 30)			
1. *Glycine max*	100	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-16
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296679 | Long: -89.465263 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Yes ☐ No	
Wetland Hydrology Present?	☑ Yes ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-16

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-17
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292443 | Long: -89.468489 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-17

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:		(A)	(B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-18
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.294712 | Long: -89.465476 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Yes ☐ No	
Wetland Hydrology Present?	☑ Yes ☐ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-18

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-19
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293382 | Long: -89.465306 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-19

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	_____	(A)	_____ (B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-20
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293892 | Long: -89.465290 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Ye ☐ No
Wetland Hydrology Present? ☑ Ye ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-20

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	50	Yes	FAC
2. *Glycine max*	30	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	50	x 3 =	150
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	50	(A)	150 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-21
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293738 | Long: -89.465286 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-21

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes — Dominance Test is >50%

Yes — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-22
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293892 | Long: -89.465290 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-22

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	50	Yes	FAC
2. *Glycine max*	30	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	50	x 3 =	150
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	50	(A)	150 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-23
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292001 | Long: -89.473297 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-23

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	40	x 3 =	120
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-24
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292019 | Long: -89.473363 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-24

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:		(A)	(B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-25
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293456 | Long: -89.462028 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☐ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-25

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	40	x 3 =	120
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-1

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.299469 **Long.:** -89.481666 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-1

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Taxodium distichum	40	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Commelina virginica	100	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	40	x 1 =	40
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		240 (B)

Prevalence Index = B/A = 1.714

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	70	5YR 3/6	30	C	M	Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-2

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.299405 **Long.:** -89.481547 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-2

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	80	x 5 =	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-3

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.304921 **Long.:** -89.49147 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

depression in ag field. Flows to nearby drainage.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-3

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	40	☑	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Eleocharis parvula	80	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		80 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/1	65	5YR	3/6	35	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-4

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.304328 **Long.:** -89.491474 **Datum:** WGS 1984

Soil Map Unit Name: Bo, Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	65	**x 4 =**	260	
UPL species	0	**x 5 =**	0	
Column Totals:	65	**(A)**	260	**(B)**

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-5

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307565 **Long.:** -89.487979 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

depression in ag field. Flows to nearby drainage.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-5

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	40	☑	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Eleocharis parvula	80	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	80	**(A)**	80	**(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/1	65	5YR	3/6	35	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-6

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307933 **Long.:** -89.491772 **Datum:** WGS 1984

Soil Map Unit Name: Bo, Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
point near wooded levee. Confirmed No stream here.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-6

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-7

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.290268 **Long.:** -89.486387 **Datum:** WGS 1984

Soil Map Unit Name: Cm, Commerce silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-7

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	80	x 5 =	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

mostly dead corn. Some alive and rest bare ground.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-8

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.285465 **Long.:** -89.483352 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-8

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-9

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.288197 **Long.:** -89.466162 **Datum:** WGS 1984

Soil Map Unit Name: Wo, Worthen silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-9

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-10

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.293163 **Long.:** -89.449848 **Datum:** WGS 1984

Soil Map Unit Name: Sa, Sharkey clay, 0 to 1 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-10

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	25	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 12.5	20% of Total Cover: 5	25	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	25	**x 5 =**	125	
Column Totals:	25	**(A)**	125	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-11

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.289646 **Long.:** -89.461367 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-11

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. **Triticum cylindricum**	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

all cultivated wheat.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-12

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307291 **Long.:** -89.463822 **Datum:** WGS 1984

Soil Map Unit Name: Re, Reelfoot silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-12

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	80	**x 5 =**	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-13

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.318647 **Long.:** -89.462464 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-13

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	25	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 12.5	20% of Total Cover: 5	25	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	25	**x 5 =**	125	
Column Totals:	25	**(A)**	125	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

young soy coming up. Plowed field.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-14

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.321175 **Long.:** -89.462378 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-14

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. **Triticum cylindricum**	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

all cultivated wheat.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** **DP-E-1**

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355536 **Long.:** -89.462742 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-1

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Carex frankii	85	☑	85.0%	OBL
2. Juncus effusus	15	☐	15.0%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	100	x 1 =	100	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	**(A)**	100	**(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	85	7.5YR 4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-2

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355299 **Long.:** -89.462747 **Datum:** WGS 1984

Soil Map Unit Name: Ib - Iberia silt loam, 0 to 2 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-2

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-3

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355749 **Long.:** -89.462579 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-3

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	10	x 3 =	30	
FACU species	50	x 4 =	200	
UPL species	10	x 5 =	50	
Column Totals:	90	**(A)**	320	**(B)**

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** **DP-E-4**

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357458 **Long.:** -89.462568 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Brunnichia ovata	90	☑	94.7%	FACW
2. Carex frankii	5	☐	5.3%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	5	x 1 =	5	
FACW species	90	x 2 =	180	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.947

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-5

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357372 **Long.:** -89.462546 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-5

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-6

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357912 **Long.:** -89.462607 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-6

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-7

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.363782 **Long.:** -89.462293 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-7

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-8

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.364072 **Long.:** -89.462383 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-8

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Brunnichia ovata	90	☑	94.7%	FACW
2. Carex frankii	5	☐	5.3%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	5	x 1 =	5	
FACW species	90	x 2 =	180	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.947

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-9

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.364409 **Long.:** -89.462481 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-9

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-10

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.366454 **Long.:** -89.463073 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-10

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-11

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.353253 **Long.:** -89.462759 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-11

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	25.0%	FACU
2. Pityopsis graminifolia var. graminifolia	40	☑	50.0%	UPL
3. Cynodon dactylon	20	☑	25.0%	FACU
4.		☐	0.0%	
5.		☐	0.0%	
6.		☐	0.0%	
7.		☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	40	x 4 =	160	
UPL species	40	x 5 =	200	
Column Totals:	80	(A)	360	(B)

Prevalence Index = B/A = 4.500

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-12

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.352209 **Long.:** -89.462782 **Datum:** WGS 1984

Soil Map Unit Name: Bu - Bruno soils and alluvial land **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-12

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-13

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347142 **Long.:** -89.463025 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-13

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-14

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347481 **Long.:** -89.462932 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-14

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Cyperus strigosus	20	☑	57.1%	FACW
2. Sagittaria lancifolia	15	☑	42.9%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 17.5	20% of Total Cover: 7	35	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	15	**x 1 =**	15	
FACW species	20	**x 2 =**	40	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	35	**(A)**	55	**(B)**

Prevalence Index = B/A = 1.571

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-15

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347366 **Long.:** -89.462915 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-15

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-16

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340248 **Long.:** -89.462004 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-16

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Ambrosia trifida	80	☑	84.2%	FAC
2. Rubus trivialis	10	☐	10.5%	FACU
3.		☐	0.0%	
4. Solidago canadensis	5	☐	5.3%	FACU
5.		☐	0.0%	
6.		☐	0.0%	
7.		☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	80	x 3 =	240	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	300	**(B)**

Prevalence Index = B/A = 3.158

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-17

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340343 **Long.:** -89.46198 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (●) No ( )

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
Wet-E-5

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):
Water Table Present?	Yes ( )	No (●)	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-17

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Echinochloa crusgalli	5	☐	5.3%	FACU
2. Leersia oryzoides	80	☑	84.2%	OBL
3. Sorghum halepense	5	☐	5.3%	FACU
4. Verbascum thapsus	5	☐	5.3%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	140	**(B)**

Prevalence Index = B/A = 1.474

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	85	7.5YR 4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-18

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340612 **Long.:** -89.461948 **Datum:** WGS 1984

Soil Map Unit Name: Bo - Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-18

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

First Solar – Ridgely
Natural Resources Report

APPENDIX B

PHOTOGRAPHIC LOG

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PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	7/27/2016

Coordinates:
36.29668, -89.47645

Description:

Roadside manmade ditches bordering property boundaries.

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PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	7/27/2016

Coordinates:
36.29672, -89.47642

Description:

Roadside manmade ditches bordering property boundaries.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	7/27/2016

Coordinates:
36.29135, -89.47661

Description:

S-A-2, Ephemeral drainage.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	7/27/2016

Coordinates:
36.29887, -89.47575

Description:

Overland drainage patterns through ag field.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	7/27/2016

Coordinates:
36.29449, -89.46854

Description:

S-A-5, epehemeral drainage

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	7/27/2016

Coordinates:
36.30523, -89.46442

Description:

Depression in dirt road

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	7/27/2016

Coordinates:
36.29779, -89.46533

Description:

Agricultural uplands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	7/27/2016

Coordinates:
36.29197, -89.48110

Description:

Agricultural uplands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	9/13/2016

Coordinates:

36.28286, -89.48735

Description:

DP-B-1, Agricultural upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	9/14/2016

Coordinates:

36.29995, -89.49690

Description:

S-B-1, historical route of Blue Bank Bayou, now an ephemeral channel.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	9/14/2016

Coordinates:

36.29982, -89.49678

Description:

DP-B-2, herbaceous wetland (WET-B-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	9/14/2016

Coordinates:

36.29977, -89.49672

Description:

S-B-1, historical route of Blue Bank Bayou, now an ephemeral channel.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	9/14/2016

Coordinates:

36.29431, -89.48897

Description:

S-B-2, ephemeral drainage route.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	9/14/2016

Coordinates:

36.29435, -89.48898

Description:

S-B-2, ephemeral drainage route.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	6/13/2018

Coordinates:
36.305196, -89.461922

Description:
S-C-1, Ephemeral stream.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	6/13/2018

Coordinates:
36.304356, -89.462908

Description:
S-C-3, ephemeral drainage.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	6/13/2018

Coordinates:
36.304717, -89.464223

Description:
DP-C-5, PFO wetland (WET-C-1).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	6/13/2018

Coordinates:
36.304494, -89.464040

Description:
DP-C-6, herbaceous / Ag field upland.

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	6/13/2018

Coordinates:
36.302044, -89.464006

Description:
DP-C-8, PFO wetland (WET-C-2).

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	6/13/2018

Coordinates:
36.300460, -89.461058

Description:
S-C-2, Ephermal drainage through ag field.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	6/13/2018

Coordinates:
36.297788, -89.465152

Description:
DP-C-10, PEM wetland (WET-C-3) abutting PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	6/13/2018

Coordinates:
36.297254, -89.465002

Description:
DP-C-11, PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	6/13/2018

Coordinates:
36.297092, -89.464358

Description:
DP-C-12, PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	6/13/2018

Coordinates:
36.296977, -89.463807

Description:
PUB ponded area (WET-C-5).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	6/13/2018

Coordinates:
36.296302, -89.462151

Description:
DP-C-13, PEM wetland (WET-C-6).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	6/13/2018

Coordinates:
36.295922, -89.462541

Description:
DP-C-14, PFO wetland (WET-C-4).

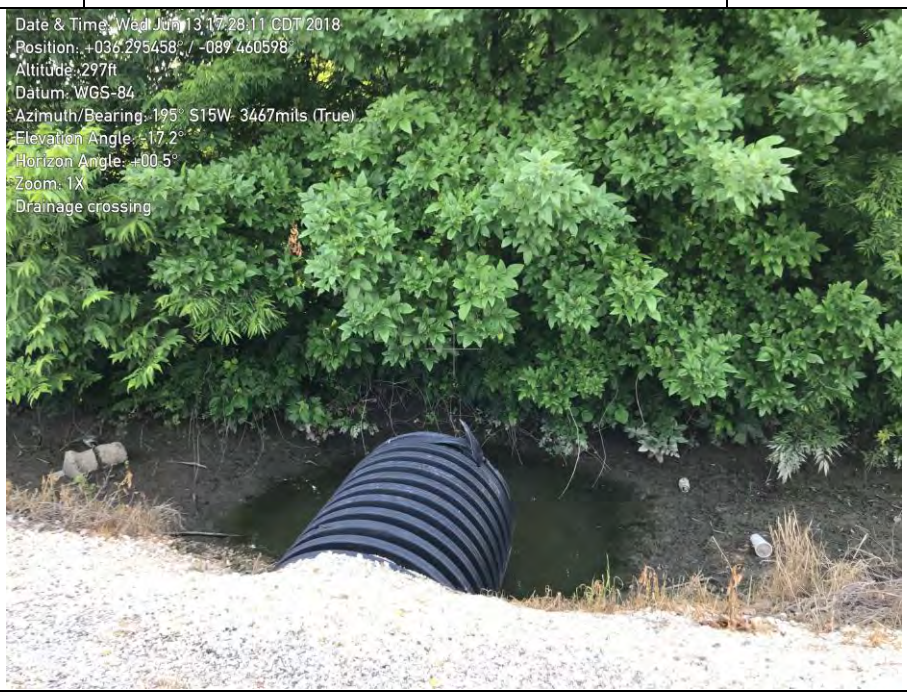
PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	6/13/2018

Coordinates:
36.295548, -89.460598

Description:
Drainage flowing into WET-C-4.



PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	6/13/2018

Coordinates:
36.296090, -89.464449

Description:
DP-C-15, Ag field Upland.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	6/13/2018

Coordinates:
36.293016, -89.468427

Description:
S-C-4, intermittent Ag field drainage.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	6/13/2018

Coordinates:
36.294584, -89.465430

Description:
DP-C-18, PFO wetland (WET-C-7).

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No. 17 | **Date:** 6/13/2018

Coordinates:
36.293354, -89.465502

Description:
DP-C-20, PEM wetland in Ag field (WET-C-9).

Cardno
Shaping the Future

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No. 18 | **Date:** 6/13/2018

Coordinates:
36.293866, -89.465231

Description:
DP-C-21, PFO wetland (WET-C-8).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	6/13/2018

Coordinates:
36.296931, -89.460155

Description:
Slight dry depression between residence and field.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
20	6/13/2018

Coordinates:
36.291986, -89.473248

Description:
DP-C-23, PEM wetland in Ag field (WET-C-11).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
21	6/13/2018

Coordinates:
36.292439, -89.475917

Description:
Roadside drainage ditch.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
22	6/13/2018

Coordinates:
36.293364, -89.461815

Description:
DP-C-25, PEM wetland in Ag field (WET-12).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	6-2-2020

Coordinates:
36.284187, -89.485309

Photo Direction:
n/a

Description:
Vegetation Point 4 - Cultivated Crops

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	6-2-2020

Coordinates:
36.299265, -89.481965

Photo Direction:
n/a

Description:
Vegetation Point 7 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	6-2-2020

Coordinates:
36.299244, -89.481602

Photo Direction:
n/a

Description:
Vegetation Point 8 – Cultivated Crops

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	6-2-2020

Coordinates:
36.307687, -89.475167

Photo Direction:
n/a

Description:
Vegetation Point 12 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	6-2-2020

Coordinates:
36.30221, -89.464598

Photo Direction:
n/a

Description:
Vegetation Point 15 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	6-2-2020

Coordinates:
36.302099, -89.464027

Photo Direction:
n/a

Description:
Vegetation Point 16 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	6-2-2020

Coordinates:
36.294865, -89.465536

Photo Direction:
n/a

Description:
Vegetation Point 20 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	6-2-2020

Coordinates:
36.28791, -89.466636

Photo Direction:
n/a

Description:
Vegetation Point 23 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	6-2-2020

Coordinates:
36.287622, -89.468291

Photo Direction:
n/a

Description:
Vegetation Point 24 – Scrub/Shrub

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	6-3-2020

Coordinates:
36.299379, -89.481568

Photo Direction:
Northwest

Description:
DP-D-1, herbaceous wetland (WET-D-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	6-3-2020

Coordinates:
36.304902, -89.491440

Photo Direction:
Northeast

Description:
DP-3 herbaceous wetland (Wet-D-2).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	6-2-2020

Coordinates:
36.305338, -89464276

Photo Direction:
Southeast

Description:
S-D-1, ephemeral ag drainage.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	6-3-2020

Coordinates:
36.299625, -89.481813

Photo Direction:
Northeast

Description:
S-D-2, Blue Bank Bayou (perennial stream).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	6-3-2020

Coordinates:
36.256690, -89.480550

Photo Direction:
Northeast

Description:
S-D-3, ephemeral stream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	6-3-2020

Coordinates:
36.308619, -89.487779

Photo Direction:
Northeast

Description:
S-D-4, intermittent stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	6-3-2020

Coordinates:
36.294549, -89.449749

Photo Direction:
Northwest

Description:
S-D-5, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
17	6-3-2020

Coordinates:
36.314315, -89.475680

Photo Direction:
Southeast

Description:
S-D-6, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
18	6-3-2020

Coordinates:
36.299540, -89.488012

Photo Direction:
Northeast

Description:
S-D-7, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	6-3-2020

Coordinates:
36.289591, -89.461411

Photo Direction:
Southwest

Description:
S-D-8, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
20	6-4-2020

Coordinates:
36.299309, -89.481633

Photo Direction:
Northwest

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
21	6-4-2020

Coordinates:
36.299303, -89.481651

Photo Direction:
Southwest

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
22	6-4-2020

Coordinates:
36.301974, -89.464189

Photo Direction:
Northeast

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	8-4-2020

Coordinates:
36.375436, -89.465335

Photo Direction:
Southwest

Description:
Vegetation Point 32 – Grassland/Herbaceous.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	8-4-2020

Coordinates:
36.374732, -89465223

Photo Direction:
South

Description:
Vegetation Point 33 – Cultivated Crops.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	8-5-2020

Coordinates:
36.352693, -89.462746

Photo Direction:
South

Description:
Vegetation Point 39 – Cultivated Crops.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	8-4-2020

Coordinates:
36.355536, -89.462742

Photo Direction:
Northeast

Description:
DP-E-1, PEM Wetland (Wet-E-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	8-4-2020

Coordinates:
36.30221, -89.464598

Photo Direction:
n/a

Description:
DP-E-3, Herbaceous, Upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	8-4-2020

Coordinates:
36.357458, -89.462568

Photo Direction:
South

Description:
DP-E-4, PEM Wetland (Wet-E-2).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	8-4-2020

Coordinates:
36.364072, -89.462383

Photo Direction:
Northeast

Description:
DP-E-8, PEM Wetland (Wet-E-3).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	8-4-2020

Coordinates:
36.364409, -89.462481

Photo Direction:
South

Description:
DP-E-9, Cultivated Crops, Upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	8-5-2020

Coordinates:
36.347481, -89.462932

Photo Direction:
Southeast

Description:
DP-E-14, PEM Wetland (Wet-E-4).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	8-5-2020

Coordinates:
36.340343, -89.461980

Photo Direction:
Northwest

Description:
DP-E-17, PEM Wetland (Wet-E-5).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	8-4-2020

Coordinates:
36.353307, -89.462553

Photo Direction:
Southwest

Description:
Wetland 6, Pond, PUB(x).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	8-4-2020

Coordinates:
36.363610, -89.462100

Photo Direction:
West

Description:
S-E-1, Perennial stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	8-4-2020

Coordinates:
36.363610, -89.462100

Photo Direction:
East

Description:
S-E-1, Perennial stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	8-4-2020

Coordinates:
36.366350, -89.463100

Photo Direction:
Southwest

Description:
S-E-2, Ephemeral stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	8-4-2020

Coordinates:
36.366350, -89.463100

Photo Direction:
Northeast

Description:
S-E-2, Ephemeral stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	8-4-2020

Coordinates:
36.347250, -89.463100

Photo Direction:
Northwest

Description:
S-E-3, Perennial stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
17	8-4-2020

Coordinates:
36.347250, -89.463100

Photo Direction:
Southeast

Description:
S-E-3, Perennial stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
18	8-4-2020

Coordinates:
36.299540, -89.488012

Photo Direction:
West

Description:
Stream 1, No Threatened and Endangered species observed. Minnows were present but not the Golden Topminnow (State Deemed in Need of Management).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	8-4-2020

Coordinates:
36.347314, -89.462773

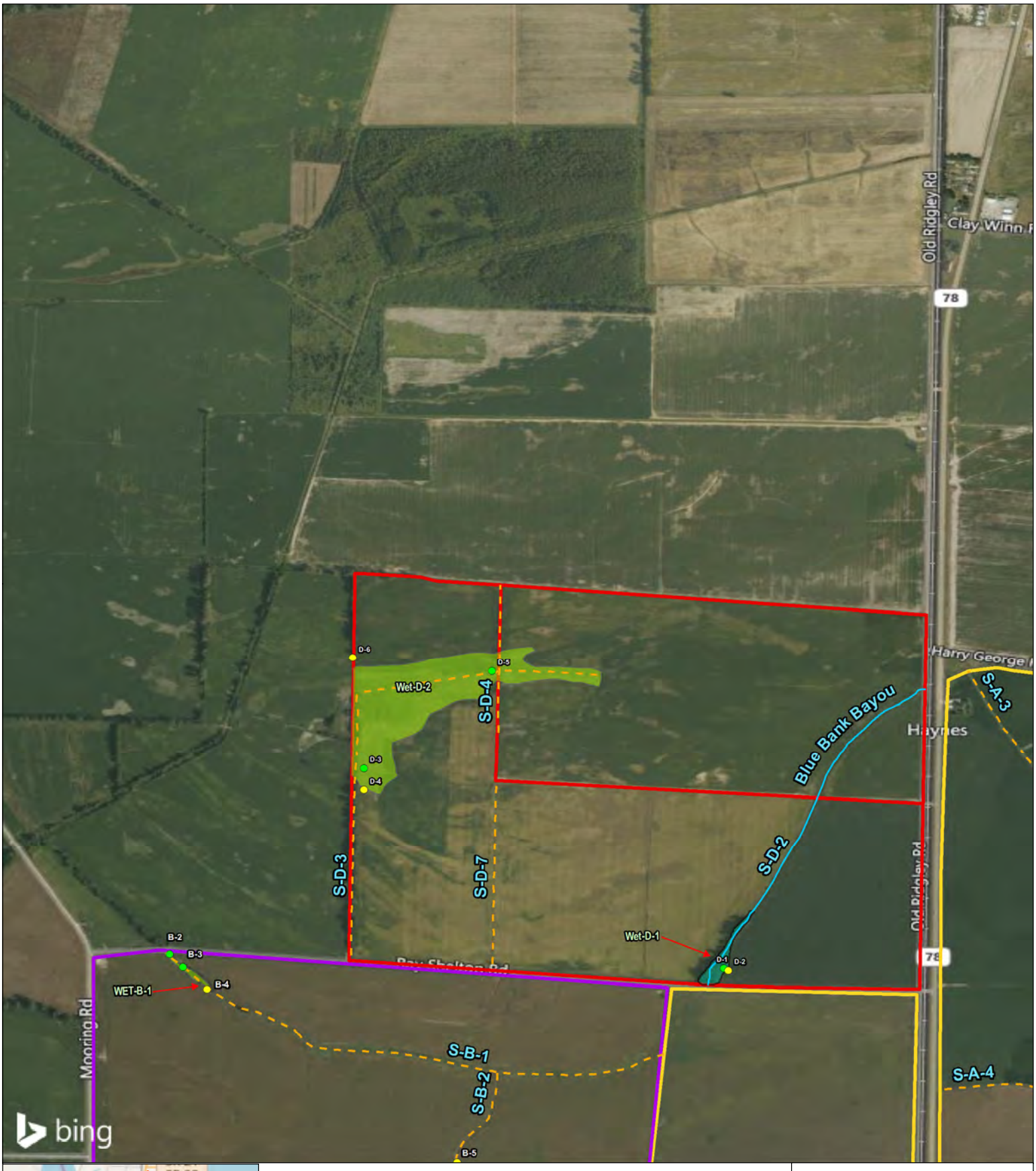
Photo Direction:
N/A

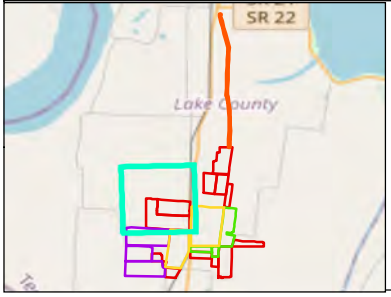
Description:
Sagittaria lancifolia, similar to but not the state threatened Blue Mud-Plantain (Heteranthera limosa).

First Solar – Ridgely
Natural Resources Report

APPENDIX C

PROJECT MAPPING





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

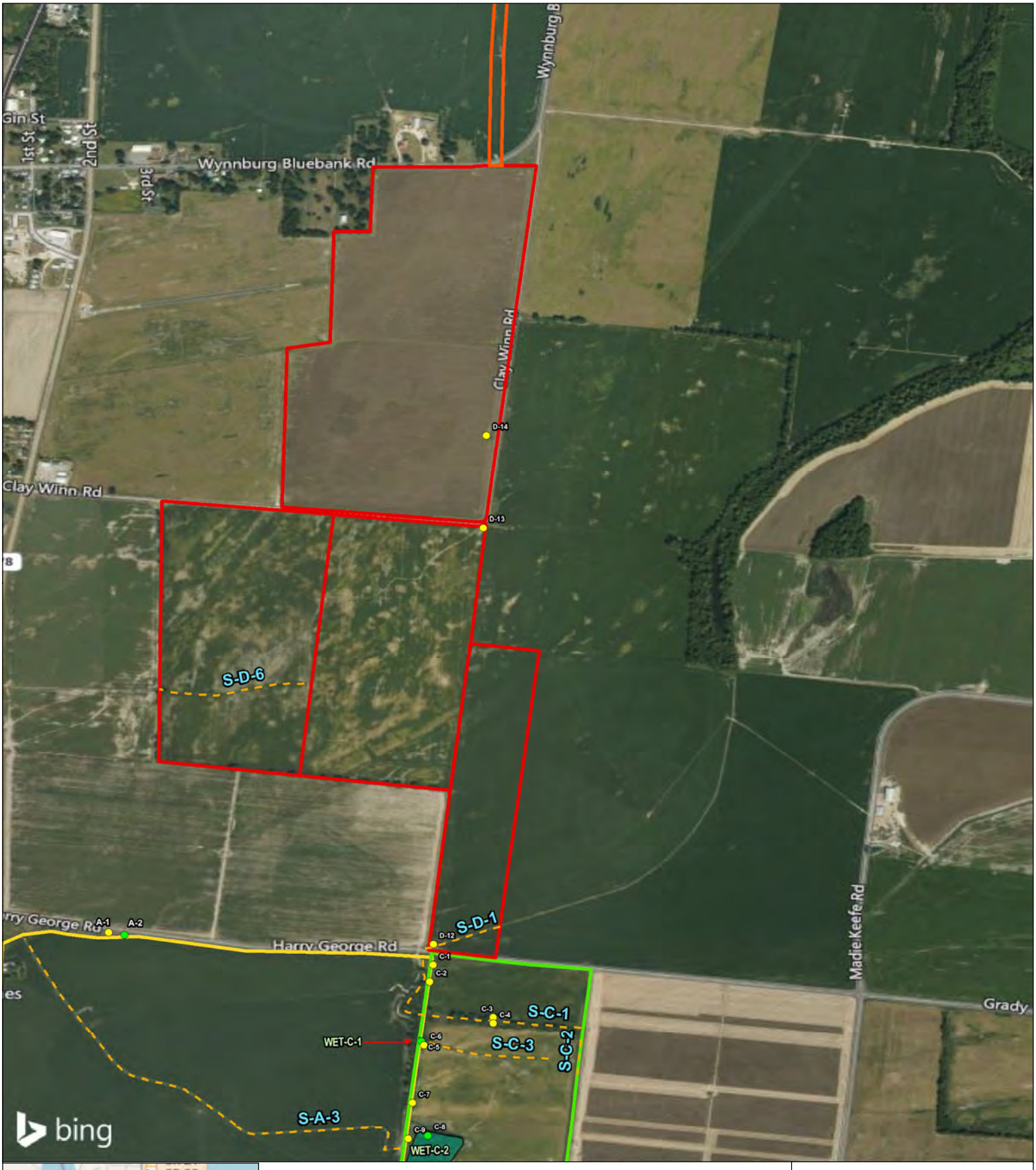
First Solar Ridgely

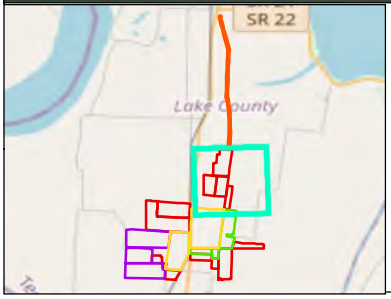
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-1

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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Shaping the Future

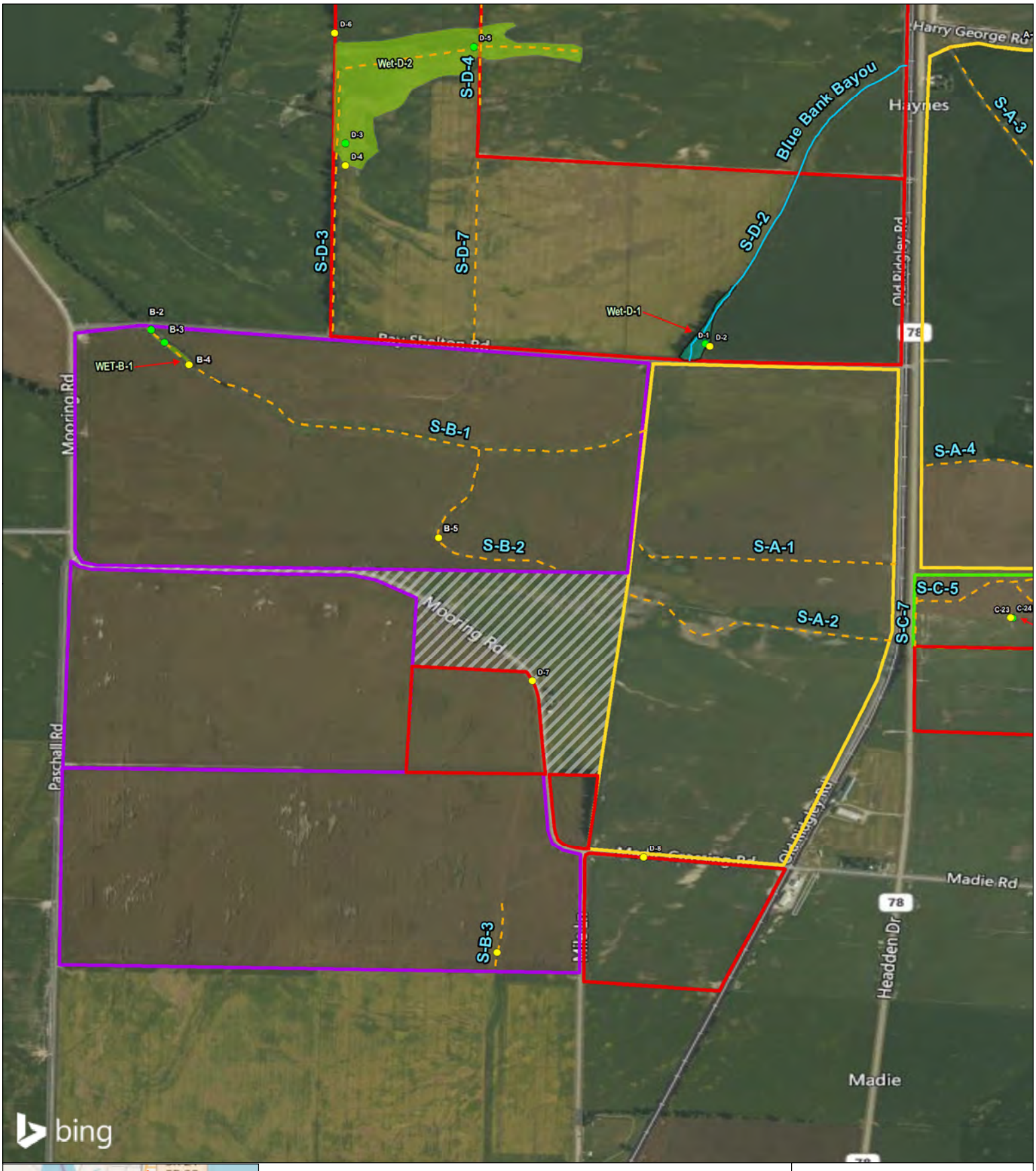
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-2

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Cardno
Shaping the Future

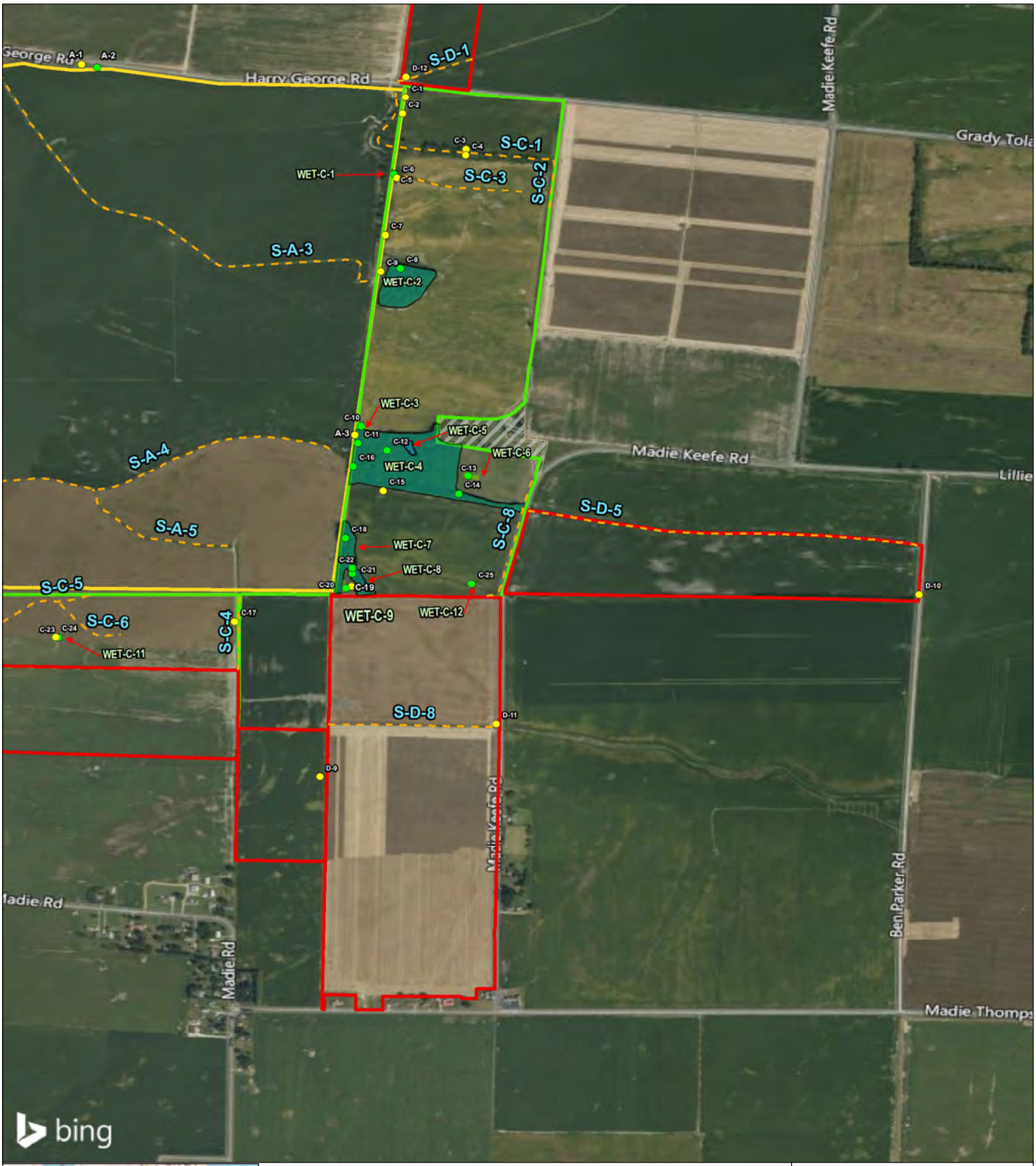
First Solar Ridgely

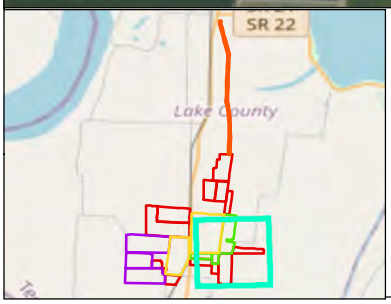
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-3

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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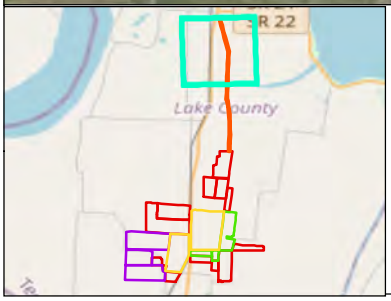
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-4

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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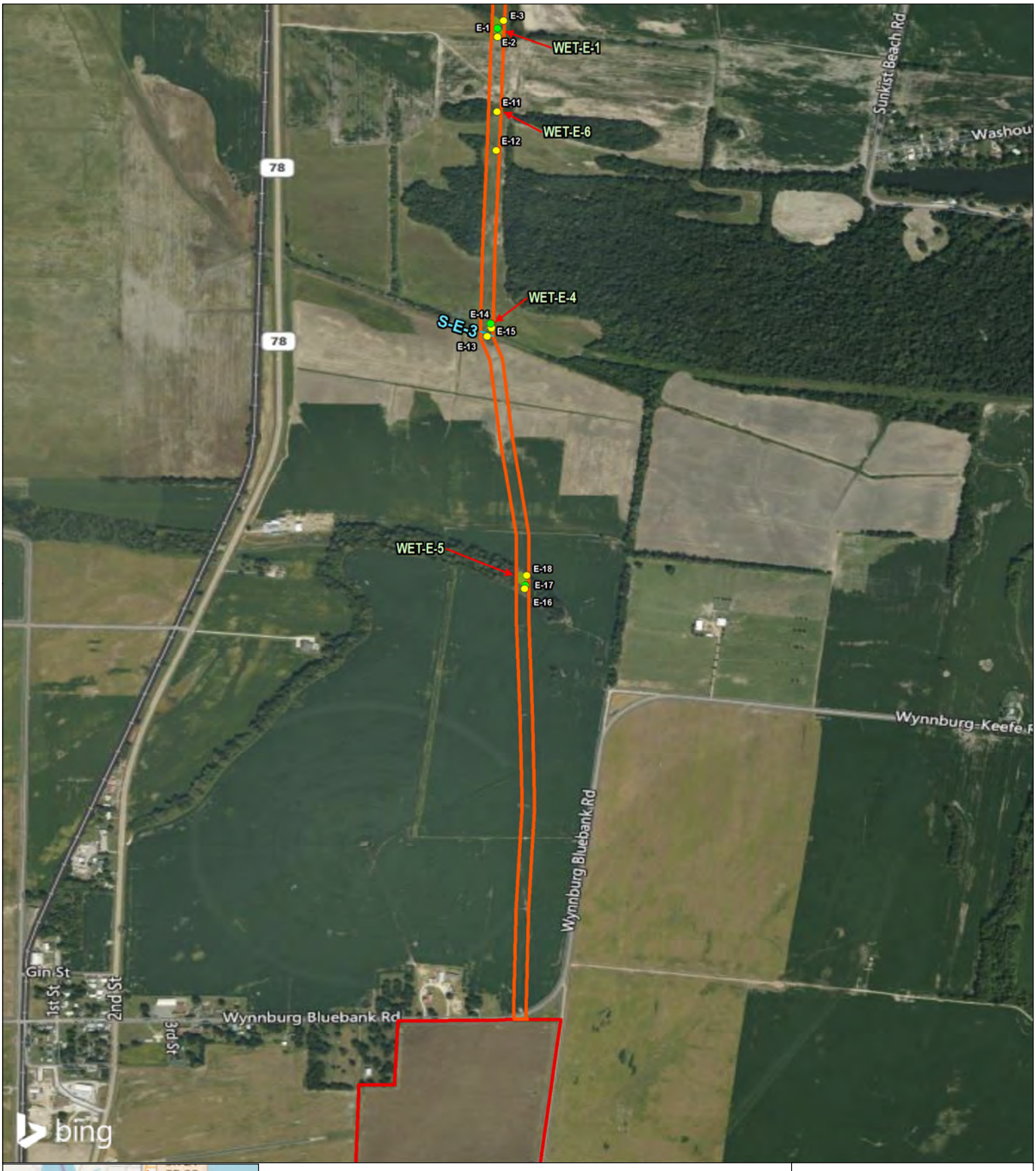
First Solar Ridgely

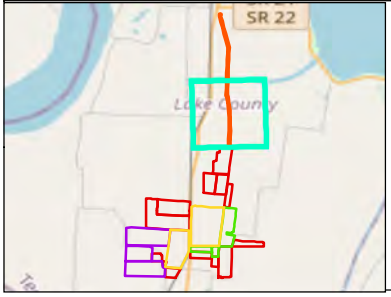
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-5

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

N

0 250 500 1,000
Feet

Cardno
Shaping the Future

First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-6

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

First Solar – Ridgely
Natural Resources Report

APPENDIX D

VEGETATION ASSESSMENT DATASHEETS

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 1 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☑ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 1

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	03
				Wheat	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 2 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 2

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 3 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [x] Litter, duf
- [x] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 3

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
					1

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 4 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [x] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 4

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				corn	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 5 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [x] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 5

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 6 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☑ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 6

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Soy Bean	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 7 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Floodplain Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

Cypress tree woody wetland.

Fringe wetland along stream.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☑ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☑ Broad-leaved
- ☑ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☑ Forest
- ☑ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☑ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 7

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Taxodium distichum	04			Commelina virginica	06
Platanus occicentalis	03			Vitis	04
				Toxicodenron radicans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 8 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 8

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 9 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 9

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 10 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 10

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 11 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 11

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 12 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 12

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Rumex crispus	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 13 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 13

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 14 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Forest around a riverine.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [ ] sandy loam
- [ ] clay loam
- [ ] muck
- [x] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [x] 09 75-85%
- [ ] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [x] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 14

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Celtis laevigata	04			Solidago canadensis	03
Carya	03			Ambrosia	03
Ulmus americana	03			Toxicodendron radicans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 15 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [x] 09 75-85%
- [ ] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 15

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Rumex crispus	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 16 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☑ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [x] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 16

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	05			Carex grayi	04
Celtis laevigata	04				
Ulmus amerciana	04				

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 17 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 17

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 18 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [x] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 18

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	02	Ligustrum sinense	03	Parthenocisus quinquefolia	04
Celtis laevigata	04			Toxicodendron radicans	04
Ulmus amerciana	04			Lonicera Japonica	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 19 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 19

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 20 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [x] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 20

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	02	Ligustrum sinense	03	Parthenocisus quinquefolia	04
Celtis laevigata	04			Toxicodendron radicans	04
Ulmus amerciana	04			Lonicera Japonica	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 21 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 21

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 22 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 22

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 23 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 23

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 24 Polygon Code N/A

Provsnal Community Name Scrub/Shrub

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

mostly young hackberry shrubland

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☑ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☑ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☑ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☑ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 24

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
		Sambucus canadensis	04		
		Toxicodendron radicans	03		

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 25 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 25

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 26 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [x] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 26

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 27 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 27

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 28 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 28

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 29 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 29

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 30 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 30

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 31 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 31

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 32 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Flat Plain

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on edge of farmed field.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [x] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 32

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Teucrium canadense	3
				Campsis radicans	3
				Croton glandulosus	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 33 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 33

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Zea Mays	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 34 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 34

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Teucrium canadense	3
				Campsis radicans	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 35 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 35

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Verbascum thapsus	3
				Campsis radicans	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 36 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

herbaceous area surrounded by crops

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 36

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Ambrosia trifida	3
				Campsis radicans	3
				Croton glandulosus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 37 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 37

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine max	6

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 38 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 38

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Campsis radicans	3
				Croton glandulosus	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 39 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 39

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine max	6

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 40 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 40

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Ambrosia trifida	6
				croton glandulosus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 41 Polygon Code N/A

Provsnal Community Name Grassland Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 41

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Ambrosia glandulosus	06
				Rubus trivialis	3
				Campsis radicans	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 42 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 42

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine Max	06

First Solar – Ridgely
Natural Resources Report

APPENDIX E

TVA RAPID ASSESSMENT DATASHEETS

Site: WET-B-1	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 3

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
ARC GIS

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [■] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-B-1	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

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Metric 5. Special Wetlands

max 10 pts. 5 subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 4 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [x] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

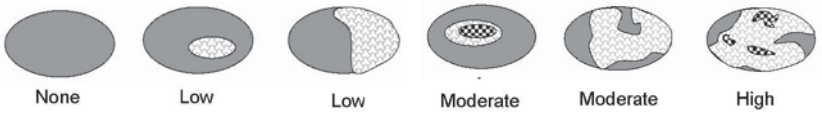
Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

28 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-1	**Rater(s):** Erin Berkenkamp	**Date:** 05/29/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 7

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [x] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 10

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [x] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-1	**Rater(s):** Erin Berkenkamp	**Date:** 05/29/20

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max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [1] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [1] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

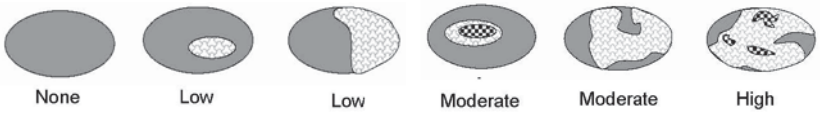
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

29

GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: WET-C-2	**Rater(s):** Ern Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 3

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [x] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 6

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 15

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-2	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

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Metric 5. Special Wetlands

max 10 pts. 5 subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 7 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

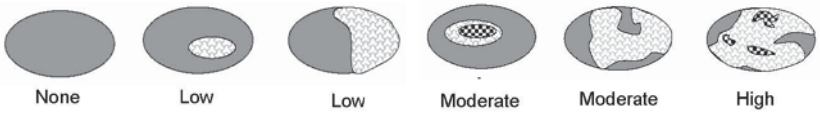
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

36 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-3	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 7

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 7

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

16

Site: WET-C-3	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

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max 10 pts. 10 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

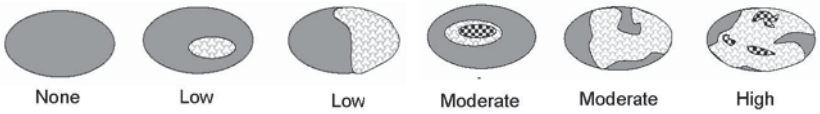
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

31 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-4	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 2

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 12

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 14

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

30

Site: WET-C-4	**Rater(s):** Erin Berkenkamp	**Date:** 6/02/2020

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subtotal previous page

max 10 pts. | 10 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. | 11 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [1] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

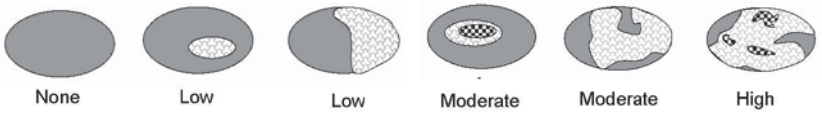
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [2] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

51 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-6	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 6

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 7

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

15

Site: WET-C-6	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

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max 10 pts. | subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. | 3 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

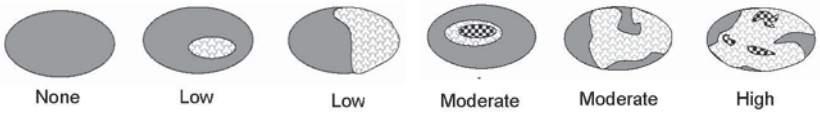
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

18 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-7	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 11

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 13

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-7	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

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subtotal previous page

max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

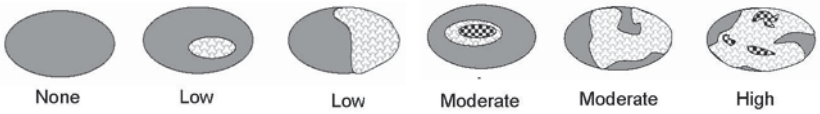
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

37 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-8	**Rater(s):** Erin Berkenk	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 16

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 13

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-8	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

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max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 6 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

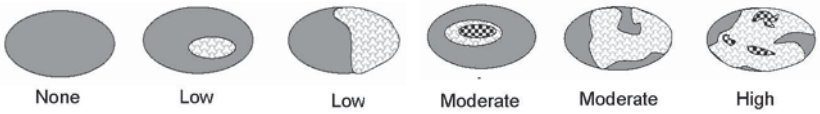
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

43 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-9	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

Metric 1. Wetland Area (size)

0 (max 6 pts. / subtotal)

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

1 (max 14 pts. / subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

9 (max 30 pts. / subtotal)

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

8 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: WET-C-9	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

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Metric 5. Special Wetlands

max 10 pts. subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- ☐ Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- ☐ Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- ☐ Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- ☐ Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- ☐ Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- ☐ Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- ☐ Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- ☐ Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- ☐ Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- ☐ Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- ☐ Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

3
max 20 pts. subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water <20 acres (8 ha)
- ☐ Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4) [BR/CM (5)]
- ☐ Moderate (3)[BR/CM (5)]
- ☐ Moderately low (2) [BR/CM (3)]
- 1 Low (1) [BR/CM (2)]
- ☐ None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- 1 Nearly absent <5% cover (0)
- ☐ Absent (1)

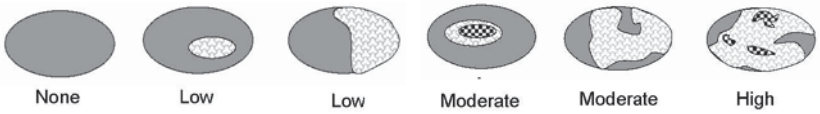
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15 cm (6 in.)
- ☐ Standing dead >25 cm (10 in.) dbh
- ☐ Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

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GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-10	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

1 | max 14 pts. | subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

9 | max 30 pts. | subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

8 | max 20 pts. | subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: WET-C-10	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

18
subtotal previous page

max 10 pts. | subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

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- ☐ Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- ☐ Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- ☐ Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- ☐ Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- ☐ Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- ☐ Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- ☐ Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- ☐ Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- ☐ Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- ☐ Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

3
max 20 pts. | subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water <20 acres (8 ha)
- ☐ Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4) [BR/CM (5)]
- ☐ Moderate (3)[BR/CM (5)]
- ☐ Moderately low (2) [BR/CM (3)]
- 1 Low (1) [BR/CM (2)]
- ☐ None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- 1 Nearly absent <5% cover (0)
- ☐ Absent (1)

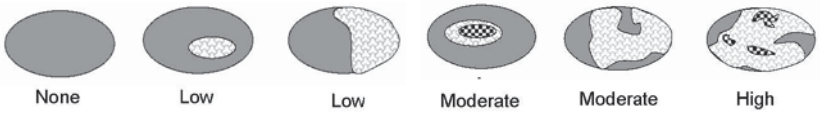
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15 cm (6 in.)
- ☐ Standing dead >25 cm (10 in.) dbh
- ☐ Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

21
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-11	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 4

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

9

Site: WET-C-11	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

9
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

1
max 20 pts. | subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [0] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

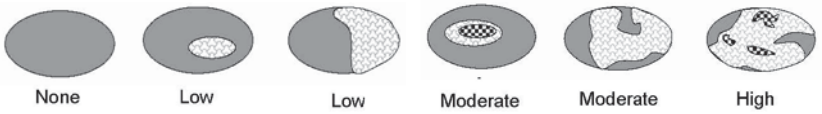
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

10
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-12	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 0

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 4

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

8

Site: WET-C-12	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

8
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

1
max 20 pts. | subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

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3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [x] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

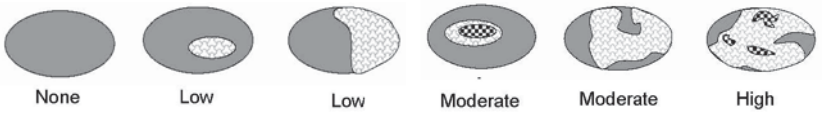
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

9
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation D-1	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 10

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [ ] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [x] Seasonally inundated (2) [BR/CM (4)]
- [ ] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [■] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 15

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

35

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

35
subtotal previous page

max 10 pts. 17 subtotal

17
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [x] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 12 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [x] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [x] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [x] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

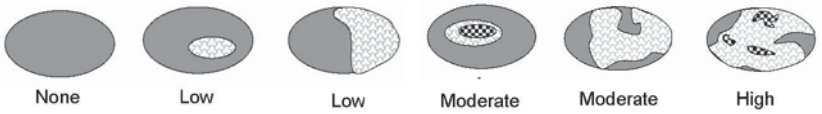
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

64: CAT 3 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation D-2	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | 4 subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [x] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | 8 subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | 5 subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [■] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [■] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMED LAND. PLOWED PLANTED, ETC

Metric 4. Habitat Alteration and Development

max 20 pts. | 3 subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

20

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

20
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

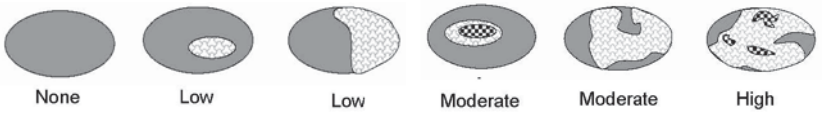
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

26: CAT 1

GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-1	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

18
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

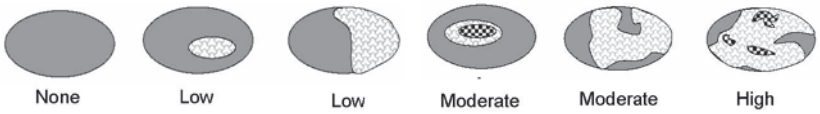
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

24: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: Ridgely Solar Installation E-2	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

17

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

17
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

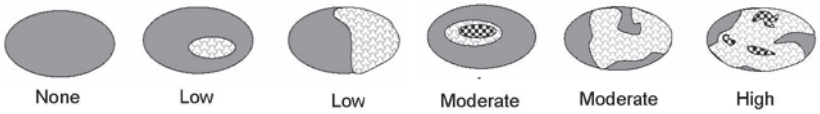
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-3	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | 1 subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | 8 subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | 5 subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | 3 subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

17

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

17
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

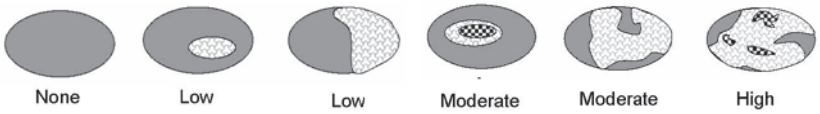
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-4	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

0 (max 6 pts. / subtotal)

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

8 (max 14 pts. / subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

5 (max 30 pts. / subtotal)

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

3 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

16

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

16
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

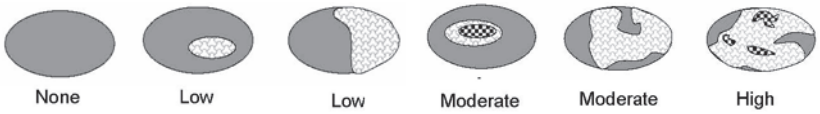
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

22: CAT 1

GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: Ridgely Solar Installation E-5	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

17

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/04/2020

17
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
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3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

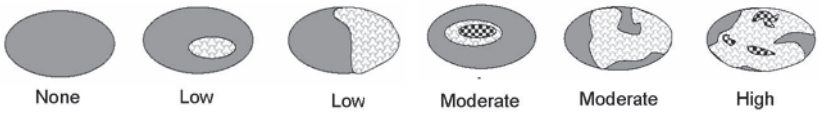
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

First Solar – Ridgely
Natural Resources Report

APPENDIX F

USFWS IPAC OFFICIAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075

In Reply Refer To: May 27, 2020
Consultation Code: 04ET1000-2020-SLI-1244
Event Code: 04ET1000-2020-E-01758
Project Name: First Solar Ridgley Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
(931) 528-6481

Project Summary

Consultation Code: 04ET1000-2020-SLI-1244

Event Code: 04ET1000-2020-E-01758

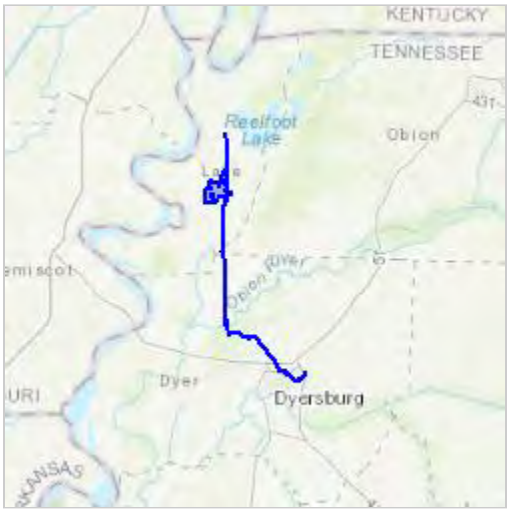
Project Name: First Solar Ridgley Site

Project Type: ** OTHER **

Project Description: Potential site of solar facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.2942300790001N89.45531223378367W



Counties: Dyer, TN | Lake, TN | Obion, TN

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/7162

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

TN Department of Environment & Conservation

County	Category	Scientific Name	Common Name	Fed. Status	State Status	Habitat	Wet Habitat Flag
Lake	Bird	Haliaeetus leucocephalus	Bald Eagle	--	D	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.	Aquatic
Lake	Bird	Thryomanes bewickii	Bewick's Wren	--	D	Brushy areas, thickets and scrub in open country, open and riparian woodland.	Upland
Lake	Bird	Ixobrychus exilis	Least Bittern	--	D	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.	Possible
Lake	Bird	Sternula antillarum athalassos	Interior Least Tern	LE	E	Mississippi River sand bars & islands, dikes. 	Aquatic
Lake	Bird	Limnothlypis swainsonii	Swainson's Warbler	--	D	Mature, rich, damp, deciduous floodplain and swamp forests.	Possible
Lake	Fish	Atractosteus spatula	Alligator Gar	--	D	Sluggish pools of large rivers, oxbows, swamps, and backwaters; west Tennessee.	Aquatic
Lake	Fish	Scaphirhynchus albus	Pallid Sturgeon	LE	E	Large, turbid, free-flowing riverine habitat, in strong current over firm gravel or sandy substrates; Mississippi River main channel.	Aquatic

Lake	Fish	Macrhybopsis meeki	Sicklefin Chub	--	D	Main channel of the Mississippi River in swift currents over sand and gravel substrates.	Aquatic
Lake	Fish	Fundulus chrysotus	Golden Topminnow	--	D	Swamps, backwaters, and pools of ditches and slow-moving creeks; Reelfoot Lake & imm. vicinity.	Aquatic
Lake	Flowering Plant	Elodea nuttallii	Nuttall's Waterweed	--	S	Aquatic; Streams And Ponds	Aquatic
Lake	Flowering Plant	Heteranthera limosa	Blue Mud-plantain	--	T	Mud Flats	Possible
Lake	Flowering Plant	Carex comosa	Bristly Sedge	--	T	Swamps	Possible
Lake	Flowering Plant	Ranunculus flabellaris	Yellow Water-crowfoot	--	T	Ponds And Marshes	Possible
Lake	Flowering Plant	Sagittaria platyphylla	Ovate-leaved Arrowhead	--	S	Swamps, Emergent	Possible
Lake	Flowering Plant	Hottonia inflata	Featherfoil	--	S	Wet Sloughs And Ditches	Aquatic
Lake	Flowering Plant	Iris fulva	Copper Iris	--	T	Bottomlands	Possible
Lake	Flowering Plant	Neobeckia aquatica	Lake Cress	--	S	Gum Or Cypress Swamps	Possible
Lake	Mollusc	Webbhelix multilineata	Striped Whitelip	--	Rare, Not State Listed	Low wet habitats, marshes, floodplains, meadows; lake margins; under leaf litter or drift; Mississippi River floodplain.	Possible
Lake	Mollusc	Lampsilis siliquoidea	Fatmucket	--	Rare, Not State Listed	Slackwater with mud subst; Wolf R (Miss R trib); west TN; may occur at Reelfoot Lk; also rept Drakes Ck (Cumb R), Sumner Co.	Aquatic

Lake	No Data	Rookery	Heron Rookery	--	Rare, Not State Listed	No Data	No Data
Lake	Reptile	Nerodia cyclopion	Mississippi Green Watersnake	--	D	Marshes, swamps, bayous, shallow lakes and ponds, wet prairies, oxbows and floodplain sloughs; far west Tennessee.	Aquatic

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Haliaeetus leucocephalus	Bald Eagle	OBION	TN	S3	D	E - Verified extant (viability not assessed)	DM			HATCHER (1997) REPORTED THE FOLLOWING ACTIVITY AT THIS NESTING SITE: 2 YOUNG FLEDGED EACH YEAR BETWEEN 1992-1996, 3 YOUNG IN 1991, THE PAIR WERE ON THE NEST IN 1990, NEST WITH YOUNG IN 1989, 2 YOUNG IN 1988, AND A NEST WAS BUILT EVERY YEAR BETWEEN 1984-1	1984-01-01	1996-05-12	1996-05-12
1	Nerodia cyclopion	Mississippi Green Water Snake	LAKE	TN	S2	D	H - Historical				ONE INDIVIDUAL WAS COLLECTED IN JUNE OF 1969.	1969-06-18	1969-06-18	1969-06-18
2	Nerodia cyclopion	Mississippi Green Water Snake	LAKE	TN	S2	D	H? - Possibly historical				THREE SPECIMENS WERE COLLECTED AT THIS LOCALITY ON JUNE 28, 1980; 2 SPECIMENS WERE COLLECTED ALIVE AND 1 SPECIMEN WAS PRESERVED AT THE UNIVERSITY OF TENNESSEE VERTEBRATE ZOOLOGY COLLECTION (CAT. NO. 6738).	1980-06-28	1980-06-28	1980-06-28
3	Sorex longirostris	Southeastern Shrew	LAKE	TN	S4		H - Historical				GOODPASTER AND HOFFMEISTER REPORTED THIS SPECIES FROM THIS LOCALITY ON 5 MAY, 1950.	1995-05-05	1950-05-05	1950-05-05
4	Neotoma floridana illinoensis	Eastern Woodrat	OBION	TN	S3	D	H - Historical			ON A BLUFF	GOODPASTER AND HOFFMEISTER (1952) REPORTED A NEST FOUND AT THIS LOCALITY.	1951-03-25	1951-03-25	1951-03-25

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Atractosteus spatula	Alligator Gar	LAKE	TN	S1	D	H? - Possibly historical				BAKER (1937) AND BAKER AND PARKER (1938) REPORTED THE SPECIES FROM COMMERCIAL FISHING REPORTS, OCCASIONAL SPECIMENS TAKEN IN NETS, TAKEN DURING SUMMER OF 1936 AND/OR 1937.	1936-01-01	1936-01-01	1936-01-01
1	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				21 SPECIMENS FROM W.C. STARNES AND R. T. BRYANT 1989 COLLECTION AT 'PROBABLY TWRA DITCHES. . .' LOCALITY IN U.T. COLLECTION (U.T. 60.528). 3 SPECIMENS FROM THIS COLLECTION (33-42mm SL) PHOTOGRAPHED BY BRYANT. DICKINSON (1973) REPORTED THE SPECIES COLLECT	1968-03-11	1992-06-11	1992-06-11
2	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				SISK (1975) REPORTED 28 SPECIMENS COLLECTED FROM THIS LOCALITY 6-14 OCTOBER 1973. ALSO 2 SPECIMENS COLLECTED BY DR. RALPH TAYLOR IN MAY, 1970. DICKINSON (1973) REPORTED THAT THE SPECIES WAS COLLECTED FROM REELFOOT LAKE BETWEEN 1936 AND 1939 BY BAKER	1939-01-01	1973-10-01	1973-10-01
3	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				ONE SPECIMEN FROM THIS LOCALITY COLLECTED BY U.T. ICHTHYOLOGY CLASS IN U.T. ICHTHYOLOGICAL COLLECTION (CAT. NO. 60.426).	1988-10-21	1988-10-21	1988-10-21
4	Scaphirhynchus albus	Pallid Sturgeon	LAKE	TN	S1	E	H? - Possibly historical	LE			NO VOUCHER SPECIMENS, BUT ETNIER AND STARNES (IN PRESS) MAP THIS LOCALITY, BASED ON INFORMATION FROM RELIABLE COMMERCIAL FISHERMAN (RONNIE CAPPS). CAPPS COLLECTS STURGEON WITH GILL AND TRAMMEL NETS AND COMMENTS THAT 1 IN 5 STURGEON TAKEN THIS LOCALITY IS	1988-01-01	1990-01-01	1990-01-01
5	Cycleptus elongatus	Blue Sucker	DYER	TN	S2	T	E - Verified extant (viability not assessed)				ETNIER (1998 PERSONAL COMMUNICATION--E-MAIL--WITH P.SHUTE) REPORTED ONE SPECIMEN SNAGGED BY KENNETH JONES (OF DYERSBURG) WHILE ANGLING AT THIS LOCALITY.	1998-01-01	1998-08-29	1998-08-29
6	Macrhybopsis meeki	Sicklefin Chub	LAKE	TN	S2	D	E - Verified extant (viability not assessed)			SAND BANK	1 SPECIMEN COLLECTED HERE BY ETNIER WHILE SEINING ALONG SAND BANK; UT CAT #44.5972 (DAE FIELD NOTES #93-149).	1993-01-01	1993-10-05	1993-10-05

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Panax quinquefolius	American ginseng	OBION	TN	S3S4	S-CE	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO AND WENDELL CREWS. CITATION: (U87GUT01TNUS) GUTHRIE, M. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UN	DIVERSE HERB AND SHRUB LAYER UNDER A MATURE WOODS TYPICAL OF THE LOESS BLUFFS. WESTERN MESOPHYTIC FOREST.	TWO SMALL PATCHES.	1986-07-15	1986-07-15	1986-07-15
1	Heteranthera limosa	Smaller Mud-plantain	LAKE	TN	S1S2	T	B - Good estimated viability				Plants found in a field depression. Soils wet and likely hydric. Associated plants included Ludwigia palustris (abundant), Ludwigia glandulosa and leptocarpa, Eleocharis obtusa, Ammannia coccinea, Echinochloa spp., and others.	2019-08-18	2019-08-18	2019-08-18
2	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO J. (OBSERVED, NO COLLECTION). CITATION: GUTHRIE, M. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGI		CA. 100 PLANTS	1986-04-14	1986-04-14	1986-04-14
3	Armoracia lacustris	Lake-cress	LAKE	TN	S2	S	E - Verified extant (viability not assessed)		[TNHP BESTSOURCE: PYNE, MILO] ADDITIONAL HABITAT EXISTS WHICH MAY NOT HAVE BEEN SURVEYED.	EDGE OF REELFOOT LAKE BY BOARDWALK. 1997: MUDFLAT UNDER CYPRESS TREES.	1997: ABOUT 50 PLANTS SEEN ON MUDFLAT BY JOHN GABEL AND CARL NORDMAN. 1996: PLANTS PRESENT AT BOARDWALK.	1996-04-27	1997-06-19	1997-06-19
4	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO. CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		A FEW PLANTS SEEN IN CYPRESS WOODS NEAR SHORELINE, PLANTS VIGOROUS, POSSIBLY DUE TO SHADE. NO COLLECTION MADE.	1986-06-14	1986-06-14	1986-06-14
5	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (OBS). CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		LARGE PATCH IN INLET N OF CABIN	1986-07-14	1986-07-14	1986-07-14
6	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	E - Verified extant (viability not assessed)		[TNHP BESTSOURCE: SOMERS, PAUL, ARTHUR SMITH AND SHEILA SHAY]		IN SHALLOW WATER NEAR LARGE BALD CYPRESS TREES. (FLS AND BUDS). NUMEROUS PLANTS. NEAR LAKE DRIVE COMMUNITY. 1996-04-24; PLANTS OBS. BY MILO PYNE.	1996-04-27	1996-04-27	1996-04-27
7	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (743) VDB, TENN]	SHALLOW, PROTECTED WATER PLANTS SHIELDED FROM ROUGH WATER BY A BAND OF ZIZANIOPSIS.	OVER 100 PLANTS SCATTERED AROUND SMALL INLET, FLOWERING WELL.	1986-04-12	1986-04-12	1986-04-12
8	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO. CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		VEG. PATCH OBSERVED NEAR BOAT CHANNEL, NO COLLECTION MADE.	1986-08-09	1986-08-09	1986-08-09
9	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (1411) VDB, TENN]		ABOUT 75 PLANTS. FEW IN FLW. N OF SPAIN POINT. SHORT, BUT VIGOROUS.	1986-09-18	1986-09-18	1986-09-18
10	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO]		1986-09-21: OVER 200 PLANTS SEEN, N OF LARGE INDIAN MOUND AND BOAT-DOCK. FEW PLANTS IN BLOOM. NO COLLECTION MADE. 1986-08-09: LARGE PATCH OBSERVED CA. FIFTY PLANTS, NONE REPRODUCTIVE, COVERING IN EXCESS OF 100 SQ. YDS. SOME DEPREDATION BY HERBIVORES.	1986-08-09	1986-09-21	1986-09-21
11	Heteranthera limosa	Smaller Mud-plantain	LAKE	TN	S1S2	T	B - Good estimated viability				Plants found in a field depression. Soils wet and likely hydric. Associated plants included Ludwigia palustris (abundant), Ludwigia glandulosa and leptocarpa, Eleocharis obtusa, Ammannia coccinea, Echinochloa spp., and others.	2019-08-18	2019-08-18	2019-08-18

First Solar – Ridgely
Natural Resources Report

APPENDIX G

TVA HYDROLOGIC DETERMINATION FIELD DATA SHEETS

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-1	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.292535 -89.480221
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-2	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.291793 -89.480106
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

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Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-3	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.302841 -89.469909
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Bo - Bowdre silty clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

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Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-4	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.296841 -89.470159
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-5	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.294655 -89.470562
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

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In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-1	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.297142 -89.492543
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-2	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.293761 -89.488547
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ib - Iberia silt loam	Source: NRCS Web soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☐ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-3	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.282971 -89.487284
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Cm - Commerce silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-1	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.305046 -89.461719
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Wo - Worthen silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = indicator 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-2	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.303757 -89.459857
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC. indicator 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-3	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.304206 -89.462863
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, Indicator 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-4	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.291917 -89.468342
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = wwc, Indicator 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-5	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.292455 -89.474518
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = wwc, indicator 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-6	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.292027 -89.472315
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Rf - Reelfoot silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-7	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.291693 -89.475966
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-8	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.294063 -89.460908
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-9	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.293135 -89.461574
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-1	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.307416 -89.463125
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Re - Reelfoot silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☑ Moderate ☐ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC: PRIMARY INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: Blue Bank Bayou (S-D-2)	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.302573 -89.479798
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = STREAM: INDICATORS 5 and 6.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase. Frogs and small fish.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-3	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.302849 -89.491811
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Tc - Tunica clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☐ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = Indicator 4

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-4	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.308575 -89.487769
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☐ Slight ☑ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-5	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.294732 -89.455303
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-6	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.314088 -89.469309
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-7	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.301946 -89.487889
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-8	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.289566 -89.463959
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-E-1	Date/Time: August 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.363612 -89.642125
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 5, 6, and 7. STREAM

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature maintains perennial flow.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-E-2	Date/Time: August 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.36635 -89.463073
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = INDICATOR 4.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-E-3	Date/Time: August 4, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.347249 -89.46306143
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☑ average ☐ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : Old Farmer's Almanac / National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ie - Iberia silty clay loam	Source: NRCS Web soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☐ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

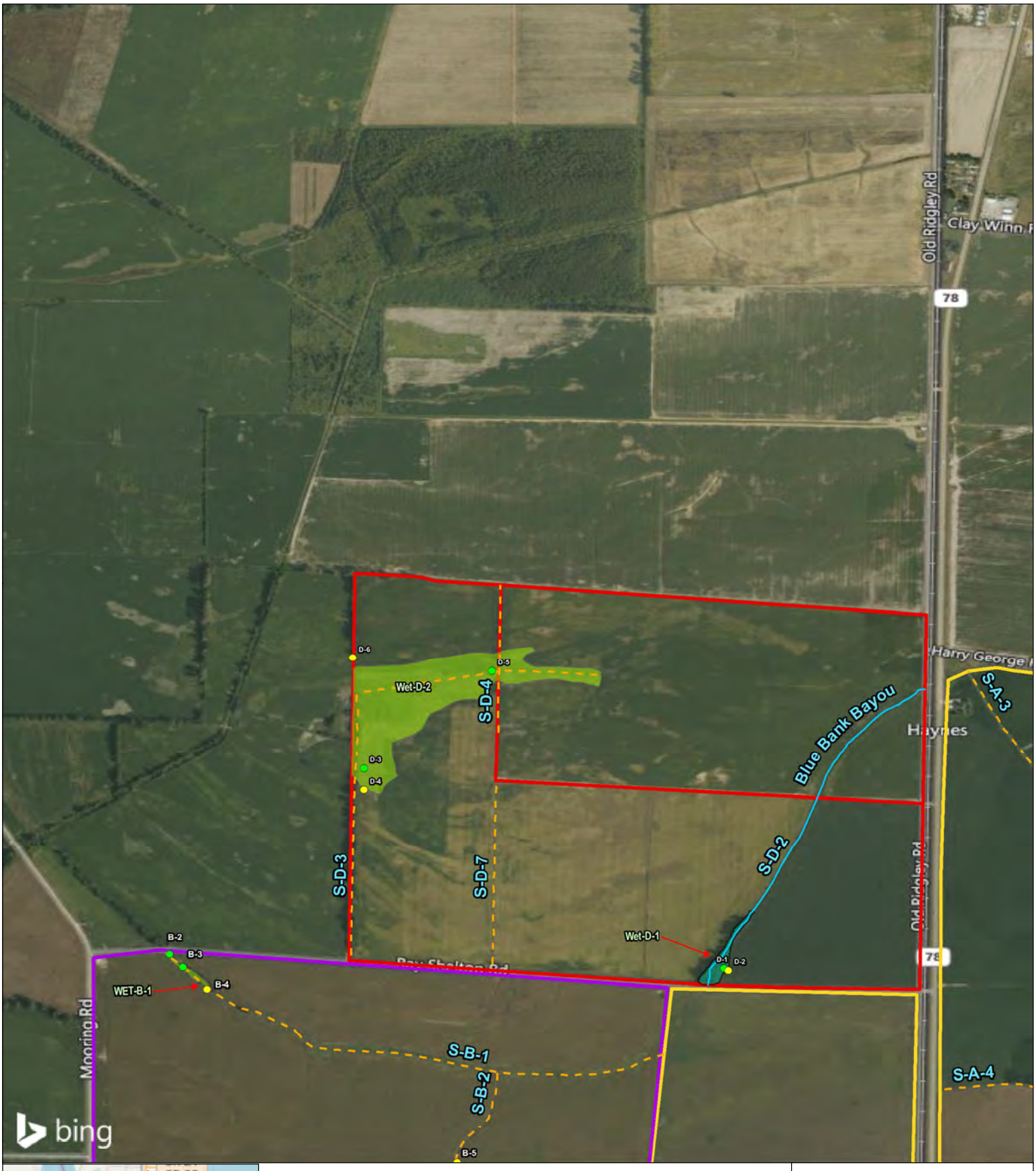
Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

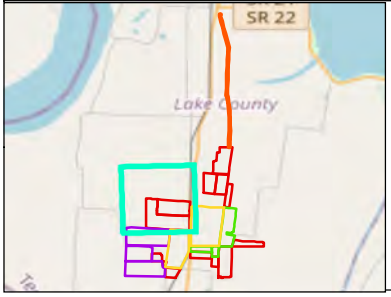
Overall Hydrologic Determination = INDICATOR 5, 6, and 7. STREAM

Secondary Indicator Score (if applicable) =

Justification / Notes :

Daily flow and precipitation records showing feature maintains perennial flow.





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

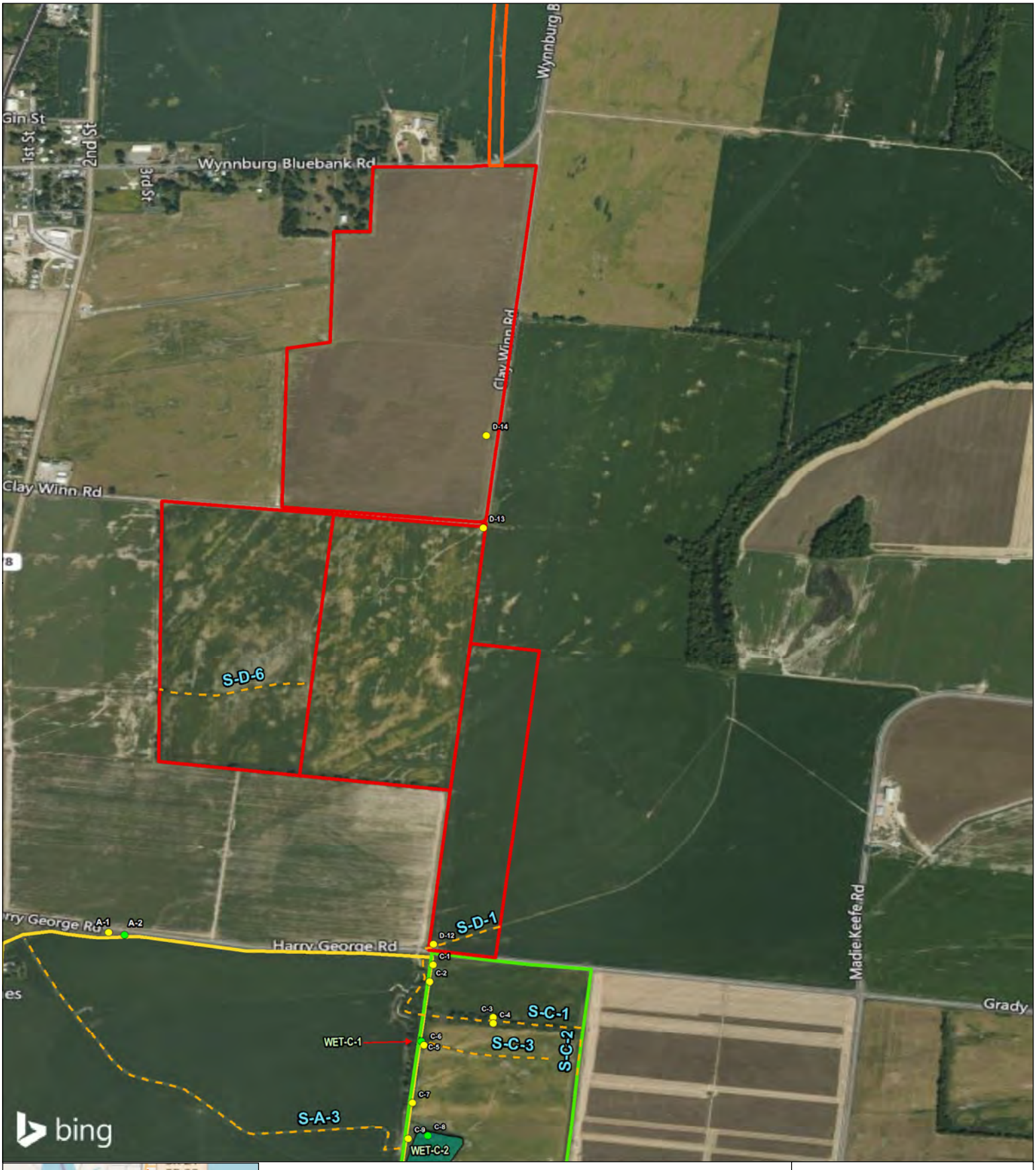
First Solar Ridgely

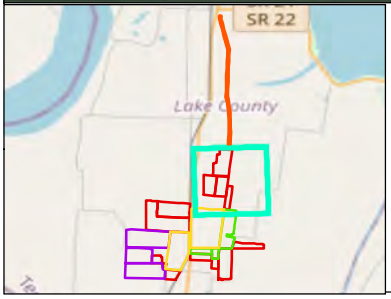
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-1

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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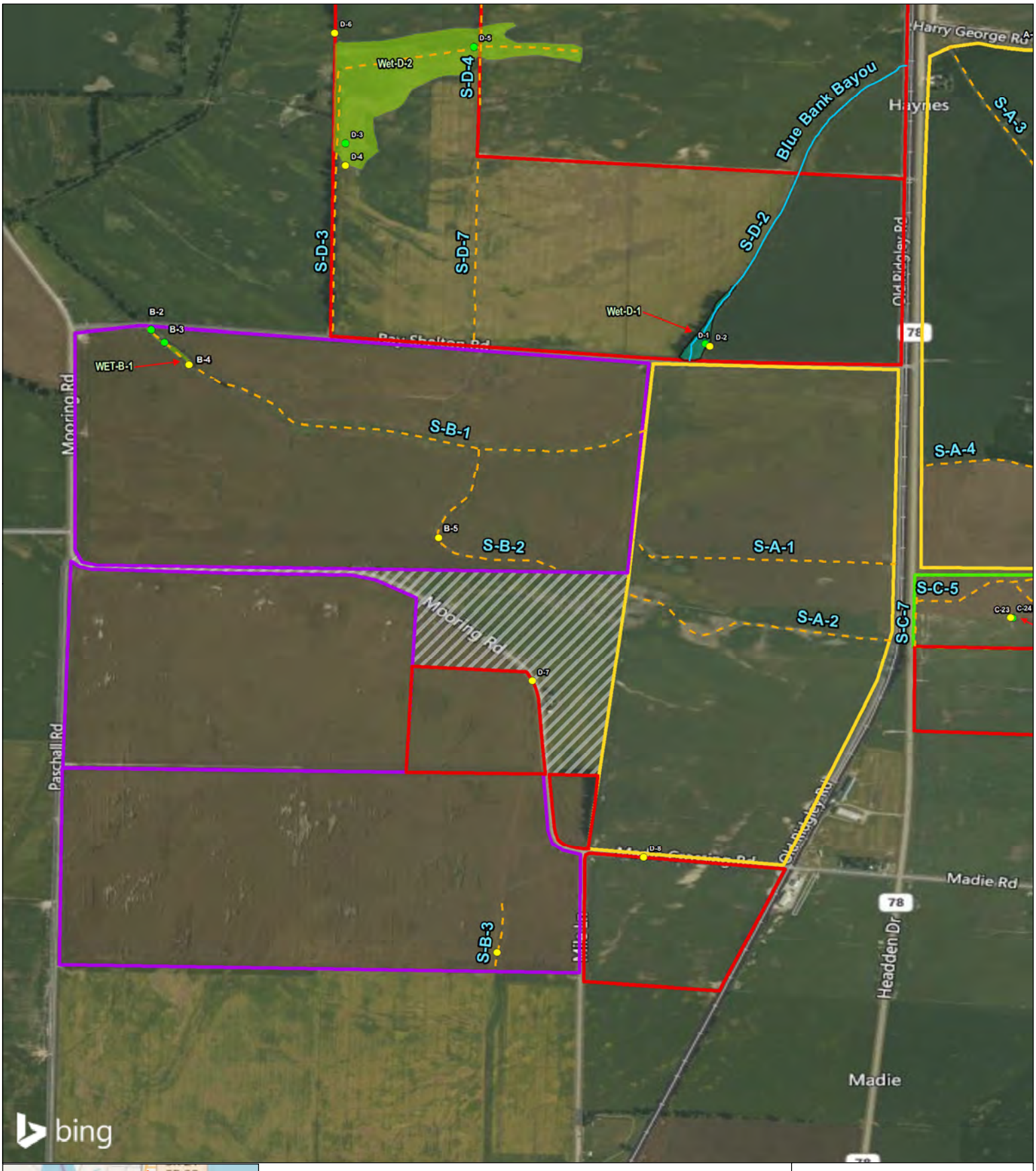
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-2

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



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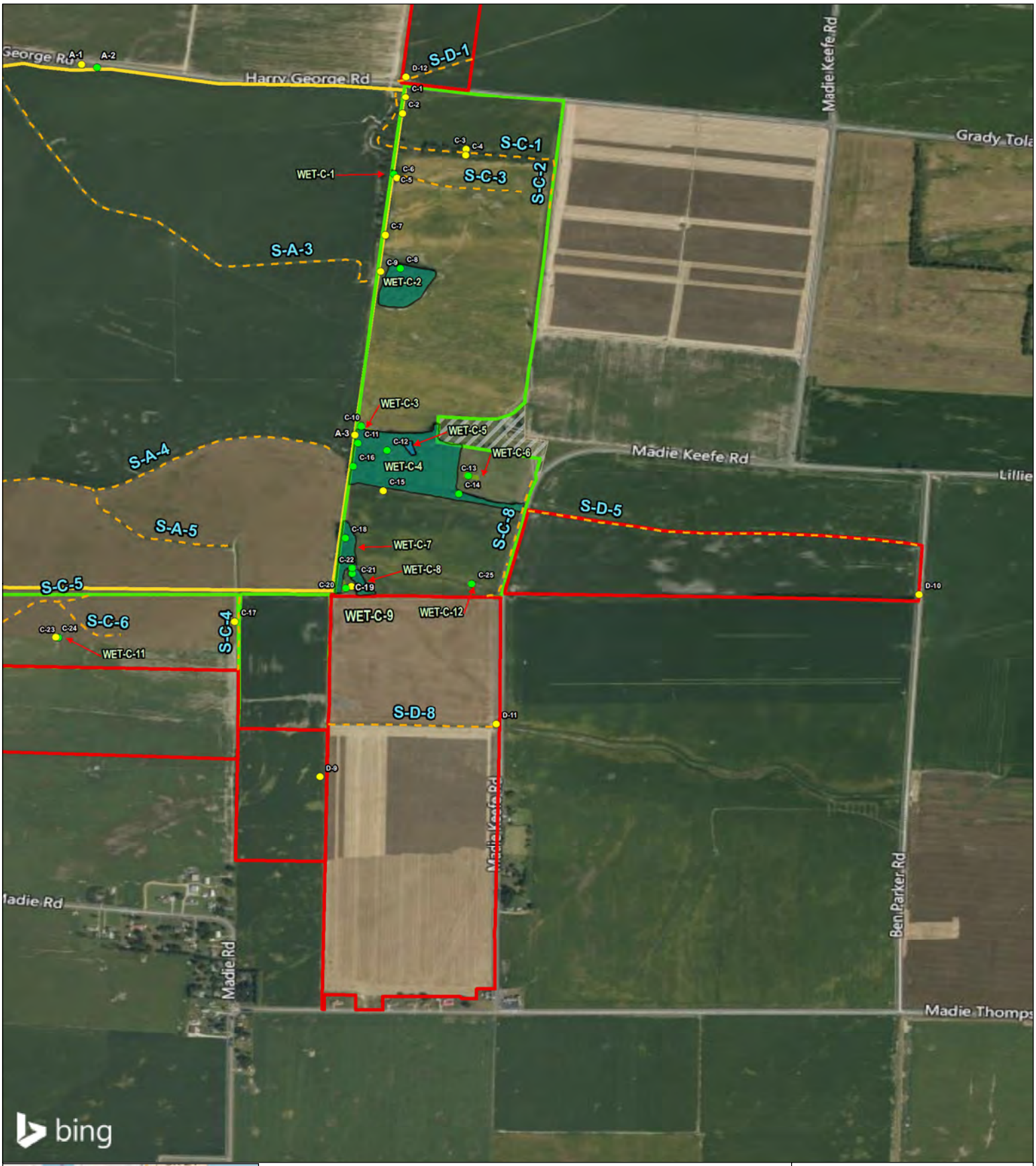
First Solar Ridgely

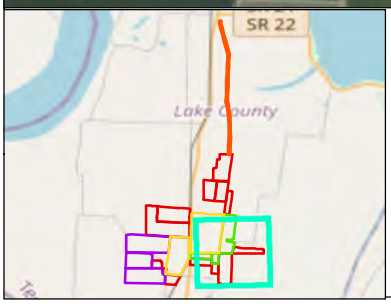
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-3

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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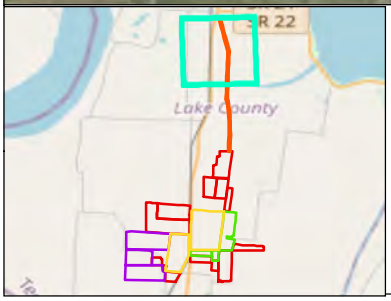
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-4

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

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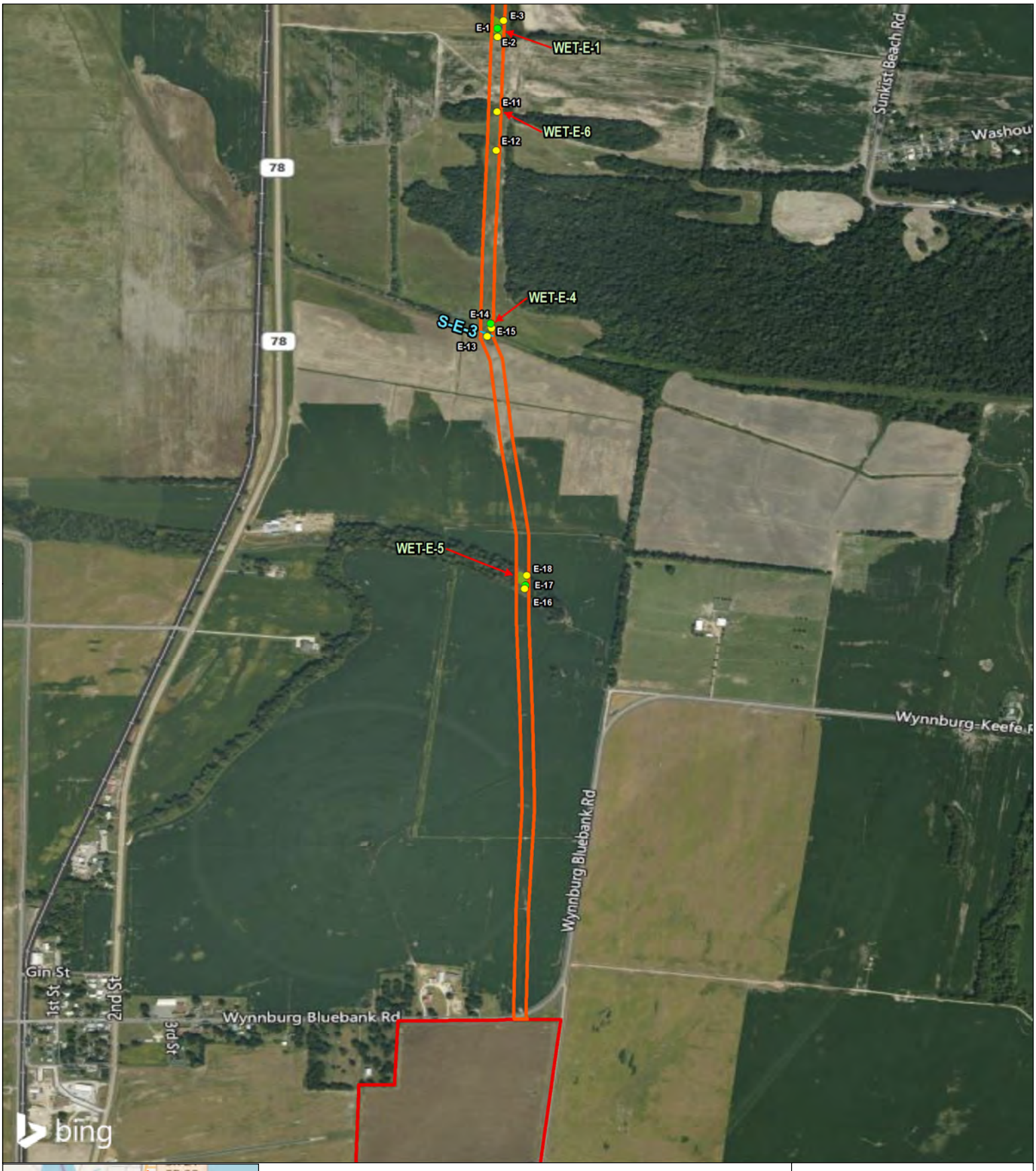
First Solar Ridgely

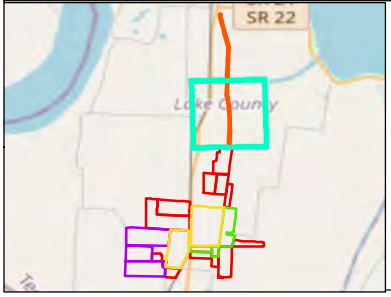
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-5

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

N

0 250 500 1,000
Feet

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First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-6

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

APPENDIX G

NATURAL RESOURCES REPORT (WETLANDS AND PROTECTED SPECIES)

Natural Resources Report

Ridgely Energy Farm, LLC

Lake County, Tennessee

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Document Information

Prepared for	Ridgely Energy Farm, LLC
Project Name	Ridgely Solar Facility Natural Resources Report
Project Number	E318201608
Project Manager	Chad Martin
Date	November 12, 2020

Prepared for:

Ridgely Energy Farm, LLC
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Prepared by:

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Tel 512 605 2640 Toll-free 800 368 7511
www.cardno.com

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Acronyms

CWA	Clean Water Act
GIS	Geographic information systems
IPaC	Information for Planning and Consultation
NHD	National Hydrography Dataset
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NTCHS	National Technical Committee for Hydric Soils
NWP	Nationwide Permit
NWI	National Wetland Inventory
OHWM	Ordinary High Watermark
PDOP	Position Dilution of Precision
Ridgely	Ridgely Energy Farm, LLC
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
TDEC	Tennessee Department of Environment and Conservation
TLine	Transmission Line
TNW	Traditional Navigable Water
TVA	Tennessee Valley Authority
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.
WWC	Wet Weather Conveyance

1 Executive Summary

Cardno was contracted by Ridgely Energy Farm, LLC (Ridgely) to conduct an environmental assessment on multiple properties consisting of 2,411 acres, including 3.3 mile (40 acres) of 100-foot-wide existing transmission line right-of-way (ROW), referenced as the Ridgely Properties (Project). The Project consists of four groups of properties and a Tennessee Valley Authority (TVA) transmission line right-of-way (ROW) (designated as studies A-E) in Lake County, Tennessee that were surveyed by Cardno from July 2016 to August 2020. The tasks performed as part of this environmental assessment included a review of threatened and endangered (T&E) species, potential cultural resources, vegetation assessments, and a delineation of potential waters of the United States (WOUS). The methodology, results, and recommendations of the review as it pertains to the Project area are contained within and summarized below.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, five bird species, five fish species, nine flowering plant species, one snail species, one freshwater mussel species, and one reptile species listed by the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the Tennessee Department of Environment and Conservation (TDEC), and/or the TVA Natural Heritage Database as having the potential to occur within or be affected by the Project (**Appendix F**). No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's wren, Least bittern, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the Tennessee Department of Environment and Conservation (TDEC) species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American Ginseng, and Lake Cress.

Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long-eared Bat (NLEB) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the small patches of forested riparian areas and the distance to current summer and winter grounds, it is highly unlikely that the NLEB would be impacted by this Project. Although the portions of Blue Bank Bayou that flow through the Project area may contain suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project.

In compliance with Section 404 of the Clean Water Act (CWA), this report contains a delineation of potential wetland features that may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Field delineations were performed by Cardno scientists during site visits to different portions of the Project from July 2016 to August 2020. All potential wetlands identified by the National Wetlands Inventory (NWI) as well as all potential jurisdictional waters identified by the National Hydrography Dataset (NHD) in the Project area during initial desktop evaluations were investigated in the field. Cardno's final review of data compiled to date was analyzed under the rules and guidelines defined in the Navigable Waters Protection Rule published on April 21, 2020 and enacted on June 22, 2020. Our classification of streams and adjacent wetlands are catalogued accordingly, to the best of our understanding of normal hydraulic conditions at the properties under review.

Cardno scientists identified **25** ephemeral drainages, **one** intermittent stream, **three** perennial streams, and **21** wetlands, including two excavated ponds within the Project area. From the field investigation, it was determined that **four** of the identified streams, as well as **four** of the identified wetlands may possess a

hydrological connection to Blue Bank Bayou or to the Mississippi River directly, and therefore may likely be considered jurisdictional under USAC guidance. The ephemeral streams did not exhibit flow during field investigations, and eighteen of the identified wetlands, including the two excavated ponds appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance.

If any streams and/or wetlands are deemed 'jurisdictional' by the USACE, the proposed Project could be completed under a Nationwide Permit (NWP) 51. Additionally, the Project would need to develop a Storm Water Pollution Prevention Plan (SWPPP) and provide Notice of Intent (NOI) prior to Project construction. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS, including the loss of no more than 300 linear feet of stream bed. If impacts from the construction of the energy generation facility and associated infrastructure including roads, parking lots, stormwater management facilities, and pipelines permanently impact less than ½-acre then the Project may proceed under a NWP. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit. Impacts to streams or wetlands within the Project area may require an Aquatic Resource Alteration Permit (ARAP) or a Section 401 Water Quality Certification from the Tennessee Division of Water Resources.

2 Introduction

Cardno was contracted by Ridgely Energy Farm, LLC (Ridgely) to conduct an environmental assessment on multiple properties consisting of 2,411 acres, including 3.3 mile (40 acres) of 100-foot-wide existing transmission line right-of-way (ROW), referenced as the Ridgely Properties (Project) in Lake County, Tennessee (**Figure 2-1**). The Project consists of four groups of properties and one transmission line (TLine) ROW that were surveyed by Cardno from 2016 to 2020. These are presented as Studies A through E in **Table 2-1**.

Table 2-1 Environmental Assessment Studies Conducted in Lake County, Tennessee

Study ID	Property Parcels	Field Survey Dates
Study A	• 599-acre (Staulcup)	7/27/2016 – 7/28/2016
Study B	• 540-acre (Paschall)	9/13/2016 – 9/14/2016
Study C	• 209-acre (Leeper, Forrester, and Staulcup)	6/13/2018
Study D	• 1023-acre (Leeper, Kaiser, Forrester, Paschall, Patterson, Richardson, Staulcup, and Weakely)	6/2/2020 – 6/4/2020
Study E	• 40-acre TVA Line ROW	8/3/2020- 8/6/2020

This report contains a delineation of all resources that potentially fall under the jurisdiction of the USACE. Cardno conducted desktop investigations to:

> Identify potential environmental permits that may be required to construct the Project; and

> Review and document cultural resources that may be located within or in close proximity to the Project area that may be impacted by Project activities.

Cardno scientists conducted field delineations during five site visits within different portions of the Project from July 2016 to August 2020 to:

> Delineate the approximate boundaries of potential jurisdictional wetlands and waterbody ordinary high water marks (OHWM) within the Project; and

> Document general site conditions; and

> Evaluate the potential for federally listed species habitat.

The results of the desktop and onsite investigations are provided in this report.

Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Streams

0 750 1,500 3,000
Feet

[redacted]

First Solar Ridgely

Project Area Overview

Date:	Project No:	Figure No:
June 2020	E318201608	**2-1**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_FIG.2-1 OVERVIEW.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

3 Site Location

The Project is located in a rural setting in the eastern portion of Lake County (**Figure 2-1**). According to the United States Environmental Protection Agency (USEPA) Level III and IV Ecoregions of Tennessee map accessed June 2020, the Project area falls within the Northern Mississippi Alluvial Plain (73a) ecoregion, and consists of a relatively flat region of Quaternary alluvial deposits of sand, silt, clay, and gravel. It is bounded distinctly on the east by the Bluff Hills (74a), and on the west by the Mississippi River. Most of the region is in cropland, with some areas of deciduous forest. The natural vegetation consists of Southern floodplain forest (oak, tupelo, bald cypress). Soils within the Northern Mississippi Alluvial Plains are underlain by Holocene alluvium. The two main distinctions in the Tennessee portion of the ecoregion are between areas of loamy, silty, and sandy soils with better drainage, and areas of more clayey soils of poor drainage that may contain wooded swampland and oxbow lakes (Griffith et al 1997).

The Project and surrounding areas consists mainly of croplands containing soybeans, cotton, corn, sorghum, and vegetables. The Mississippi River is located to the west of the Project approximately 3.8 miles away from the Project area and Reelfoot Lake is located approximately 2.7 miles northeast of the Project. Additionally, Blue Bank Bayou is located adjacent and within the Project and serves as a tributary to the Mississippi River and Reelfoot Lake.

3.1 Vegetation Communities

Field surveys were conducted in June and August 2020 to document plant communities within the 2,411-acre Project area. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be classified as a combination of deciduous forest, evergreen forest, and herbaceous/agricultural vegetation. No forested areas in the proposed project area had structural characteristics indicative of old growth forest stands (Leverett 1996). The plant communities observed in the proposed Project area are common and well represented throughout the region.

The forests in the proposed Project area consist of mostly deciduous forest. Deciduous forest, where deciduous trees account for more than 75 percent of total canopy cover, occupies about 0.32 percent of the proposed Project area. Oak (*Quercus) species,* American sycamore (*Platanus occidentalis),* Sweet Gum *(Liquidambar styraciflua),* and Ash (*Fraxinus)* species. The invasive Chinese privet (*Ligustrum sinense)* are prevalent in the understory of forested areas across the Project. This species also seems to persist in areas that were recently cleared, readily invading abandoned lots and farmlands where it forms impenetrable thickets.

Grassland/herbaceous areas consist of 0.06 percent of the Project area and is characterized by greater than 75 percent cover of forbs and grasses such as curley dock (*Rumex crispus),* buckhorn (*Plantago lanceolate),* goldenrod (*Andropogon virginicus), and* winter ryegrass (*Lolium perenne)* and less than 25 percent cover of other types of vegetation. Agricultural land accounts for approximately 96.7 percent of the Project area and are dominated with planted wheat *(Triticum aestivum)*, soybeans *(Glycine max)*, cotton *(Gossypium hirsutum)*, or corn *(Zea mays)* (Appendix H). Areas of wetlands, consisting of approximately 2.0 percent, were present in the Project area. Woody wetlands vegetative communities consisted mainly of water oak (*Quercus nigra),* red maple *(Acer rubrum),* sweetgum *(Liquidambar styraciflua),* ash (*Fraxinus)* species, bald cypress (*Taxodium distichum)* and American elm (*Ulmus Americana).* Emergent Herbaceous wetlands vegetation communities were dominated by spikerush (*Eleocharis parvula).* See the wetland section 5.3 for more discussion of those areas. The remaining acreage consisted of roads, infrastructure and barren land.

- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

[redacted]

First Solar Ridgely

Vegetation Assemblages within the Proejct Area

Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (1)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

[redacted]

First Solar Ridgely

Vegetation Assemblages within the Proejct Area

Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (2)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

[redacted]

First Solar Ridgely

Vegetation Assemblages within the Proejct Area

Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (3)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 295 590 1,180

Feet

[redacted]

First Solar Ridgely

Vegetation Assemblages within the Proejct Area

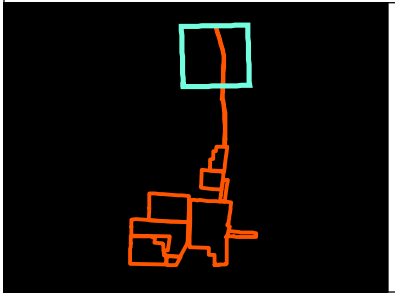
Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (4)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Vegetation Points
Excluded Parcels
Project Boundaries
T-Line 50ft Buffer

Vegetation Communities

Cultivated Crops
Deciduous Forest
Developed, High Intensity
Emergent Herbaceous Wetlands
Grassland/Herbaceous
Open Water
Scrub/Shrub
Woody Wetlands

0 300 600 1,200
Feet

[redacted]

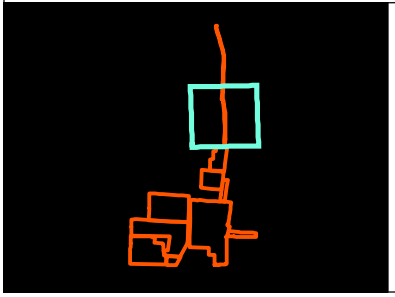
First Solar Ridgely

Vegetation Assemblages within the Proejct Area
Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (5)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



- Vegetation Points
- Excluded Parcels
- Project Boundaries
- T-Line 50ft Buffer

Vegetation Communities

- Cultivated Crops
- Deciduous Forest
- Developed, High Intensity
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Open Water
- Scrub/Shrub
- Woody Wetlands

N

0 300 600 1,200

Feet

[redacted]

First Solar Ridgely

Vegetation Assemblages within the Proejct Area

Figure 3-1

Date:	Project No:	Page No:
June 2020	E318201608	**3-1 (6)**

Date Created: 8/12/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_VEG CLASS SURVEY MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

3.2 Wildlife Communities

Wildlife species likely to occur in the forest, field, and transitional ecotone habitats of the Project are those typically found in similar habitats across the state. Mammals likely to occur include the white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), white-footed mouse (*Peromyscus leucopus*), woodland vole (*Microtus pinetorum*), short-tailed shrew (*Blarina brevicauda*), and cotton mouse (*Peromyscus gossypinus*).

Birds likely to occur in the habitats of the Project include perching birds, birds of prey, game birds, and wading birds. Perching birds that commonly occur in these habitat types include the American crow (*Corvus brachyrhynchos*), northern cardinal (*Cardinalis cardinalis*), tufted titmouse (*Baeolophus bicolor*), brown thrasher (*Toxostoma rufum*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), chipping sparrow (*Spizella passerina*), and Carolina wren (*Thryothorus ludovicianus*). Birds of prey expected in these habitats include the red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and turkey vulture (*Cathartes aura*). Game birds likely to occur include the wild turkey (*Meleagris gallopavo*), bobwhite (*Colinus virginianus*), and mourning dove (*Zenaida macroura*). Wading birds likely to utilize riparian, pond, and wetland habitats of the Project include the green heron (*Butorides virescens*) and great blue heron (*Ardea herodias*).

Reptiles and amphibians likely to occur in the Project include the box turtle (*Terrapene carolina*), eastern garter snake (*Thamnophis sirtalis*), timber rattlesnake (*Croatus horridus*), black racer (*Coluber constrictor*), fence lizard (*Sceloporus undulatus*), upland chorus frog (*Pseudacris triseriata feriarum*), and American toad (*Bufo americanus*).

Many of these species are most likely to be found in relatively undisturbed areas of upland and riparian forest on the Project. However, the majority of the Project is actively farmed, so overall species diversity is expected to be relatively low, and most species present are widespread in their occurrence, adapted to open field and edge habitats, and relatively common in the region. During the winter, the agricultural fields are likely to be used by waterfowl and other birds feeding on crop residues. The ponds in the Project area also may be used by waterfowl in the winter, as well as reptiles and amphibians year-round.

3.3 Land Use

The land located within and in proximity to the Project is rural, consisting of mostly agricultural use and with some scattered residential development. The current land use at the Project site is agricultural and residential. There are seven natural areas within 10 miles of the project area. Lake Isom National Wildlife Refuge is .97 miles east of the easternmost portion of the project site. Reelfoot Lake State Park lies 2.68 miles northeast of the northeastern most portion of the project site. Girvin Conservation Area is 3.91 miles northwest of the project area. Reelfoot State Wildlife Management Area is 4.36 miles northeast of the project area. Reelfoot National Wildlife Refuge is 8.74 miles to northeast of the project site. Gayoso Bend Conservation Area lies 8.81 miles southwest of the project site and Black Island Conservation Area is 9.50 miles west of the project site.

3.4 Soil Series

Soils within the Project can be generally described as poorly drained to somewhat poorly drained soils that occur on floodplains, back swamps, natural levees and loess hills. According to the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) website (Soil Survey Staff, 2020), the Project is located within 12 soil map units, which are listed below (**Table 3-1 & Figure 3-2**). Six (6) of the map units within the Project area meet the criteria as described by the National Technical Committee for Hydric Soils (NTCHS).

It should also be noted that caution must be used when comparing the list of hydric components to soil survey maps. Many of the soils on the list have ranges in water table depths that allow the soil component to range from hydric to non-hydric depending on the location of the soil within the landscape as described in the map unit. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during onsite investigations.

Table 3-1 Characteristics of Soil Mapping Units within the Project Area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
Adler silt loam	Ad	Moderately well drained	Moderately High to High	N/A	No	7.69
Bowdre silty clay	Bo	Somewhat poorly drained	Moderately low to moderately high	N/A	No	6.15
Bruno soils and alluvial land	Bu	Excessively drained	High to very high	N/A	Yes	7.69
Commerce silt loam	Cm	Somewhat poorly drained	Moderately high	N/A	No	11.54
Iberia silt loam, 0 to 2 percent slopes	Ib	Poorly drained	Very low to moderately low	N/A	Yes	10.77
Iberia silty clay loam	Ie	Poorly drained	Very low to moderately low	N/A	Yes	15.38

Table 3-1 Characteristics of Soil Mapping Units within the Project Area

Soil Name	Soil Symbol	Drainage Class	Permeability	Surface Runoff	Meets Hydric Criteria	% of Project Area
Reelfoot silt loam	Re	Somewhat poorly drained	Moderately high to high	N/A	No	12.31
Reelfoot silty clay loam	Rf	Somewhat poorly drained	Moderately high to high	N/A	Yes	5.38
Sharkey clay, 0 to 1 percent slopes, occasionally flooded	Sa	Poorly drained	Very low to moderately low	High	Yes	8.46
Tiptonville silt loam	Ta	Moderately well drained	Moderately high to high	N/A	No	5.38
Tunica clay (flooded)	Tc	Poorly drained	Very low to moderately low	N/A	Yes	1.54
Worthen silt loam	Wo	Well drained	Moderately high to high	N/A	No	7.69

Source: Soil Survey Staff, 2020

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (1)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (2)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (3)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

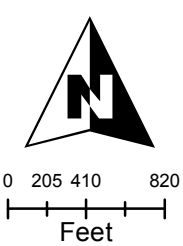
Data Source: Basemap: Bing Maps Aerial (2020)

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria



[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (4)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (5)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

Study A
Study B
Study C
Study D
Study E

Soil Map Units

Does Not Meet Hydric Criteria

Meets Hydric Criteria

N

0 205 410 820

Feet

[redacted]

First Solar Ridgely

Soils Within the Project Area

Date:	Project No:	Figure No:
August 2020	E318201608	**3-2 (6)**

Date Created: 8/13/2020 Date Revised: 8/13/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_SOILS MAP.mxd

GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

4 Assessment Methodology

Cardno conducted desktop reviews of the Project area utilizing local and federal GIS data to identify potential habitat for listed species, wetlands, hydric soils, floodplains, and cultural resources that could affect the Project development process.

Federal and state resources were reviewed as a precursor to field site assessments, to identify potential habitat that may be found for listed species in the Project area. Results of the threatened and endangered species review are provided in **Section 5.1.**

4.1 WOUS Delineation

The delineation of WOUS, including wetlands was conducted during five site visits to different portions of the Project from July 2016 to August 2020. Cardno scientists performed all wetland delineation surveys in accordance with the USACE Wetland Delineation Manual (USACE Manual; Environmental Laboratory 1987) in conjunction with the Atlantic and Gulf Coastal Plain Regional Supplement to the USACE Delineation Manual (USACE 2010). Cardno also completed TVA rapid assessment datasheets (**Appendix E**) on all wetlands and classified them based on function and value in compliance with Executive Order 11990 – Protection of Wetlands. Streams were also classified and Cardno scientists completed TVA hydrologic determination field data sheets (**Appendix G**). The results of the delineation are provided in **Sections 5.2 and 5.3**.

Wetlands are collectively defined by the USACE (Environmental Laboratory 1987) and the U.S. Environmental Protection Agency (EPA; Federal Register 1980) as those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. An area is a wetland if it meets the wetland hydrology, hydrophytic vegetation, and hydric soil criteria established in the USACE Manual.

Cardno scientists collected all pertinent field data information on USACE Atlantic and Gulf Coastal Plain wetland forms (**Appendix A**).

Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Dominant vegetation was identified and categorized in accordance with the regional indicator status in the national list of plant species that occur in wetlands (Lichvar et. al. 2016). The indicator status of a plant species is expressed in terms of the estimated probability of that species to occur in wetland conditions within a given region. **Table 4-1** lists the plant indicator status categories. A vegetative community would be determined to be hydrophytic if more than 50 percent of the dominant species present were FAC, FACW, or OBL.

Wetland Hydrology

Wetland hydrology includes all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively (Environmental Laboratory 1987).

Table 4-1 Plant Indicator Status Categories

Category	Indicator	Frequency of Occurrence in Wetlands (percent)
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands. Examples: *Carya aquatica, Persicarian punctata*.
Facultative Wetland Plants	FACW	Plants that occur usually (estimated probability 67-99%) in wetlands, but also occurring in both wetlands and non-wetlands. Examples: *Spartina patens; Panicum dichotomiflrum*.
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability of 33-67%) of occurring in both wetlands and non-wetlands. Examples: *Stenotaphrum secundatum; Rumex cripsus*.
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1-33%) in wetlands, but occur more often (estimated probability 67-99%) in non-wetlands. Examples: *Cirsium vulgare; Rubus trivialis.*
Obligate Upland Plants	UPL	Plants that occur rarely (estimated probability <1%) in wetlands, but almost always (>99% estimated probability) in non-wetlands. Examples: *Geranium carolinianum.*

Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper stratum. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, and are used to differentiate hydric from non-hydric soils (Environmental Laboratory 1987).

At each recorded data point, a pit up to 20-inches deep was excavated for evaluation. Soils were surveyed for horizon profile, matrix, value, chroma, texture, and concretions.

Hydric soils were determined to be present if one primary hydric soil indicator was present. Background soils information of the Project area was obtained from the USDA NRCS Web Soil Survey.

4.2 Mapping

All wetlands and other water features were recorded using a sub-meter Global Positioning System (GPS) device. The GPS was programmed to record points with a minimum of four satellites and a Position Dilution of Precision (PDOP) value no greater than 6.0. Water features were delineated by collecting GPS points along the perimeter of the wetland or ordinary high water mark with suitable frequency to represent the feature within the Project area.

4.3 Photographs

Photographs are the visual documentation of site conditions as they existed during the field survey. Representative photos were taken at wetland and upland areas. For all other features, a minimum of one photo was taken, unless the area was large and required additional representation. The photographic log is provided in **Appendix B.**

5 Results of Findings

5.1 Threatened and Endangered Species Review

Cardno conducted desktop environmental assessments for listed species within the Project area. **Table 5-1** and **Appendix F** lists the species that were identified by the USFWS IPaC database, TVA Natural Heritage Database, and the TDEC as having the potential to occur within or be affected by the Project. Species included in **Table 5-1,** acquired from the TVA Database, were included using a buffer from the Project boundary that included ten-miles for aquatic species, five-miles for plant species, and terrestrial species within three miles of the Project.

Table 5-1 IPaC Federally Listed Species, TDEC, and TVA Natural Heritage Database T&E Listed Species Potentially Affected by Project

Group	Common Name	Scientific Name	Habitat	Likelihood of Occurrence	Federal Status	State Status
Mammals	Indiana bat [2]	*Myotis sodalis*	Caves and mines during winter; large trees with exfoliating bark near riparian areas in summer.	Moderate	E	E
	Northern long-eared bat [2]	*Myotis septentrionalis*	Caves and mines during winter; large trees with exfoliating bark near riparian areas in summer.	Low	T	T
	Eastern Woodrat [4]	*Neotoma floridana*	Occurs in forested areas, but also uses caves and rocky outcrops.	Low	-	D
Birds	Bald Eagle [1, 3, 4]	*Haliaeetus leucocephalus*	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.	None	-	D
	Bewick's Wren [3]	*Thryomanes bewickii*	Brushy areas, thickets and scrub in open country, open and riparian woodland.	Moderate	-	D
	Least Bittern [3]	*Ixobrychus exilis*	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.	Low	-	D
	Interior Least Tern [1 ,2, 3, 4]	*Sternula antillarum athalass*	Mississippi River sand bars & islands, dikes.	None	E	E
	Swainson's Warbler [3]	*Limnotlypis swainsonii*	Mature, rich, damp, deciduous floodplain and swamp forests.	None	-	D
Fish	Alligator Gar [1, 3]	*Atractosteus spatula*	Sluggish pools of large rivers, oxbows, swamps, and backwaters; west Tennessee.	None	-	D
	Pallid Sturgeon [1 ,2 ,3, 4]	*Scaphirhynchus albus*	Large, turbid, free-flowing riverine habitat, in strong current over firm gravel or sandy substrates; Mississippi River main channel.	None	E	E
	Sicklefin Chub [3]	*Macrhybopsis meeki*	Main channel of the Mississippi River in swift currents over sand and gravel substrates.	None	-	D
	Golden Topminnow [1, 3]	*Fundulus chrysotus*	Swamps, backwaters, and pools of ditches and slow-moving creeks; Reelfoot Lake & imm. vicinity.	Low	-	D
	Blue Sucker [4]	*Cycleptus elongates*	Inhibits main stems of major rivers and lower sections of main tributaries throughout their range. They are well adapted to strong currents and are found within riffles and rapidly flowing chutes. Blue suckers require gravel or rock	None	-	T

Table 5-1 IPaC Federally Listed Species, TDEC, and TVA Natural Heritage Database T&E Listed Species Potentially Affected by Project

Group	Common Name	Scientific Name	Habitat	Likelihood of Occurrence	Federal Status	State Status
			bottoms with constantly flowing water that is relatively silt-free.			
Flowering Plants	Nuttall's Waterweed [3]	*Elodea muttalii*	Aquatic; Streams And Ponds	Moderate	-	S
	Blue Mud-plantain [1, 3]	*Heteranthera limosa*	Mud Flats	Moderate	-	T
	Bristly Sedge [3]	*Carex comosa*	Swamps	Moderate	-	T
	Yellow Water-crowfoot [3]	*Ranunculus flabellaris*	Ponds and marshes	Moderate	-	T
	Ovate-leaved Arrowhead [1, 3, 4]	*Sagittaria platyphylla*	Swamps, Emergent	Moderate	-	S
	Featherfoil [1, 3 ,4]	*Hottonia inflate*	Wet Sloughs And Ditches	Moderate	-	S
	Copper Iris [3]	*Iris fulva*	Bottomlands	Moderate	-	T
	Lake Cress [1, 3, 4]	*Neobeckia aquatic*	Gum Or Cypress Swamps	Moderate	-	S
	American Ginseng [4]	*Panax quinquefolius*	Often found on north or east facing hills, this plant requires deep, rich, well-drained soil with plenty of calcium and organic matter.	Low	-	S, CE
Mollusks	Striped Whitelip [3]	*Webbhelix multilineata*	Low wet habitats, marshes, floodplains, meadows; lake margins; under leaf litter or drift; Mississippi River floodplain.	Moderate	-	R
	Fatmucket [3]	*Lampsilis siliquoidea*	Slackwater with mud subst; Wolf R (Miss R trib); west TN; may occur at Reelfoot Lk; also rept Drakes Ck (Cumb R), Sumner Co.	Low	-	R
Reptiles	Mississippi Green Watersnake [1, 3, 4]	*Nerodia cyclopean*	Marshes, swamps, bayous, shallow lakes and ponds, wet prairies, oxbows and floodplain sloughs; far west Tennessee.	Moderate	-	D

[1] Indicates species which were identified from information provided by the TVA Regional Natural Heritage Database.
[2] Indicates species which were identified from information provided by the USFWS IPaC Database.
[3] Indicates species which were identified from information provided by the Tennessee Department of Environment and Conservation
[4] Indicates species which were identified from information provided by the TVA Regional Heritage County List

S – Special Concern, D – Deemed in Need of Management, R-Rare, Not State Listed, E-Endangered, T-Threatened, CE-Commercially Exploited

Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's wren, Least Bittern, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the TDEC species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American ginseng, and Lake Cress. The Bewick's wren occupies brush thickets and scrub that are found in open country and riparian woodlands. The Least Bittern, Striped whitelip, Mississippi Green Snake, and listed plant species are known to occur in streams, ponds, marshes, swamps, or bottomlands, thus limiting their potential suitable habitat to wetlands and waterbodies within the Project area. The eastern woodrat would be limited to the small and fragmented forested areas within the Project area. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to Northern Long-eared Bat) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas; however, scattered large diameter trees with crevices do exist sporadically in the small patches of forest within the facility footprint. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the small patches of forested riparian areas (less than 10-acres) and the distance to current summer and winter grounds, the Project is not likely to adversely affect the NLEB or Indiana bat. Further, no forested areas will be impacted outside of individual trees along existing fencerows. Though Cardno scientists did not conduct 'in water'

existing fencerows. Though Cardno scientists did not conduct 'in water' surveys, no mussel relics were identified along their stream banks. Although the portions of Blue Bank Bayou that flow through the Project area may contain suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project.

5.2 Wetlands

Vegetation Community Types

Cardno scientists identified two types of wetland vegetative communities within the Project area: herbaceous wetland and forested wetland. Community identification was based on soils, hydrology, and an emphasis on dominant vegetation. **Appendix A** provides datasheets which include survey point-specific vegetative community species data.

Hydrology

The entire Project area is relatively well drained by overland flow, drainages, and culverts which lead to deeply cut roadside ditches or Blue Bank Bayou. Many ag-field drainages were identified by a review of aerial imagery. Cardno scientists inspected these drainages at the time of the onsite investigation, and determined them to be ephemeral in nature.

Soils

Soils were delineated with the X-Rite Munsell M50215B Soil Book of Color, and exhibited a hue, lightness, and chroma ranging from 10 YR (3/1) to 10YR (5/3) throughout the Project area. The datasheets presented in **Appendix A** provide soils color data for each soil pit.

5.2.1 Parcels

Cardno scientists investigated the entire Project for wetlands that exhibited the three USACE criteria (hydrophytic vegetation, wetland hydrology, and hydric soils). Cardno's onsite investigations identified **15** wetlands (**Table 5-2**) totaling **43.48** acres. Unconsolidated bottom, herbaceous, and forested wetlands were observed within the Project.

Table 5-2 Delineated Wetlands Ridgely Properties

Wetland ID	Type	Acreage	Potentially Jurisdictional	TVA Ram Category
WET-B-1	PEM	0.44	Yes	1
WET-C-1	PFO	0.02	No	1
WET-C-2	PFO	3.37	No	2
WET-C-3	PEM	0.13	No	2
WET-C-4	PFO	11.91	No	2
WET-C-5	PUB	0.21	No	-
WET-C-6	PEM	0.19	No	1
WET-C-7	PFO	1.50	No	2
WET-C-8	PFO	0.58	No	2
WET-C-9	PEM	0.10	No	1
WET-C-10	PEM	0.04	No	1

Table 5-2 Delineated Wetlands Ridgely Properties

Wetland ID	Type	Acreage	Potentially Jurisdictional	TVA Ram Category
WET-C-11	PEM	0.07	No	1
WET-C-12	PEM	0.03	No	1
WET-D-1	PFO	1.52	Yes	3
WET-D-2	PEM	23.38	No	1
Total		**43.48**		
Total Non-jurisdictional		**41.52**		
Total Jurisdictional		**1.96**		

5.2.2 TVA TLine

Cardno scientists investigated the TVA TLine in August 2020 for wetlands that exhibited the three USACE criteria (hydrophytic vegetation, wetland hydrology and hydric soils). Cardno's onsite investigations identified **six** wetlands (**Table 5-3**) totaling **1.07** acres. Only herbaceous and ponded PUB(x) wetlands were identified within the TVA TLine ROW.

Table 5-3 Delineated Wetlands TVA Transmission Line

Wetland ID	Type	Acreage	Jurisdictional	TVA Ram Category
WET-E-1	PEM	0.30	No	1
WET-E-2	PEM	0.25	No	1
WET-E-3	PEM	0.18	Yes	1
WET-E-4	PEM	0.05	Yes	1
WET-E-5	PEM	0.28	No	1
WET-E-6	PUB(x)	0.01	No	-
Total		**1.07**		
Total Non-jurisdictional		**0.84**		
Total Jurisdictional		**0.23**		

5.3 Waterbodies

5.3.1 Parcels

Twenty-four ephemeral drainages, **one** intermittent stream, **one** perennial stream, and **one** ponded area (recorded as PUB(x) wetlands above) were identified to be located within the Project boundaries (Table 5-4) (**Appendix C**).

Road construction and placement of 36" culverts caused the rerouting of Blue Bank Bayou where it intersects Ray Shelton Road, east of Mooring Road. The bayou now flows adjacent to the road via a roadside ditch then re-connects with the perennial channel in the NW section/road crossing and continues towards Reelfoot Lake. The remnant Blue Bank Bayou that was cut-off by the reroute was determined to be a WWC and is within an agriculture field that is actively farmed.

Table 5-4 Delineated Streams (Parcels)

Stream ID	Flow Type	Stream Length (ft)	Water Depth (In.)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)	TVA/TDEC Hydrologic Determination
S-A-1	Ephemeral	2204.91	0	1.5	Organic	No	WWC
S-A-2	Ephemeral	2326.17	0	2	Organic	No	WWC
S-A-3	Ephemeral	4249.47	0	1.5	Organic	No	WWC
S-A-4	Ephemeral	3108.14	0	1.5	Organic	No	WWC
S-A-5	Ephemeral	1387.10	0	1.5	Organic	No	WWC
S-B-1-A	Intermittent	799.27	0	3	Organic	Yes	Stream
S-B-1-B	Ephemeral	3626.51	0	3	Organic	No	WWC
S-B-2	Ephemeral	2034.47	0	2.5	Organic	No	WWC
S-B-3	Ephemeral	682.78	0	2	Organic	No	WWC
S-C-1	Ephemeral	2057.52	0	5	Organic	No	WWC
S-C-2	Ephemeral	498.33	0	3	Organic	No	WWC
S-C-3	Ephemeral	1026.20	0	0.5	Organic	No	WWC
S-C-4	Ephemeral	761.39	5	3	Organic	No	WWC
S-C-5	Ephemeral	1106.07	0	0.5	Organic	No	WWC
S-C-6	Ephemeral	670.30	0	0.5	Organic	No	WWC
S-C-7	Ephemeral	701.54	0	0.5	Organic	No	WWC
S-C-8	Ephemeral	1216.49	0	0.5	Organic	No	WWC
S-C-9	Ephemeral	116.01	0	0.5	Organic	No	WWC
S-D-1	Ephemeral	649.23	2	5	Organic	No	WWC
S-D-2 (Blue Bank Bayou)	Perennial	3505.05	10	6	Organic	Yes	Stream
S-D-3	Ephemeral	4621.98	2	3	Organic	No	WWC
S-D-4	Ephemeral	1483.61	3	3	Organic	No	WWC
S-D-5	Ephemeral	3185.35	0	3	Organic	No	WWC
S-D-6	Ephemeral	1183.66	0	3	Organic	No	WWC
S-D-7	Ephemeral	1810.63	0	3	Organic	No	WWC
S-D-8	Ephemeral	1378.02	0	3	Organic	No	WWC
Total		**46,390.19**					
Total Non-jurisdictional		**42,085.87**					

Table 5-4 Delineated Streams (Parcels)

Stream ID	Flow Type	Stream Length (ft)	Water Depth (In.)	Width at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)	TVA/TDEC Hydrologic Determination
Total Jurisdictional		**4,304.32**					

5.3.2 TVA TLine

One ephemeral drainage, **two** perennial streams, and **one** ponded area (recorded as PUB(x) wetlands above) were identified to be located within the TVA TLINE ROW (Table 5-5) (**Appendix C**).

Table 5-5 Delineated Streams (TVA TLine)

Stream ID	Flow Type	Length within ROW (ft)	Water Depth (In.)	Top of Bank at Bankfull (ft)	Substrate	Potentially Jurisdictional (USACE)	TVA/TDEC Hydrologic Determination
S-E-1	Perennial	110.96	12	10	Unconsolidated	Yes	Not Scored – No impacts Anticipated
S-E-2	Ephemeral	126.19	3	4	Unconsolidated	No	
S-E-3	Perennial	109.19	12	9	Unconsolidated	Yes	
Total		**346.34**					
Total Non-jurisdictional		**126.19**					
Total Jurisdictional		**220.15**					

5.4 Jurisdictional Summary

Cardno scientists identified **25** ephemeral drainages, **one** intermittent stream**, three** perennial streams, and **21** wetlands, including twos excavated ponded areas within the Project area. From the field investigation, it was determined that **four** of the identified streams, as well as **four** of the identified wetlands (Wed-B-1, Wet-D-1, Wet-E-3, and Wet-E-4) may possess a hydrological connection to Blue Bank Bayou or the Mississippi River. Stream segment S-B-1a flows into Blue Bank Bayou (S-D-2), which in addition to streams S-E-1 and S-E-3, flows to the Mississippi River, a TNW. Therefore, it is Cardno's opinion that these delineated streams and associated wetlands may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did not exhibit flow during field investigations, and 18 of the identified wetlands, including the excavated ponds appeared to be isolated in nature. It is Cardno's opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance. Cardno completed this wetland and stream assessment under the rules and guidelines defined in the Navigable Waters Protection Rule published on April 21, 2020 and in effect on June 22, 2020. Our classification of streams and adjacent wetlands are classified accordingly, to the best of our understanding of normal hydraulic conditions at the property under review.

6 Conclusion and Recommendations

Cardno reviewed current and historic mapping, as well as local, state, and federal GIS data layers as part of a desktop investigation during its environmental assessment. No significant concerns were identified onsite that would affect construction of the proposed Project.

Cardno conducted a threatened and endangered species review during desktop environmental assessments of the Project area. There are three mammal species, five bird species, five fish species, nine flowering plant species, one snail species, one freshwater mussel species, and one reptile species listed by the USFWSb IPaC, the TDEC, and/or the TVA Natural Heritage Database as having the potential to occur within or be affected by the Project. No designated critical habitat for listed species exists within the Project area. Cardno inspected all habitats within the Project area for the presence of suitable habitat for listed species. Potential habitat exists onsite for the Bewick's Wren, Least Bittern, Striped whitelip (snail), Mississippi green water snake, and the following flowering plant species that are listed on the TDEC) species list: Nutall's Waterweed, Blue Mud-plantain, Bristly Sedge, Yellow Water-crowfoot, Ovate-leaved Arrowhead, Featherfoil, Copper Iris, American Ginseng, and Lake Cress. The Bewick's Wren occupies brush thickets and scrub that are found in open country and riparian woodlands. The Least bittern, Striped whitelip, Mississippi Green Snake, and listed plant species are known to occur in streams, ponds, marshes, swamps, or bottomlands, thus limiting their potential suitable habitat to wetlands and waterbodies within the Project area. The eastern woodrat would be limited to the small and fragmented forested areas within the Project area. Cardno scientists investigated the area for bat habitat as defined in USFWS 2018 Range-wide Indiana Bat Summer Survey Guidelines (also applicable to NLEB) during field site assessments. No potential roosting trees (trees with loose bark or hollows) were identified in the wooded areas. Although the federally listed threatened NLEB is listed to occur within Lake County, its current and historic ranges are approximately 100-miles east of the Project site. Due to the unimpacted small patches of forested riparian areas and the distance to current summer and winter grounds, it is highly unlikely that the NLEB would be impacted by this Project. Though Cardno scientists did not conduct 'in water' surveys, no mussel relics were identified along their stream banks. Although the portions of Blue Bank Bayou that flow through the Project area may contain suitable habitat for listed fish and freshwater mussel species, impacts to the Bayou are not anticipated as a result of the Project. Migratory bird nesting surveys are recommended if construction will occur during the nesting season and if scrub/shrub and trees will be cleared as part of the Project.

Impacts to streams or wetlands within the Project area may require an Aquatic Resource Alteration Permit (ARAP) or a Section 401 Water Quality Certification from the Tennessee Division of Water Resources. In compliance with Section 404 of the CWA, this report contains a delineation of potential WOUS that may fall under the jurisdiction of the USACE. Field delineations were conducted during five site visits to different portions of the Project area from July 2016 to August 2020, in which all potentially jurisdictional waters within the Project area were mapped and characterized.

Cardno scientists identified **25** ephemeral drainages, **one** intermittent stream, **three** perennial streams, and **21** wetlands, including two excavated ponded areas within the Project area. From the field investigation, it was determined that **four** of the identified streams, as well as **four** of the identified wetlands (Wet-B-1, Wet-D-1, Wet-E-3, and Wet-E-4) may possess a hydrological connection to Blue Bank Bayou or the Mississippi River. Stream segment S-B-1a flows into Blue Bank Bayou (S-D-2), which in addition to streams S-E-1 and S-E-3 flows to the Mississippi River, a TNW. Therefore, it is Cardno's opinion that these delineated streams and associated wetlands may likely be classified as jurisdictional under USACE guidance. Therefore, it is Cardno's opinion that the delineated stream and wetland may likely be classified as jurisdictional under USACE guidance. The ephemeral streams did not exhibit flow during field investigations, and 14 of the identified wetlands, including the excavated ponded area appeared to be isolated in nature. It is Cardno's

opinion that these drainages/streams and wetlands lack adequate connectivity to a TNW, and would most likely be classified as non-jurisdictional under USACE guidance.

Because only the USACE may issue determinations on the jurisdictional status of the streams and wetlands identified within the Project, Cardno recommends avoiding these resources to the greatest extent practicable during initial design phases, until a jurisdictional determination has been issued by the USACE Memphis District. If any of the identified streams or wetlands are deemed jurisdictional by the USACE, the Project may proceed under a NWP 51. Nationwide 51 requires a pre-construction notification to the USACE and allows for construction, expansion or modification of land-based renewable energy production facilities, including attendant features. Utility lines transferring energy to a distribution system, regional grid, or other facility are generally considered to be separate single and complete linear projects. If the only activity requiring USACE authorization is the construction of a utility line (water or electric), then a NWP 12 may be used. As stated in the text of the NWPs, the discharge of dredged or fill material into wetlands and non-tidal WOUS must not cause the loss of greater than ½-acre of wetlands and non-tidal WOUS, including the loss of no more than 300 linear feet of stream bed. Permanent impacts which exceed the ½-acre threshold for NWPs will require an Individual Permit.

7 References

Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Federal Register. 1980. 40 CFR Part 230: Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, Vol. 45, No. 249, pp. 85352-85353, U.S. Government Printing Office.

Griffith, G.E., Omernik, J.M., Comstock, J.A., Lawrence, S., Martin, G., Goddard, A., Hulcher, V.J., and Foster, T., 2001, Ecoregions of Tennessee and Georgia, (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,700,000).

F Grossman, D. H., D. Faber-Langendoen, A. S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume I. The National Vegetation Classification System: development, status, and applications. The Nature Conservancy, Arlington, Virginia, USA

Leverett, R.T. 1996. Definitions and history. Pp. 3-17, In M.B. Davis (Ed.). Easter Old Growth Forests: Prospects for Rediscovery and Recovery. Island Press, Washington, DC.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

Soil Survey Staff, 2020. Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 2020.

TDEC (Tennessee Department of Environment and Conservation). 2020. Natural Heritage Program. Rare Species by County: Lake County, TN. Accessed May 2020.

TVA (Tennessee Valley Authority). 2020. Regional Natural Heritage Database.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J. F. Berkowitz, J.S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Fish & Wildlife Service (USFWS) IPaC Trust Resources Report (generated May 2020)

First Solar – Ridgely
Natural Resources Report

APPENDIX A

WETLAND DETERMINATION DATASHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 7/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-1

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.307603 Long: -89.47227 Datum: WGS 1984

Soil Map Unit Name: Iberia silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Mowed area on side of road

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1.			
2. Paspalum notatum	90		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 4/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 7/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-2

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.30755 Long: -89.472236 Datum: WGS 1984

Soil Map Unit Name: Iberia silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

This water body is Blue Bank Bayou. It supports a buffer of hydric vegetation, with ag field to the south, and mowed road ROW to the north.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 1

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Equisetum hyemale	50		FACW
2. Setaria pumila	10		FAC
3. Persicaria maculosa	15		FACW
4. Althaea officinalis	15		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☑ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-A-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/1	100	10 YR 4/4	10	C		Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 6/27/2016

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-A-3

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range: 33, 03S, 13W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 0

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.297532 Long: -89.465216 Datum: WGS 1984

Soil Map Unit Name: Iberia silty clay loam NWI classification: PFO-3

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

NWI dataset shows PFO, currently ag field. Historical aerial imagery does not reveal any forested area in the last decade.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-A-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis occidentalis	40	Yes	FACU
2. Carya tomentosa	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1. Toxicodendron radicans	20	Yes	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .333 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	90	x 4 =	360
UPL species		x 5 =	
Column Totals:	110 (A)		420 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below). all ag field; tree species were taken at adjacent property off site.

SOIL

Sampling Point: DP-A-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/13/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-1

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.282881 Long: -89.487336 Datum: WGS 1984

Soil Map Unit Name: Ad NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Tilled field, depression with hydric soils. Planted with soy.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Glysine max	100	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	75	10YR 3/6	25	R	M	Clay	
4-8	10YR 3/2	75	10YR 3/6	25	R	M	Sandy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Active ag soil

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-2

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.299845 Long: -89.496762 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

historical drainage of Blue Bayou

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Cinna arundinacea	20	Yes	FACW
2. Carex spp	20	Yes	FAC
3. Cyperus esculentus	20	Yes	FAC
4. Althaea officinalis	15	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 = Total Cover		

50% of total cover: 37.5 20% of total cover: 15

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	60	5YR 4/6	40	C	M	Sandy clay	
4-12	10YR 4/2	75	5YR 4/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-3

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.299502 Long: -89.496397 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historical drainage of Blue Bayou

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Equisetum hyemale	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	60	5YR 4/6	40	C	M	Sandy clay	
4-12	10YR 4/2	75	5YR 4/6	15	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-4

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.298897 Long: -89.495739 Datum: WGS 1984

Soil Map Unit Name: Bo NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland buffer between planted soy and Blue Bank Bayou riparian area.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size:)			
1. Sorghum halepense	40	Yes	FACU
2. ambrosia artemisiifolia	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	75	10YR 4/6	15	R	M	Loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties City/County: Lake County Sampling Date: 9/14/16

Applicant/Owner: First Solar, Dev., LLC State: TN Sampling Point: DP-B-5

Investigator(s): Sam Waltman, Jonathan Hess Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): Southern Mississippi River Alluvium (131A) Lat: 36.294182 Long: -89.488929 Datum: WGS 1984

Soil Map Unit Name: Cm NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Ephemeral ag drainage, planted soy growing, no defined bank-edges.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 4

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: DP-B-5

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

= Total Cover

50% of total cover: 20% of total cover:

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

= Total Cover

50% of total cover: 20% of total cover:

Herb Stratum (Plot size:)			
1. Glysine max (planted soy)	100	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

= Total Cover

50% of total cover: 20% of total cover:

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			

= Total Cover

50% of total cover: 20% of total cover:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	0	x 3 =	
FACU species	0	x 4 =	
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: DP-B-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	85	10YR 4/6	15	R		Silty loam	
	10YR 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-1
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.306727 | Long: -89.463833 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
Hydrophytic vegetation was observed; however, wetland hydrology and hydric soil indicators were not. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-1

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Sambucus nigra*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Leersia hexandra*	30	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	30	x 1 =	30
FACW Species	30	x 2 =	60
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	60 (A)		90 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Colbert | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Alabama | Sampling Point: DP-C-2
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.306272 | Long: -89.463921 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-2

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	75	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	70	Yes	FACU
2. *Rubus occidentalis*	20	Yes	
3.			
4.			
5.			
6.			
	90	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	145	x 4 =	580
UPL Species	0	x 5 =	0
Column Totals:	145 (A)		580 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-3
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 10
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.305311 | Long: -89.462189 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-3

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	60	Yes	FACU
2. *Ulmus americana*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Rhus copallinum*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1. *Solidago altissima*	40	Yes	FACU
2. *Portulaca oleracea*	20	Yes	FACU
3. *Rubus occidentalis*	10	No	
4. *Sambucus nigra*	10	No	FACW
5. *Rumex crispus*	10	No	FAC
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 20% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10	x 2 =	20
FAC Species	40	x 3 =	120
FACU Species	120	x 4 =	480
UPL Species	15	x 5 =	75
Column Totals:	185 (A)		695 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	9-Apr	10YR 4/6	2	R	M	Silty Loam	
5-16	10YR 4/2	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☑ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-4
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 10
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.305147 | Long: -89.462195 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-4

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	60	Yes	FACU
2. *Ulmus americana*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Rhus copallinum*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1. *Solidago altissima*	40	Yes	FACU
2. *Portulaca oleracea*	20	Yes	FACU
3. *Rubus occidentalis*	10	No	
4. *Sambucus nigra*	10	No	FACW
5. *Rumex crispus*	10	No	FAC
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 20% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10	x 2 =	20
FAC Species	40	x 3 =	120
FACU Species	120	x 4 =	480
UPL Species	15	x 5 =	75
Column Totals:	185 (A)		695 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	9-Apr	10YR 4/6	2	R	M	Silty Loam	
5-16	10YR 4/2	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☑ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-5
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Convex | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.304638 | Long: -89.464147 | Datum: WGS 1984
Soil Map Unit Name: Worthen silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Yes ☐ No Hydric Soils Present? ☑ Yes ☐ No Wetland Hydrology Present? ☑ Yes ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-5

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	75	x 3 =	225
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	75 (A)		225 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ **No:** ☐

Remarks: (if observed, list morphological adaptations below).

SOIL Sampling Point: DP-C-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	10YR 3/6	5	R	M	Loamy Clay	
6-16	10YR 6/1	100	10YR 4/6	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-6
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.304533 | Long: -89.464074 | Datum: WGS 1984
Soil Map Unit Name: Commerce silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-6

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	10	x 3 =	30
FACU Species	90	x 4 =	360
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		390 (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-7
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.302970 | Long: -89.464390 | Datum: WGS 1984
Soil Map Unit Name: Commerce silt loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
Hydrophytic vegetation was observed; however, wetland hydrology and hydric soil indicators were not. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-7

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Quercus nigra*	30	Yes	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Celtis laevigata*	15	Yes	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling Stratum (Plot size : 30)			
1. *Cornus florida*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 60% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	15	x 2 =	30
FAC Species	60	x 3 =	180
FACU Species	105	x 4 =	420
UPL Species	0	x 5 =	0
Column Totals:	180 (A)		630 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-8
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.302076 | Long: -89.463971 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1A

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-8

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2. *Ulmus americana*	20	Yes	FAC
3. *Acer negundo*	10	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	80	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	130	x 2 =	260
FAC Species	30	x 3 =	90
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	160 (A)		350 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-9
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.301993 | Long: -89.464511 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-9

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size : 30)			
1. *Rubus occidentalis*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Lonicera canadensis*	90	Yes	FACU
2. *Vitis rotundifolia*	10	No	FAC
3.			
4.			
5.			
6.			
	100	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	10	x 3 =	30
FACU Species	90	x 4 =	360
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		390 (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-10
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297765 | Long: -89.465043 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-10

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	100	x 2 =	200
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Colbert | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Alabama | Sampling Point: DP-C-11
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297303 | Long: -89.465133 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Yes ☐ No Wetland Hydrology Present? ☑ Yes ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-11

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Celtis laevigata*	50	Yes	FACW
2. *Quercus nigra*	20	Yes	FAC
3. *Fraxinus pennsylvanica*			FACW
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 67% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	50	x 2 =	100
FAC Species	20	x 3 =	60
FACU Species	10	x 4 =	40
UPL Species	0	x 5 =	0
Column Totals:	80 (A)		200 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ **No:** ☐

Remarks: (if observed, list morphological adaptations below).

SOIL Sampling Point: DP-C-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-12
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.297109 | Long: -89.464344 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☑ Water Marks
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-12

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Taxodium distichum*	40	Yes	OBL
2. *Fraxinus pennsylvanica*	30	Yes	FACW
3. *Liquidambar styraciflua*	20	Yes	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Carex grayi*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	40	x 1 =	40
FACW Species	40	x 2 =	80
FAC Species	20	x 3 =	60
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-13
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296392 | Long: -89.462128 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Ye ☐ No
Wetland Hydrology Present? ☑ Ye ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☑ Water Marks
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-13

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Ipomoea hederacea*	40	Yes	FACU
2. *Eleocharis parvula*	30	Yes	OBL
3. *Rumex crispus*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	30	x 1 =	30
FACW Species	0	x 2 =	0
FAC Species	5	x 3 =	15
FACU Species	40	x 4 =	160
UPL Species	0	x 5 =	0
Column Totals:	75 (A)		205 (B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

No — Dominance Test is >50%

Yes — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-14
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.295904 | Long: -89.462384 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Ye ☐ No	
Wetland Hydrology Present?	☑ Ye ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-14

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya illinoinensis*	30	Yes	FACU
2. *Celtis laevigata*	20	Yes	FACW
3. *Cornus drummondii*	20	Yes	FAC
4. *Ulmus americana*	20	Yes	FAC
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Parthenocissus quinquefolia*	40	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	40	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 60% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	20	x 2 =	40
FAC Species	40	x 3 =	120
FACU Species	70	x 4 =	280
UPL Species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

Yes — Dominance Test is >50%

No — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	80	10YR 5/8	20	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-15
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296110 | Long: -89.464448 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland. Soy bean field.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-15

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size : 30)			
1. *Glycine max*	100	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	100						

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-16
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.296679 | Long: -89.465263 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: PFO1C

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Yes ☐ No	
Wetland Hydrology Present?	☑ Yes ☐ No	

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-16

	Absolute % Cover	Dominant Species?	Indicator Status
Tree stratum (Plot size : 30)			
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-17
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292443 | Long: -89.468489 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-17

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:		(A)	(B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-18
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.294712 | Long: -89.465476 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☑ Ye ☐ No	Is the Sampled Area within the Wetland? Yes: ☑ No: ☐
Hydric Soils Present?	☑ Yes ☐ No	
Wetland Hydrology Present?	☑ Yes ☐ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-18

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-19
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293382 | Long: -89.465306 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-19

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	_____	(A)	_____ (B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-20
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293892 | Long: -89.465290 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Ye ☐ No
Wetland Hydrology Present? ☑ Ye ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-20

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	50	Yes	FAC
2. *Glycine max*	30	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	50	x 3 =	150
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	50	(A)	150 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-21
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Other | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293738 | Long: -89.465286 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Is the Sampled Area within the Wetland? Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:
Surface Water Present? ☐ Yes ☑ No Depth (Inches): ____
Water Table Present? ☐ Yes ☑ No Depth (Inches): ____
Saturation Present? ☐ Yes ☑ No Depth (Inches): ____
(includes capillary fringe)

Wetland Hydrology Present?: Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-21

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	60	Yes	FACW
2. *Celtis laevigata*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1. *Campsis radicans*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	90	x 2 =	180
FAC Species	60	x 3 =	180
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	150 (A)		360 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

Yes — Dominance Test is >50%

Yes — Prevalence Index is ≤3.0[1]

No — Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-22
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293892 | Long: -89.465290 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches):	
Water Table Present?	☐ Yes ☑ No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches):	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-22

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	50	Yes	FAC
2. *Glycine max*	30	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	50	x 3 =	150
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	50	(A)	150 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-23
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292001 | Long: -89.473297 | Datum: WGS 1984
Soil Map Unit Name: Reelfoot silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☑ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-23

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	40	x 3 =	120
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-24
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.292019 | Long: -89.473363 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☐ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present?	☐ Ye ☑ No	Is the Sampled Area within the Wetland? Yes: ☐ No: ☑
Hydric Soils Present?	☐ Yes ☑ No	
Wetland Hydrology Present?	☐ Yes ☑ No	

Remarks:
None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____

Wetland Hydrology Present?: Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is not met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-24

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Glycine max*	50	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That are OBL, FACW, or FAC: _____ (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	0	x 3 =	0
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:		(A)	(B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☐ No: ☑

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silty Loam	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☐ Yes ☑ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region - Version 2.0

Project Site: Ridgely Properties | City/ County: Lake | Sampling Date: 6/13/2018
Applicant/Owner: First Solar, Dev., LLC | State: Tennessee | Sampling Point: DP-C-25
Investigator(s): Justin Stelly, Sam Waltman | Section, Township, Range:
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Concave | Slope (%): 0
Subregion (LRRA or MLRA): Southern Mississippi River Alluvium | Lat: 36.293456 | Long: -89.462028 | Datum: WGS 1984
Soil Map Unit Name: Iberia silty clay loam | NWI Classification: Upland

Are climatic/hydrological conditions on the site typical for this time of year? ☑ Yes ☐ No (If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☑ No | Are "Normal Circumstances" Present? ☑ Yes ☑ No
Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☑ No | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? ☑ Ye ☐ No Hydric Soils Present? ☑ Ye ☐ No Wetland Hydrology Present? ☑ Ye ☐ No	Is the Sampled Area within the Wetland?	Yes: ☐ No: ☐

Remarks:
Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.

Habitat ID: | Habitat Type:

Hydrology

Wetland Hydrology Indicators:
Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water
- ☐ High Water Table
- ☐ Saturation
- ☐ Water Marks (B1)
- ☐ Sediment Deposits
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRRU)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizoshperes in Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soil (C6)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of tw o required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test
- ☐ Sphagnum moss (D8)

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth (Inches): ____	
Water Table Present?	☐ Yes ☑ No	Depth (Inches): ____	
Saturation Present? (includes capillary fringe)	☐ Yes ☑ No	Depth (Inches): ____	**Wetland Hydrology Present?:** Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The wetland hydrology parameter is met.

Vegetation - Use scientific names of plants.

Sampling Point: DP-C-25

Tree stratum (Plot size : 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Sapling Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum (Plot size : 30)			
1. *Cyperus esculentus*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size : 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (B/A)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	40	x 3 =	120
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	40 (A)		120 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

Yes Dominance Test is >50%

Yes Prevalence Index is ≤3.0[1]

No Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody Plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1m) in height.

Woody Vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes: ☑ No: ☐

Remarks: (if observed, list morphological adaptations below).

SOIL

Sampling Point: DP-C-25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/8	10	R	M	Loamy Clay	

[1]Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Mucky Presence (A8) (LRR P, T, U)
- ☐ 1 cm Muck (A9) (LLR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S,T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)

(MLRA 153B)

- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LLR T,
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present? ☑ Yes ☐ No

Remarks:

Indicators of hydric soils were observed; hydric soil parameter is met.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-1

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.299469 **Long.:** -89.481666 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-1

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1. Taxodium distichum	40	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Commelina virginica	100	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	40	x 1 =	40
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		240 (B)

Prevalence Index = B/A = 1.714

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	70	5YR 3/6	30	C	M	Silty Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-2

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.299405 **Long.:** -89.481547 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-2

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	80	x 5 =	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-3

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.304921 **Long.:** -89.49147 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

depression in ag field. Flows to nearby drainage.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-3

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	40	☑	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Eleocharis parvula	80	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		80 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/1	65	5YR	3/6	35	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-4

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.304328 **Long.:** -89.491474 **Datum:** WGS 1984

Soil Map Unit Name: Bo, Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	65	**x 4 =**	260	
UPL species	0	**x 5 =**	0	
Column Totals:	65	**(A)**	260	**(B)**

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-5

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Riparian Fringe **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307565 **Long.:** -89.487979 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

depression in ag field. Flows to nearby drainage.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-5

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	40	☑	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Eleocharis parvula	80	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	80	**(A)**	80	**(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/1	65	5YR	3/6	35	C	M	Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-6

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307933 **Long.:** -89.491772 **Datum:** WGS 1984

Soil Map Unit Name: Bo, Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
point near wooded levee. Confirmed No stream here.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-6

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-7

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.290268 **Long.:** -89.486387 **Datum:** WGS 1984

Soil Map Unit Name: Cm, Commerce silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-7

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	80	x 5 =	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

mostly dead corn. Some alive and rest bare ground.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-8

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.285465 **Long.:** -89.483352 **Datum:** WGS 1984

Soil Map Unit Name: Ad, Adler silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-8

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-9

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.288197 **Long.:** -89.466162 **Datum:** WGS 1984

Soil Map Unit Name: Wo, Worthen silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-9

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	30.8%	FACU
2. Allium vineale	5	☐	7.7%	FACU
3. Lolium perenne	40	☑	61.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	260	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-10

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.293163 **Long.:** -89.449848 **Datum:** WGS 1984

Soil Map Unit Name: Sa, Sharkey clay, 0 to 1 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-10

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	25	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 12.5	20% of Total Cover: 5	25	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	25	**x 5 =**	125	
Column Totals:	25	**(A)**	125	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 03-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-11

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.289646 **Long.:** -89.461367 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-11

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. **Triticum cylindricum**	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

all cultivated wheat.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-12

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.307291 **Long.:** -89.463822 **Datum:** WGS 1984

Soil Map Unit Name: Re, Reelfoot silt loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro. Corn Field

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-12

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	80	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	80	**x 5 =**	400	
Column Totals:	80	**(A)**	400	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-13

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.318647 **Long.:** -89.462464 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-13

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	25	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 12.5	20% of Total Cover: 5	25	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	25	**x 5 =**	125	
Column Totals:	25	**(A)**	125	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

young soy coming up. Plowed field.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Properties **City/County:** Ridgely/Lake **Sampling Date:** 04-Jun-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-D-14

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.321175 **Long.:** -89.462378 **Datum:** WGS 1984

Soil Map Unit Name: le, Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydro.

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-D-14

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. **Triticum cylindricum**	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

all cultivated wheat.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-D-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/3	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** **DP-E-1**

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355536 **Long.:** -89.462742 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-1

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Carex frankii	85	☑	85.0%	OBL
2. Juncus effusus	15	☐	15.0%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	100	x 1 =	100	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	**(A)**	100	**(B)**

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	85	7.5YR 4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-2

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355299 **Long.:** -89.462747 **Datum:** WGS 1984

Soil Map Unit Name: Ib - Iberia silt loam, 0 to 2 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-2

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-3

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.355749 **Long.:** -89.462579 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-3

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	10	x 3 =	30	
FACU species	50	x 4 =	200	
UPL species	10	x 5 =	50	
Column Totals:	90	**(A)**	320	**(B)**

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** **DP-E-4**

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 **%** / 0.0 **°**

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357458 **Long.:** -89.462568 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Brunnichia ovata	90	☑	94.7%	FACW
2. Carex frankii	5	☐	5.3%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	5	x 1 =	5	
FACW species	90	x 2 =	180	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.947

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-5

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357372 **Long.:** -89.462546 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** PFO1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-5

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-6

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.357912 **Long.:** -89.462607 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-6

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Zea mays	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-7

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.363782 **Long.:** -89.462293 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-7

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	30	☑	33.3%	FACU
2. Teucrium canadense	15	☑	16.7%	FACW
3. Campsis radicans	10	☑	11.1%	FAC
4. Rubus trivialis	10	☑	11.1%	FACU
5. Croton glandulosus	10	☑	11.1%	UPL
6. Verbascum thapsus	10	☑	11.1%	FACU
7. Cyperus strigosus	5	☐	5.6%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	90 (A)		320 (B)

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-8

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.364072 **Long.:** -89.462383 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-8

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Brunnichia ovata	90	☑	94.7%	FACW
2. Carex frankii	5	☐	5.3%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	5	x 1 =	5	
FACW species	90	x 2 =	180	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.947

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-9

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.364409 **Long.:** -89.462481 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-9

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-10

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.366454 **Long.:** -89.463073 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-10

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-11

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.353253 **Long.:** -89.462759 **Datum:** WGS 1984

Soil Map Unit Name: Cr - Crevasse loamy sand **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-11

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Solidago canadensis	20	☑	25.0%	FACU
2. Pityopsis graminifolia var. graminifolia	40	☑	50.0%	UPL
3. Cynodon dactylon	20	☑	25.0%	FACU
4.		☐	0.0%	
5.		☐	0.0%	
6.		☐	0.0%	
7.		☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	40	x 4 =	160	
UPL species	40	x 5 =	200	
Column Totals:	80	(A)	360	(B)

Prevalence Index = B/A = 4.500

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-12

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.352209 **Long.:** -89.462782 **Datum:** WGS 1984

Soil Map Unit Name: Bu - Bruno soils and alluvial land **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-12

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-13

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347142 **Long.:** -89.463025 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-13

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	100	x 5 =	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

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Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-14

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347481 **Long.:** -89.462932 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Wet-E-4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-14

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Cyperus strigosus	20	☑	57.1%	FACW
2. Sagittaria lancifolia	15	☑	42.9%	OBL
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 17.5	20% of Total Cover: 7	35	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	15	**x 1 =**	15	
FACW species	20	**x 2 =**	40	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	35	**(A)**	55	**(B)**

Prevalence Index = B/A = 1.571

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	85	7.5YR	4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-15

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.347366 **Long.:** -89.462915 **Datum:** WGS 1984

Soil Map Unit Name: Ie - Iberia silty clay loam **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-15

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-16

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340248 **Long.:** -89.462004 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-16

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Ambrosia trifida	80	☑	84.2%	FAC
2. Rubus trivialis	10	☐	10.5%	FACU
3.		☐	0.0%	
4. Solidago canadensis	5	☐	5.3%	FACU
5.		☐	0.0%	
6.		☐	0.0%	
7.		☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	80	x 3 =	240	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	300	**(B)**

Prevalence Index = B/A = 3.158

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-17

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340343 **Long.:** -89.46198 **Datum:** WGS 1984

Soil Map Unit Name: Sa - Sharkey clay, 0 to 1 percent slopes **NWI classification:** PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (●) No ( )

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
Wet-E-5

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):
Water Table Present?	Yes ( )	No (●)	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-17

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Echinochloa crusgalli	5	☐	5.3%	FACU
2. Leersia oryzoides	80	☑	84.2%	OBL
3. Sorghum halepense	5	☐	5.3%	FACU
4. Verbascum thapsus	5	☐	5.3%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	95	**(A)**	140	**(B)**

Prevalence Index = B/A = 1.474

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR 4/2	85	7.5YR 4/6	15	C	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Ridgely Solar **City/County:** Ridgely/Lake **Sampling Date:** 04-Aug-20

Applicant/Owner: First Solar, Dev., LLC **State:** TN **Sampling Point:** DP-E-18

Investigator(s): Justin Stelly; Frank Lewis **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR O in MLRA 131A **Lat.:** 36.340612 **Long.:** -89.461948 **Datum:** WGS 1984

Soil Map Unit Name: Bo - Bowdre silty clay **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: DP-E-18

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	
Herb Stratum (Plot size:)				
1. Glycine max	100	☑	100.0%	UPL
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	100	**x 5 =**	500	
Column Totals:	100	**(A)**	500	**(B)**

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: DP-E-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-21	10YR	4/2	100					Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

First Solar – Ridgely
Natural Resources Report

APPENDIX B

PHOTOGRAPHIC LOG

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PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	7/27/2016

Coordinates:
36.29668, -89.47645

Description:

Roadside manmade ditches bordering property boundaries.

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PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	7/27/2016

Coordinates:
36.29672, -89.47642

Description:

Roadside manmade ditches bordering property boundaries.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	7/27/2016

Coordinates:
36.29135, -89.47661

Description:

S-A-2, Ephemeral drainage.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	7/27/2016

Coordinates:
36.29887, -89.47575

Description:

Overland drainage patterns through ag field.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	7/27/2016

Coordinates:
36.29449, -89.46854

Description:

S-A-5, epehemeral drainage

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	7/27/2016

Coordinates:
36.30523, -89.46442

Description:

Depression in dirt road

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	7/27/2016

Coordinates:
36.29779, -89.46533

Description:

Agricultural uplands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	7/27/2016

Coordinates:
36.29197, -89.48110

Description:

Agricultural uplands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	9/13/2016

Coordinates:

36.28286, -89.48735

Description:

DP-B-1, Agricultural upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	9/14/2016

Coordinates:

36.29995, -89.49690

Description:

S-B-1, historical route of Blue Bank Bayou, now an ephemeral channel.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	9/14/2016

Coordinates:

36.29982, -89.49678

Description:

DP-B-2, herbaceous wetland (WET-B-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	9/14/2016

Coordinates:

36.29977, -89.49672

Description:

S-B-1, historical route of Blue Bank Bayou, now an ephemeral channel.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	9/14/2016

Coordinates:

36.29431, -89.48897

Description:

S-B-2, ephemeral drainage route.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	9/14/2016

Coordinates:

36.29435, -89.48898

Description:

S-B-2, ephemeral drainage route.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	6/13/2018

Coordinates:
36.305196, -89.461922

Description:
S-C-1, Ephemeral stream.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	6/13/2018

Coordinates:
36.304356, -89.462908

Description:
S-C-3, ephemeral drainage.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	6/13/2018

Coordinates:
36.304717, -89.464223

Description:
DP-C-5, PFO wetland (WET-C-1).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	6/13/2018

Coordinates:
36.304494, -89.464040

Description:
DP-C-6, herbaceous / Ag field upland.

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	6/13/2018

Coordinates:
36.302044, -89.464006

Description:
DP-C-8, PFO wetland (WET-C-2).

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	6/13/2018

Coordinates:
36.300460, -89.461058

Description:
S-C-2, Ephermal drainage through ag field.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	6/13/2018

Coordinates:
36.297788, -89.465152

Description:
DP-C-10, PEM wetland (WET-C-3) abutting PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	6/13/2018

Coordinates:
36.297254, -89.465002

Description:
DP-C-11, PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	6/13/2018

Coordinates:
36.297092, -89.464358

Description:
DP-C-12, PFO wetland (WET-C-4).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	6/13/2018

Coordinates:
36.296977, -89.463807

Description:
PUB ponded area (WET-C-5).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	6/13/2018

Coordinates:
36.296302, -89.462151

Description:
DP-C-13, PEM wetland (WET-C-6).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	6/13/2018

Coordinates:
36.295922, -89.462541

Description:
DP-C-14, PFO wetland (WET-C-4).

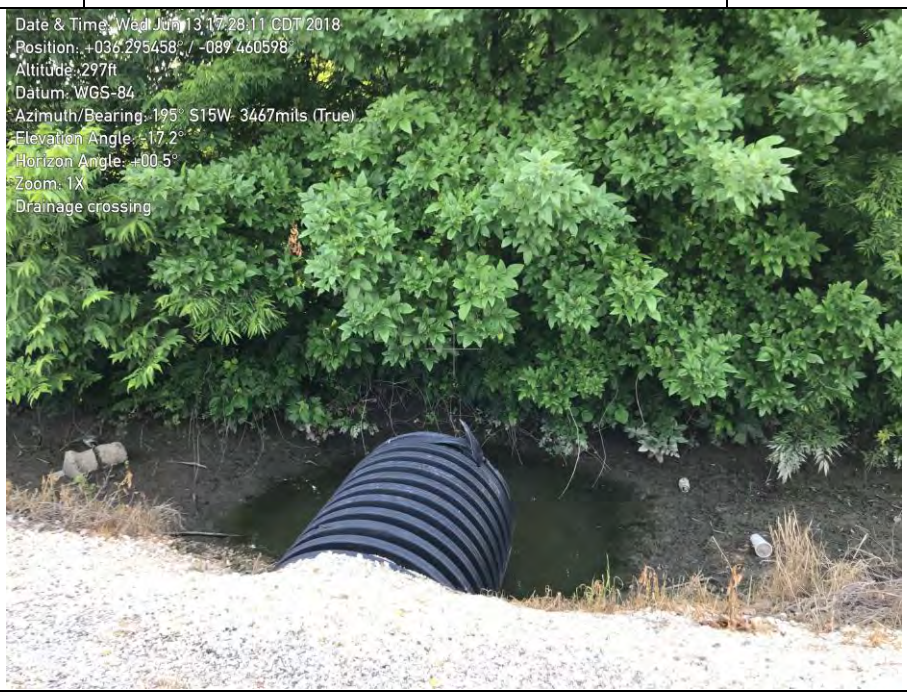
PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	6/13/2018

Coordinates:
36.295548, -89.460598

Description:
Drainage flowing into WET-C-4.



PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	6/13/2018

Coordinates:
36.296090, -89.464449

Description:
DP-C-15, Ag field Upland.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	6/13/2018

Coordinates:
36.293016, -89.468427

Description:
S-C-4, intermittent Ag field drainage.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	6/13/2018

Coordinates:
36.294584, -89.465430

Description:
DP-C-18, PFO wetland (WET-C-7).

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No. 17 | **Date:** 6/13/2018

Coordinates:
36.293354, -89.465502

Description:
DP-C-20, PEM wetland in Ag field (WET-C-9).

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PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No. 18 | **Date:** 6/13/2018

Coordinates:
36.293866, -89.465231

Description:
DP-C-21, PFO wetland (WET-C-8).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	6/13/2018

Coordinates:
36.296931, -89.460155

Description:
Slight dry depression between residence and field.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
20	6/13/2018

Coordinates:
36.291986, -89.473248

Description:
DP-C-23, PEM wetland in Ag field (WET-C-11).

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
21	6/13/2018

Coordinates:
36.292439, -89.475917

Description:
Roadside drainage ditch.

PHOTOGRAPHIC LOG

Property Name:	Location:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
22	6/13/2018

Coordinates:
36.293364, -89.461815

Description:
DP-C-25, PEM wetland in Ag field (WET-12).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	6-2-2020

Coordinates:
36.284187, -89.485309

Photo Direction:
n/a

Description:
Vegetation Point 4 - Cultivated Crops

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	6-2-2020

Coordinates:
36.299265, -89.481965

Photo Direction:
n/a

Description:
Vegetation Point 7 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	6-2-2020

Coordinates:
36.299244, -89.481602

Photo Direction:
n/a

Description:
Vegetation Point 8 – Cultivated Crops

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	6-2-2020

Coordinates:
36.307687, -89.475167

Photo Direction:
n/a

Description:
Vegetation Point 12 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	6-2-2020

Coordinates:
36.30221, -89.464598

Photo Direction:
n/a

Description:
Vegetation Point 15 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	6-2-2020

Coordinates:
36.302099, -89.464027

Photo Direction:
n/a

Description:
Vegetation Point 16 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	6-2-2020

Coordinates:
36.294865, -89.465536

Photo Direction:
n/a

Description:
Vegetation Point 20 – Woody Wetlands

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	6-2-2020

Coordinates:
36.28791, -89.466636

Photo Direction:
n/a

Description:
Vegetation Point 23 – Grassland/Herbaceous

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	6-2-2020

Coordinates:
36.287622, -89.468291

Photo Direction:
n/a

Description:
Vegetation Point 24 – Scrub/Shrub

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	6-3-2020

Coordinates:
36.299379, -89.481568

Photo Direction:
Northwest

Description:
DP-D-1, herbaceous wetland (WET-D-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	6-3-2020

Coordinates:
36.304902, -89.491440

Photo Direction:
Northeast

Description:
DP-3 herbaceous wetland (Wet-D-2).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	6-2-2020

Coordinates:
36.305338, -89464276

Photo Direction:
Southeast

Description:
S-D-1, ephemeral ag drainage.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	6-3-2020

Coordinates:
36.299625, -89.481813

Photo Direction:
Northeast

Description:
S-D-2, Blue Bank Bayou (perennial stream).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	6-3-2020

Coordinates:
36.256690, -89.480550

Photo Direction:
Northeast

Description:
S-D-3, ephemeral stream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	6-3-2020

Coordinates:
36.308619, -89.487779

Photo Direction:
Northeast

Description:
S-D-4, intermittent stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	6-3-2020

Coordinates:
36.294549, -89.449749

Photo Direction:
Northwest

Description:
S-D-5, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
17	6-3-2020

Coordinates:
36.314315, -89.475680

Photo Direction:
Southeast

Description:
S-D-6, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
18	6-3-2020

Coordinates:
36.299540, -89.488012

Photo Direction:
Northeast

Description:
S-D-7, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	6-3-2020

Coordinates:
36.289591, -89.461411

Photo Direction:
Southwest

Description:
S-D-8, ephemeral stream

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
20	6-4-2020

Coordinates:
36.299309, -89.481633

Photo Direction:
Northwest

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
21	6-4-2020

Coordinates:
36.299303, -89.481651

Photo Direction:
Southwest

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
22	6-4-2020

Coordinates:
36.301974, -89.464189

Photo Direction:
Northeast

Description:
Forested area not suitable bat habitat.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
1	8-4-2020

Coordinates:
36.375436, -89.465335

Photo Direction:
Southwest

Description:
Vegetation Point 32 – Grassland/Herbaceous.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
2	8-4-2020

Coordinates:
36.374732, -89465223

Photo Direction:
South

Description:
Vegetation Point 33 – Cultivated Crops.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
3	8-5-2020

Coordinates:
36.352693, -89.462746

Photo Direction:
South

Description:
Vegetation Point 39 – Cultivated Crops.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
4	8-4-2020

Coordinates:
36.355536, -89.462742

Photo Direction:
Northeast

Description:
DP-E-1, PEM Wetland (Wet-E-1).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
5	8-4-2020

Coordinates:
36.30221, -89.464598

Photo Direction:
n/a

Description:
DP-E-3, Herbaceous, Upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
6	8-4-2020

Coordinates:
36.357458, -89.462568

Photo Direction:
South

Description:
DP-E-4, PEM Wetland (Wet-E-2).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
7	8-4-2020

Coordinates:
36.364072, -89.462383

Photo Direction:
Northeast

Description:
DP-E-8, PEM Wetland (Wet-E-3).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
8	8-4-2020

Coordinates:
36.364409, -89.462481

Photo Direction:
South

Description:
DP-E-9, Cultivated Crops, Upland.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
9	8-5-2020

Coordinates:
36.347481, -89.462932

Photo Direction:
Southeast

Description:
DP-E-14, PEM Wetland (Wet-E-4).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
10	8-5-2020

Coordinates:
36.340343, -89.461980

Photo Direction:
Northwest

Description:
DP-E-17, PEM Wetland (Wet-E-5).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
11	8-4-2020

Coordinates:
36.353307, -89.462553

Photo Direction:
Southwest

Description:
Wetland 6, Pond, PUB(x).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
12	8-4-2020

Coordinates:
36.363610, -89.462100

Photo Direction:
West

Description:
S-E-1, Perennial stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
13	8-4-2020

Coordinates:
36.363610, -89.462100

Photo Direction:
East

Description:
S-E-1, Perennial stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
14	8-4-2020

Coordinates:
36.366350, -89.463100

Photo Direction:
Southwest

Description:
S-E-2, Ephemeral stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
15	8-4-2020

Coordinates:
36.366350, -89.463100

Photo Direction:
Northeast

Description:
S-E-2, Ephemeral stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
16	8-4-2020

Coordinates:
36.347250, -89.463100

Photo Direction:
Northwest

Description:
S-E-3, Perennial stream, Upstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
17	8-4-2020

Coordinates:
36.347250, -89.463100

Photo Direction:
Southeast

Description:
S-E-3, Perennial stream, Downstream.

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
18	8-4-2020

Coordinates:
36.299540, -89.488012

Photo Direction:
West

Description:
Stream 1, No Threatened and Endangered species observed. Minnows were present but not the Golden Topminnow (State Deemed in Need of Management).

PHOTOGRAPHIC LOG

Property Name:	County/State:	Project No.
Ridgely Properties	Lake County, Tennessee	E318201608

Photo No.	Date:
19	8-4-2020

Coordinates:
36.347314, -89.462773

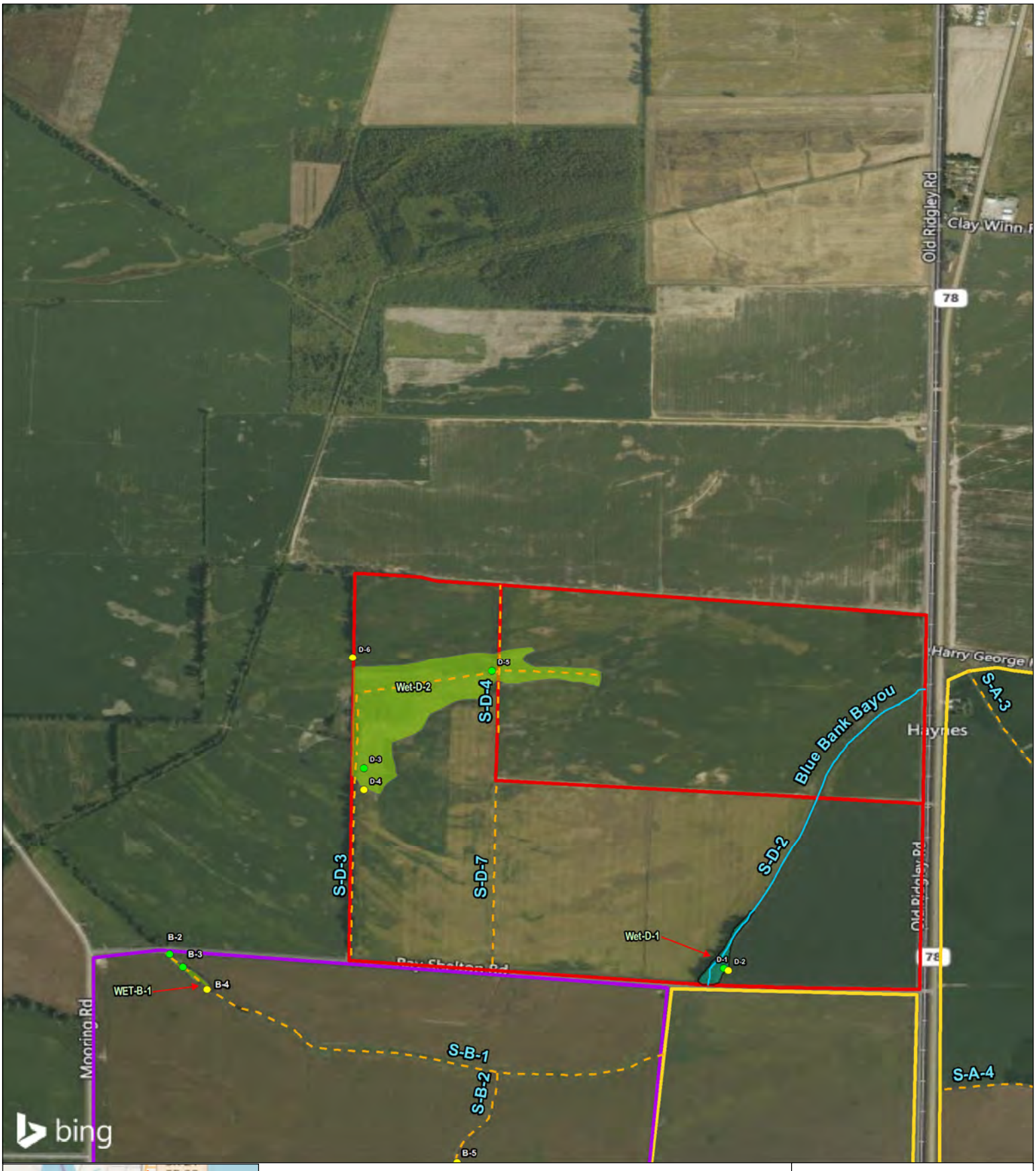
Photo Direction:
N/A

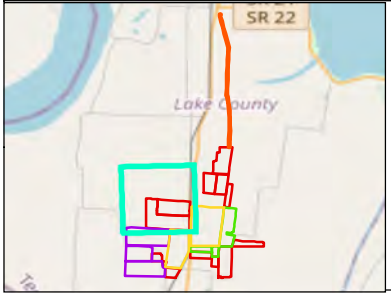
Description:
Sagittaria graminea or rigida, similar to but not the state threatened Blue Mud-Plantain (*Heteranthera limosa*).

First Solar – Ridgely
Natural Resources Report

APPENDIX C

PROJECT MAPPING





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

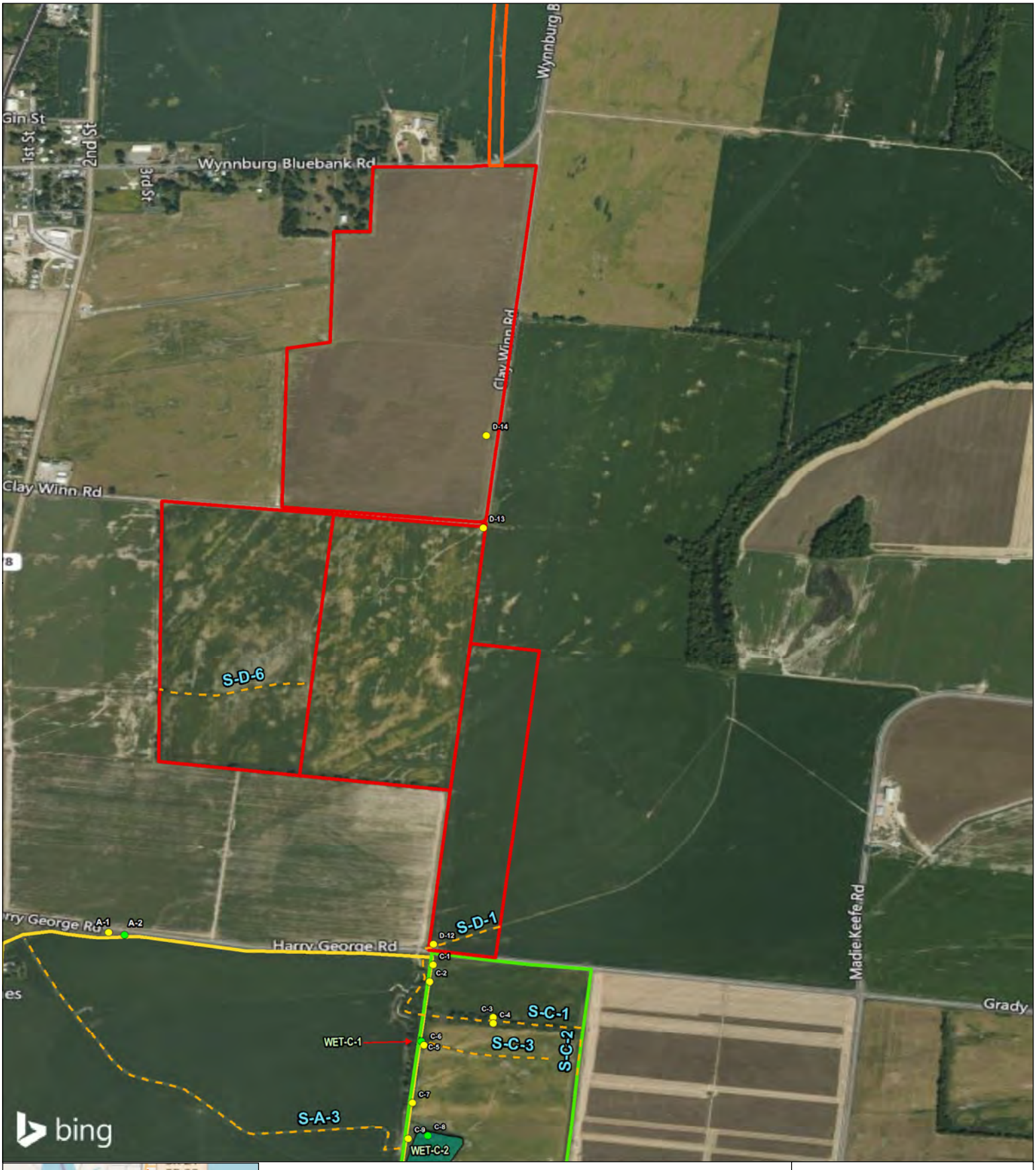
First Solar Ridgely

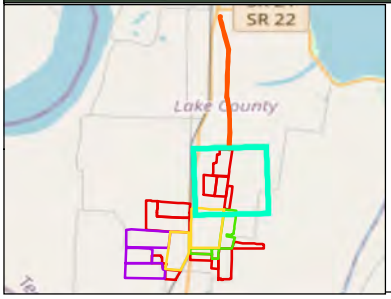
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-1

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

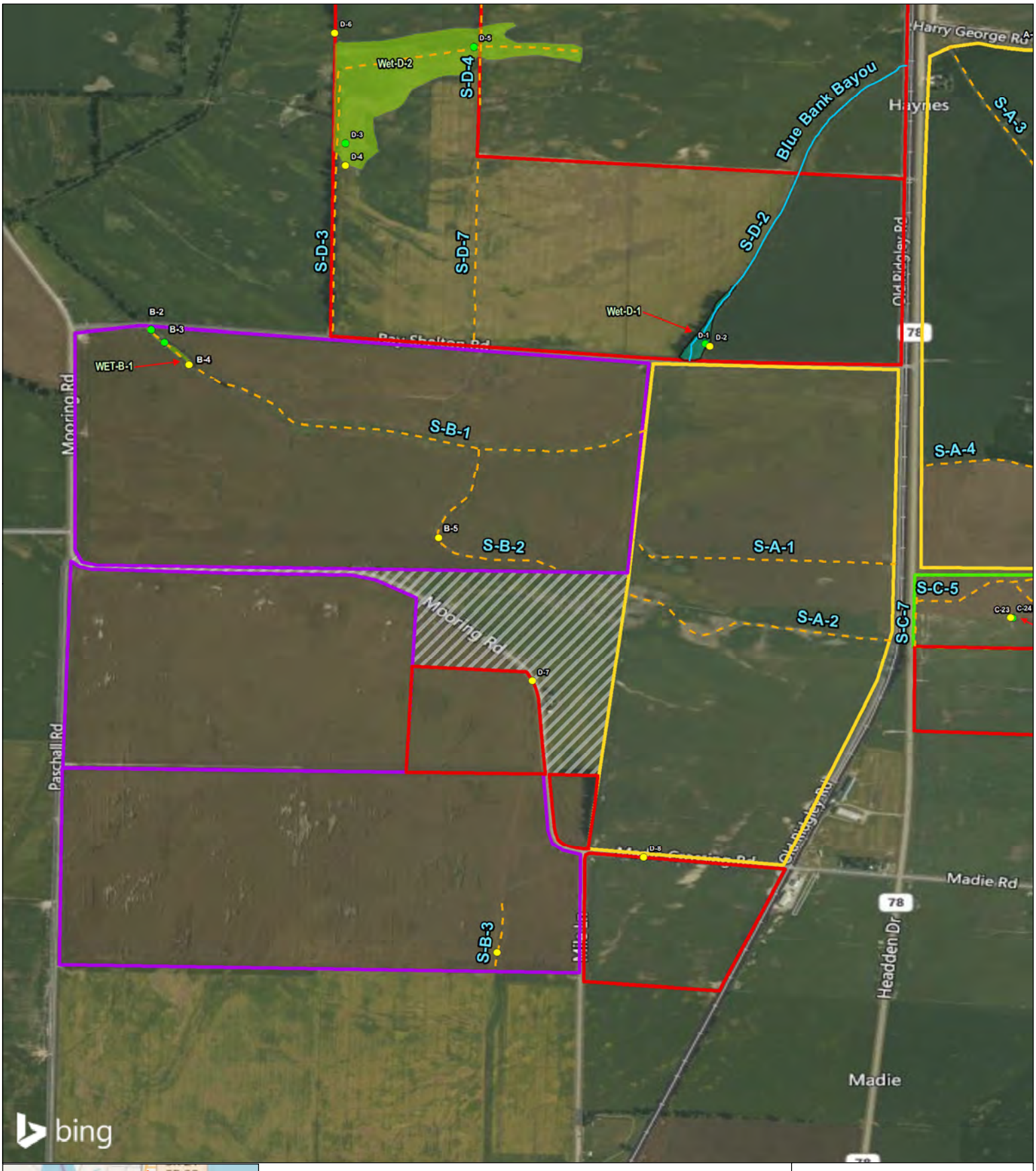
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-2

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Cardno
Shaping the Future

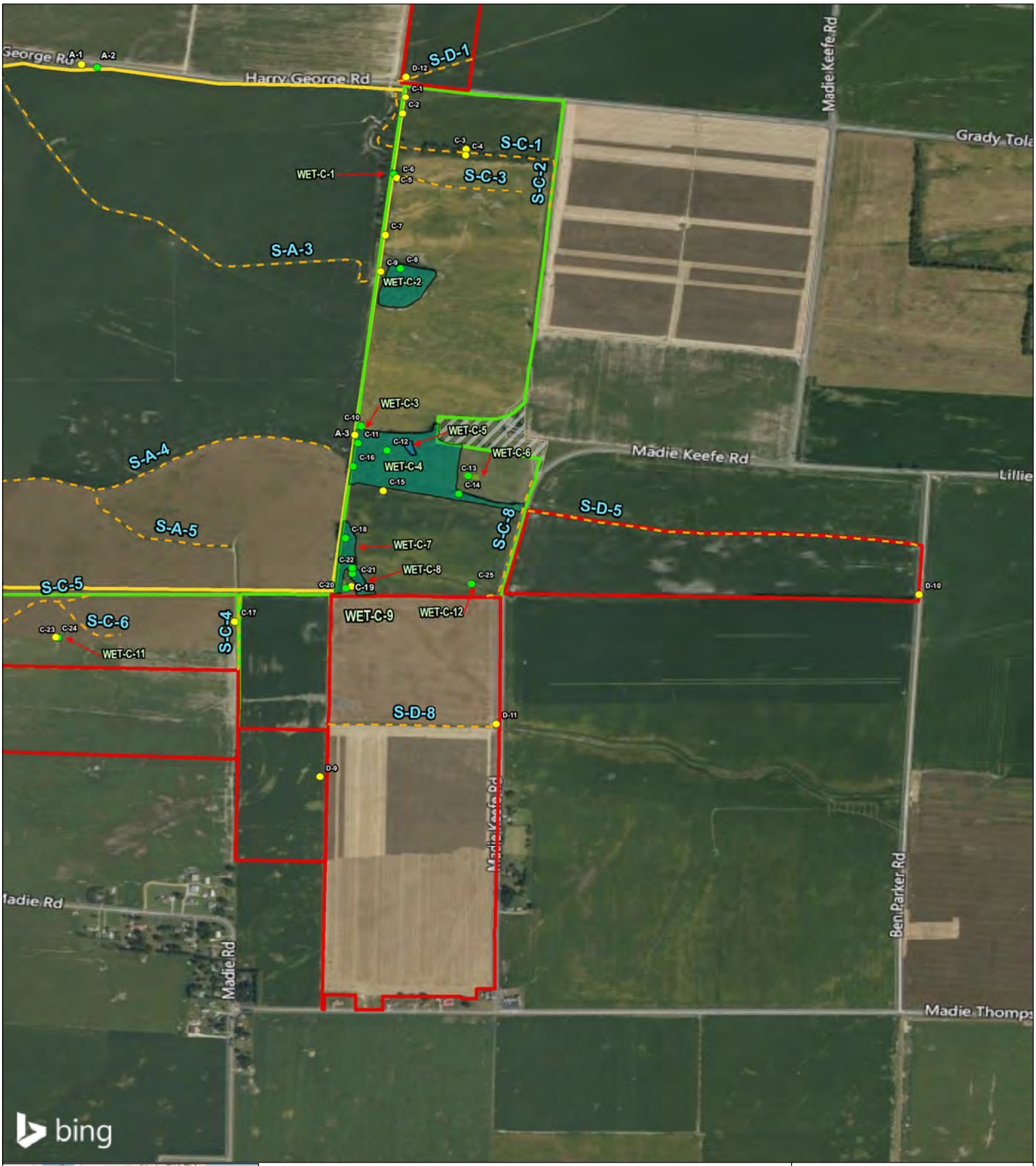
First Solar Ridgely

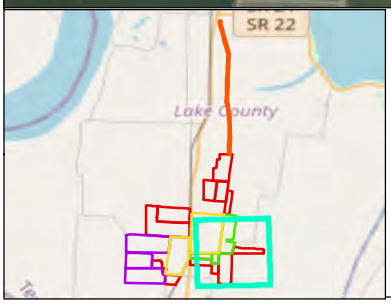
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-3

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

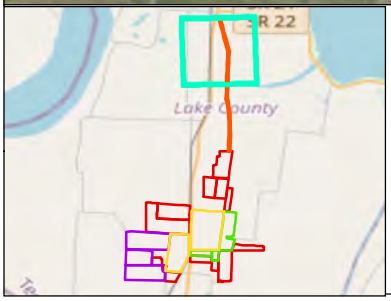
First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-4

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)



Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

0 250 500 1,000
Feet

Cardno
Shaping the Future

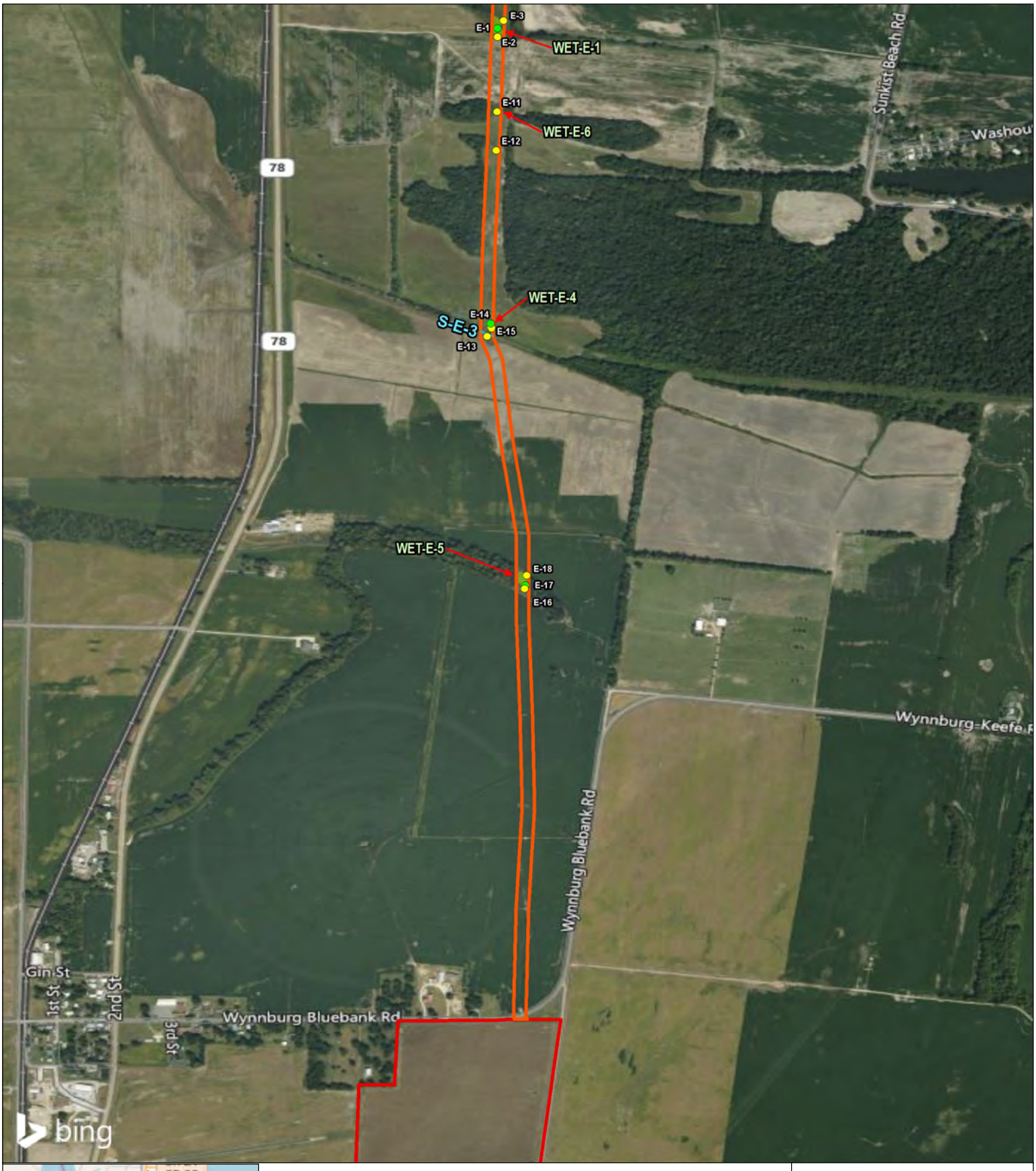
First Solar Ridgely

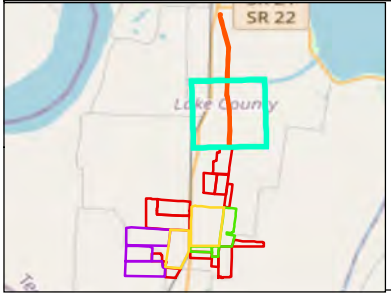
Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-5

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgely Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)





Study A
Study B
Study C
Study D
Study E
Excluded Parcels
Ephemeral Stream
Perennial Stream
Upland Data Point
Wetland Data Point
PEM Wetland
PFO Wetland
PUB(x) Pond

N

0 250 500 1,000
Feet

Cardno
Shaping the Future

First Solar Ridgely

Project Mapping

Date:	Project No:	Appendix No:
June 2020	E318201608	C-6

Date Created: 8/12/2020 Date Revised: 8/12/2020 File Path: S:\PROJECTS\First Solar\E318201608 - Ridgley Solar\GIS\Firs Solar Ridgely_Project MapBOOK1.mxd
GIS Analyst: justin.stelly

Data Source: Basemap: Bing Maps Aerial (2020)

First Solar – Ridgely
Natural Resources Report

APPENDIX D

VEGETATION ASSESSMENT DATASHEETS

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 1 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☑ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 1

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	03
				Wheat	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 2 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 2

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 3 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [x] Litter, duf
- [x] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 3

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
					1

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 4 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [x] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 4

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				corn	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 5 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [x] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 5

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 6 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☑ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 6

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Soy Bean	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 7 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Floodplain Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

Cypress tree woody wetland.

Fringe wetland along stream.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☑ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☑ Broad-leaved
- ☑ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☑ Forest
- ☑ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☑ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 7

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Taxodium distichum	04			Commelina virginica	06
Platanus occicentalis	03			Vitis	04
				Toxicodenron radicans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 8 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 8

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 9 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 9

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 10 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 10

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 11 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 11

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 12 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 12

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Rumex crispus	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 13 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 13

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 14 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Forest around a riverine.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [ ] sandy loam
- [ ] clay loam
- [ ] muck
- [x] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [x] 09 75-85%
- [ ] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [x] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 14

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Celtis laevigata	04			Solidago canadensis	03
Carya	03			Ambrosia	03
Ulmus americana	03			Toxicodendron radicans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 15 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [x] 09 75-85%
- [ ] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 15

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Rumex crispus	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 16 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☑ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [x] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 16

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	05			Carex grayi	04
Celtis laevigata	04				
Ulmus amerciana	04				

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 17 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 17

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	05

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 18 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [x] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 18

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	02	Ligustrum sinense	03	Parthenocisus quinquefolia	04
Celtis laevigata	04			Toxicodendron radicans	04
Ulmus amerciana	04			Lonicera Japonica	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 19 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☑ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☑ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 19

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 20 Polygon Code N/A

Provsnal Community Name Woody Wetlands

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Depression

Landform: depressional Wetland.

Surficial Geology: Organic Soils

Cowardin System
- ☐ Upland
- ☐ Estuarine
- ☐ Riverine
- ☑ Palustrine
- ☐ Lacustrine

Hydrologic Modifiers
- ☐ Semipermanently Flooded
- ☑ Intermittently Flooded
- ☐ Seasonally Flooded
- ☐ Permanenetly flooded
- ☐ Saturated
- ☐ Permanently flooded-tidal
- ☐ Temporarily Flooded
- ☐ Tidally Flooded

Salinity/Halinity Modifiers
- ☐ Saltwater
- ☐ Brackish
- ☑ Freshwater

Environmental Comments:

woody wetland depression

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- ☐ Bedrock
- ☐ Large rocks (.10cm)
- ☐ Smal rocks (0.2-10 cm)
- ☐ Sand (0.1-2mm)
- ☐ Other
- ☐ Wood (>1 cm)
- ☐ Litter, duf
- ☐ Bare soil

Soil Texture
- ☐ sand
- ☐ silt loam
- ☐ clay
- ☐ loamy sand
- ☐ silt
- ☐ peat
- ☐ sandy loam
- ☑ clay loam
- ☐ muck
- ☐ loam
- ☐ silty clay

Soil Drainage
- ☐ Rapidly drained
- ☐ Moderately well drained
- ☑ Poorly drained
- ☐ Well drained
- ☐ Somewhate poorly drained
- ☐ Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [x] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [ ] Annual
- [x] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [x] Forest
- [x] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [ ] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [x] 10 85-95%
- [ ] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [x] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 20

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
Fraxinus	02	Ligustrum sinense	03	Parthenocisus quinquefolia	04
Celtis laevigata	04			Toxicodendron radicans	04
Ulmus amerciana	04			Lonicera Japonica	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 21 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 21

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 22 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 22

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 23 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 23

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 24 Polygon Code N/A

Provsnal Community Name Scrub/Shrub

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

mostly young hackberry shrubland

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☑ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☐ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☑ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☑ Shrubland
- ☐ Dwarf Shrubland
- ☐ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☑ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 24

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
		Sambucus canadensis	04		
		Toxicodendron radicans	03		

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 25 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☑ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☑ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 25

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	03
				Plantago lanceolata	03
				Andropogon virginicus	03
				Lolium perenne	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 26 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [ ] 02 0.5-1 m
- [x] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 26

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Corn	04

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 27 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 27

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 28 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 28

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 29 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☐ Graminoid
- ☑ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☑ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☐ 11 95-100%

Height Scale for Strata
- ☑ 01 <.5 m
- ☐ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 29

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				soybeans	03

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 30 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 30

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 31 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 6-02-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 31

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Wheat	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 32 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Flat Plain

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on edge of farmed field.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [x] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 32

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Teucrium canadense	3
				Campsis radicans	3
				Croton glandulosus	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 33 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [ ] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 33

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Zea Mays	06

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 34 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 34

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Teucrium canadense	3
				Campsis radicans	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 35 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 35

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Verbascum thapsus	3
				Campsis radicans	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 36 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

herbaceous area surrounded by crops

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 36

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Ambrosia trifida	3
				Campsis radicans	3
				Croton glandulosus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 37 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- ☐ Evergreen
- ☐ Cold-decidous
- ☐ Drought-decidous
- ☐ Mixed evergreen-Cold deciduous
- ☐ Mixed evergreen-Drought deciduous

Herbs
- ☑ Annual
- ☐ Perennial

Leaf Type (of dominant stratum)
- ☐ Broad-leaved
- ☐ Needle-leaved
- ☐ Microphyllous
- ☑ Graminoid
- ☐ Forb
- ☐ Pteridophyte

Physiognomic class
- ☐ Forest
- ☐ Woodland
- ☐ Shrubland
- ☐ Dwarf Shrubland
- ☑ Herbaceous
- ☐ Non-vascular
- ☐ Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- ☐ 01 <5%
- ☐ 02 5-15%
- ☐ 03 15-25%
- ☐ 04 25-35%
- ☐ 05 35-45%
- ☐ 06 45-55%
- ☐ 07 55-65%
- ☐ 08 65-75%
- ☐ 09 75-85%
- ☐ 10 85-95%
- ☑ 11 95-100%

Height Scale for Strata
- ☐ 01 <.5 m
- ☑ 02 0.5-1 m
- ☐ 03 1-2 m
- ☐ 04 2-5 m
- ☐ 05 5-10 m
- ☐ 06 10-15 m
- ☐ 07 15-20 m
- ☐ 08 20-35 m
- ☐ 09 35-50 m
- ☐ 10 >50 m

Plot Code Veg Plot 37

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine max	6

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 38 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 38

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Solidago canadensis	4
				Campsis radicans	3
				Croton glandulosus	3
				Verbascum thapsus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 39 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 39

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine max	6

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 40 Polygon Code N/A

Provsnal Community Name Grassland/Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

grassland on transmission ROW.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 40

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Ambrosia trifida	6
				croton glandulosus	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 41 Polygon Code N/A

Provsnal Community Name Grassland Herbaceous

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [x] Graminoid
- [x] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 41

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Ambrosia glandulosus	06
				Rubus trivialis	3
				Campsis radicans	3

Appendix A

Standard Field Form for Data Collection

IDENTIFIERS/LOCATORS

Plot Code Veg Plot 42 Polygon Code N/A

Provsnal Community Name Cultivated Crops

State TN Site Name Ridgely

Quad Name Ridgely Quad Code 28573-F6

GPS File Name N/A Field UTM x N/A mE Field UTM y N/A mN

please do not complete the following information when in the field

Corrected UTM x _____ mE Corrected UTM y _____ mN UTM Zone 16S

Survey Date 8-03-2020 Surveyors Justin Stelly, Frank Lewis

Directions to plot:

N/A

Plot length N/A Plot Width N/A Plot photos (y/n) Yes Plot Permanent (y/N) N/A

Plot Representatives

Yes

Environmental Description

Elevation N/A Slope N/A Aspect N/A

Topographic Position: Plain

Landform: Hillside

Surficial Geology: Sandy Loam Soils

Cowardin System
- [x] Upland
- [ ] Estuarine
- [ ] Riverine
- [ ] Palustrine
- [ ] Lacustrine

Hydrologic Modifiers
- [ ] Semipermanently Flooded
- [ ] Seasonally Flooded
- [ ] Saturated
- [ ] Temporarily Flooded
- [ ] Intermittently Flooded
- [ ] Permanenetly flooded
- [ ] Permanently flooded-tidal
- [ ] Tidally Flooded

Salinity/Halinity Modifiers
- [ ] Saltwater
- [ ] Brackish
- [ ] Freshwater

Environmental Comments:

cultivated land planted yearly.

Soil Description:

UnvegetatedSurface (please use the cover scale next page)
- [ ] Bedrock
- [ ] Large rocks (.10cm)
- [ ] Smal rocks (0.2-10 cm)
- [ ] Sand (0.1-2mm)
- [ ] Other
- [ ] Wood (>1 cm)
- [ ] Litter, duf
- [ ] Bare soil

Soil Texture
- [ ] sand
- [ ] silt loam
- [ ] clay
- [ ] loamy sand
- [ ] silt
- [ ] peat
- [x] sandy loam
- [ ] clay loam
- [ ] muck
- [ ] loam
- [ ] silty clay

Soil Drainage
- [ ] Rapidly drained
- [ ] Moderately well drained
- [ ] Poorly drained
- [x] Well drained
- [ ] Somewhate poorly drained
- [ ] Very poorly drained

Vegetation Description

Leaf phenology (of dominant stratum)

Tree and Shrubs
- [ ] Evergreen
- [ ] Cold-decidous
- [ ] Drought-decidous
- [ ] Mixed evergreen-Cold deciduous
- [ ] Mixed evergreen-Drought deciduous

Herbs
- [x] Annual
- [ ] Perennial

Leaf Type (of dominant stratum)
- [x] Broad-leaved
- [ ] Needle-leaved
- [ ] Microphyllous
- [ ] Graminoid
- [ ] Forb
- [ ] Pteridophyte

Physiognomic class
- [ ] Forest
- [ ] Woodland
- [ ] Shrubland
- [ ] Dwarf Shrubland
- [x] Herbaceous
- [ ] Non-vascular
- [ ] Sparsely vegetated

Cover Scale for Stratan& unvegetated surface
- [ ] 01 <5%
- [ ] 02 5-15%
- [ ] 03 15-25%
- [ ] 04 25-35%
- [ ] 05 35-45%
- [ ] 06 45-55%
- [ ] 07 55-65%
- [ ] 08 65-75%
- [ ] 09 75-85%
- [ ] 10 85-95%
- [x] 11 95-100%

Height Scale for Strata
- [ ] 01 <.5 m
- [x] 02 0.5-1 m
- [ ] 03 1-2 m
- [ ] 04 2-5 m
- [ ] 05 5-10 m
- [ ] 06 10-15 m
- [ ] 07 15-20 m
- [ ] 08 20-35 m
- [ ] 09 35-50 m
- [ ] 10 >50 m

Plot Code Veg Plot 42

Species percent cover. Starting with the uppermost stratum, list all species with % cover for each species in the stratum. For forest and woodlands, on a separate line below each tree species, list the DBH of all trees above 10cm diameter. Separate measurements with a comma. Put an asterisk next to any species that are known diagnostics for a particular community in the classification. Also list species outside the plot at the end of the table or designate with a 0 in Cover Class column

Cover scale for species:
01 < 1% 02 1-5% 03 5-25% 04 25-50% 05 50-75% 06 75-100%

Stratum Species Name	Cover	Stratum Species Name	Cover	Stratum Species Name	Cover
				Glycine Max	06

First Solar – Ridgely
Natural Resources Report

APPENDIX E

TVA RAPID ASSESSMENT DATASHEETS

Site: WET-B-1	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 3

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
ARC GIS

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [■] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

19

Site: WET-B-1	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

19
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 5 subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 4 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [x] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

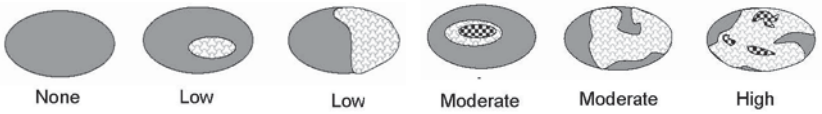
Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

28 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-1	**Rater(s):** Erin Berkenkamp	**Date:** 05/29/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 7

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [x] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 10

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [x] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-1	**Rater(s):** Erin Berkenkamp	**Date:** 05/29/20

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max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [1] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [1] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

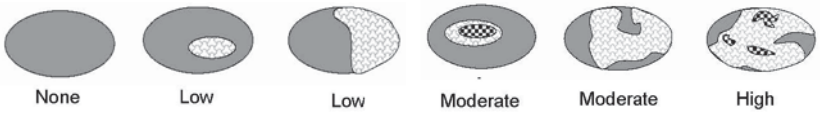
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

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GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: WET-C-2	**Rater(s):** Ern Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 3

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [x] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 6

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 15

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-2	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

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Metric 5. Special Wetlands

max 10 pts. 5 subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 7 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

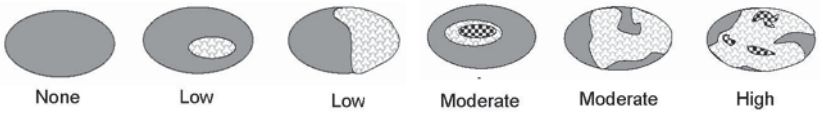
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

36 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-3	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 7

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 7

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-3	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

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max 10 pts. 10 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

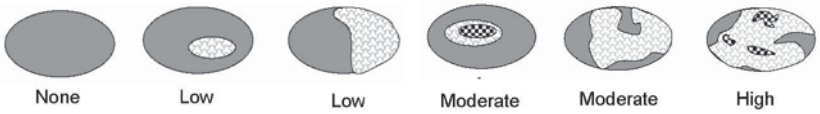
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

31 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-4	**Rater(s):** Erin Berkenkamp	**Date:** 06/01/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 2

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 12

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 14

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

30

Site: WET-C-4	**Rater(s):** Erin Berkenkamp	**Date:** 6/02/2020

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max 10 pts. | 10 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. | 11 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [1] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

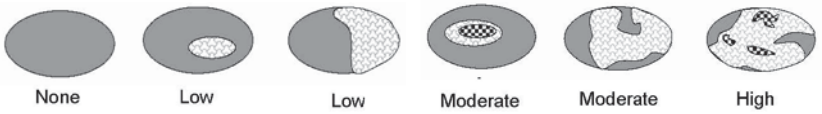
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [2] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

51 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-6	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 6

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 7

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

15

Site: WET-C-6	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

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subtotal previous page

max 10 pts. | subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. | 3 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

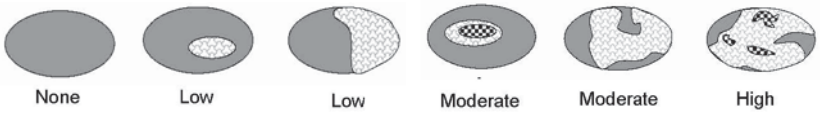
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

18 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-7	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 11

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 13

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

27

Site: WET-C-7	**Rater(s):** Erin Berkenkamp	**Date:** 06/02/2020

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subtotal previous page

max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 5 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

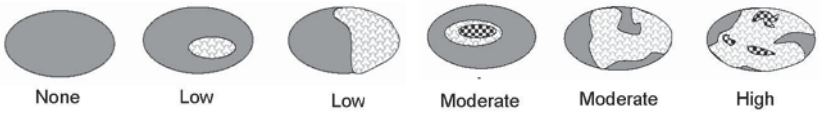
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

37 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-8	**Rater(s):** Erin Berkenk	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 16

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 13

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: WET-C-8	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

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subtotal previous page

max 10 pts. 5 subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [x] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 6 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [1] Coarse woody debris >15 cm (6 in.)
- [1] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

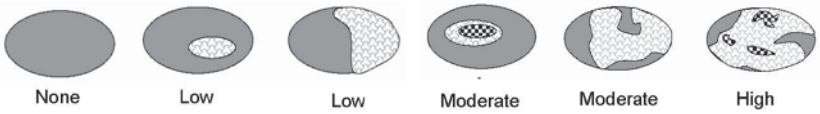
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

43 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-9	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

Metric 1. Wetland Area (size)

0 (max 6 pts. / subtotal)

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

1 (max 14 pts. / subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

9 (max 30 pts. / subtotal)

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

8 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: WET-C-9	**Rater(s):** Justin Stelly	**Date:** 06/11/2020

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Metric 5. Special Wetlands

max 10 pts. subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- ☐ Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- ☐ Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- ☐ Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- ☐ Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- ☐ Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- ☐ Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- ☐ Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- ☐ Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- ☐ Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- ☐ Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- ☐ Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

3
max 20 pts. subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water <20 acres (8 ha)
- ☐ Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4) [BR/CM (5)]
- ☐ Moderate (3)[BR/CM (5)]
- ☐ Moderately low (2) [BR/CM (3)]
- 1 Low (1) [BR/CM (2)]
- ☐ None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- 1 Nearly absent <5% cover (0)
- ☐ Absent (1)

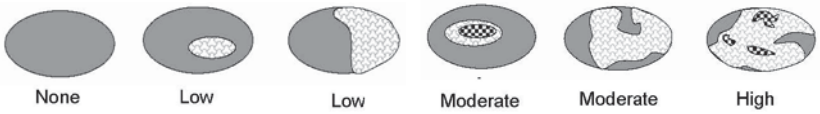
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15 cm (6 in.)
- ☐ Standing dead >25 cm (10 in.) dbh
- ☐ Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

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GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-10	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

1 | max 14 pts. | subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

9 | max 30 pts. | subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

8 | max 20 pts. | subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: WET-C-10	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

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max 10 pts. | subtotal

raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- ☐ Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- ☐ Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- ☐ Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- ☐ Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- ☐ Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- ☐ Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- ☐ Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- ☐ Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- ☐ Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- ☐ Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- ☐ Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

3
max 20 pts. | subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water <20 acres (8 ha)
- ☐ Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4) [BR/CM (5)]
- ☐ Moderate (3)[BR/CM (5)]
- ☐ Moderately low (2) [BR/CM (3)]
- 1 Low (1) [BR/CM (2)]
- ☐ None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- 1 Nearly absent <5% cover (0)
- ☐ Absent (1)

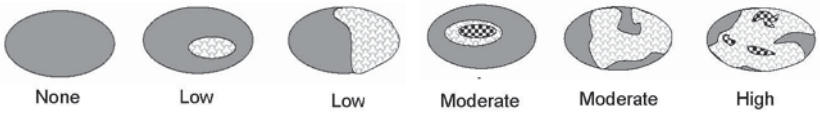
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15 cm (6 in.)
- ☐ Standing dead >25 cm (10 in.) dbh
- ☐ Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

21
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-11	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 4

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other PLOWED

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

9

Site: WET-C-11	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

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subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

1
max 20 pts. | subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [0] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

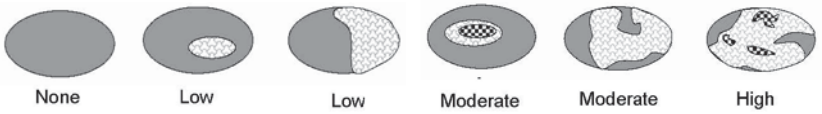
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

10
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: WET-C-12	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 0

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 4

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other plowed

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

8

Site: WET-C-12	**Rater(s):** Erin Berkenkamp	**Date:** 06/05/2020

8
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | subtotal

raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [ ] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

1
max 20 pts. | subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [x] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

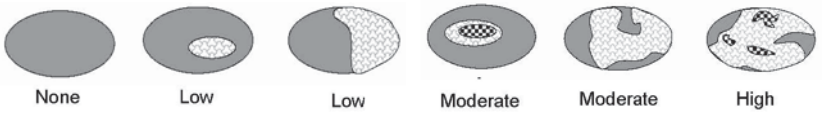
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

9
GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation D-1	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 10

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [ ] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [x] Seasonally inundated (2) [BR/CM (4)]
- [ ] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [■] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 15

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

35

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

35
subtotal previous page

max 10 pts. 17 subtotal

17
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [x] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [x] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 12 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [x] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [x] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [ ] Low (1) [BR/CM (2)]
- [ ] None (0)

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [x] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [x] Amphibian breeding pools

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

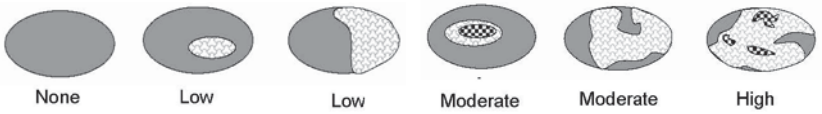
Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

64: CAT 3 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation D-2	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | 4 subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [x] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | 8 subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | 5 subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] ditch
- [■] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [■] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMED LAND. PLOWED PLANTED, ETC

Metric 4. Habitat Alteration and Development

max 20 pts. | 3 subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

20

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 06/03/2020

20
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 =	Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 =	Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 =	Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 =	Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low =	Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod =	Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high =	A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

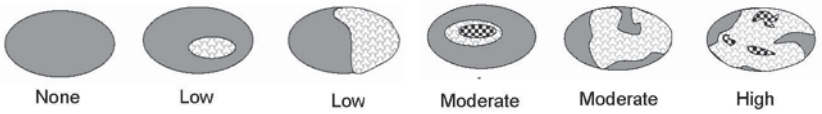
Mudflat and Open Water Class Quality

0 =	Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 =	Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 =	Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 =	High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 =	Absent
1 =	Present in very small amounts or if more common of marginal quality
2 =	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 =	Present in moderate or greater amounts and of highest quality

26: CAT 1

GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-1	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 2

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [x] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

18

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

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subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

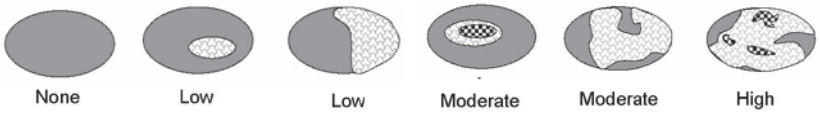
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

24: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: Ridgely Solar Installation E-2	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

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Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

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subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

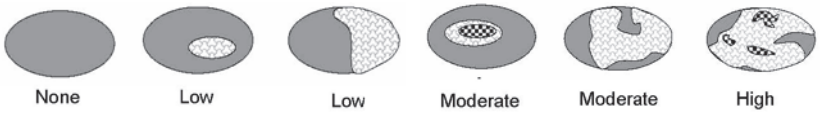
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-3	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | 1 subtotal

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | 8 subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | 5 subtotal

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | 3 subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

17

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

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subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 4 subtotal

4
raw score*

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

Metric 6. Plant Communities, Interspersion, Microtopography

max 20 pts. 2 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

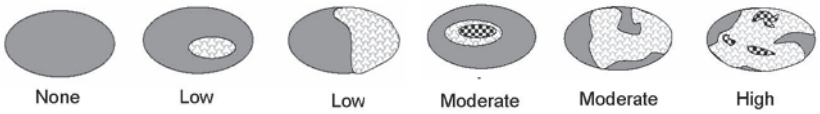
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

TENNESSEE VALLEY AUTHOROITY RAPID ASSESSMENT MEHTOD: Assessing Wetland Condition, Functional Capacity, Quality
TVARAM FIELD FORM

Site: Ridgely Solar Installation E-4	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

0 (max 6 pts. / subtotal)

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [ ] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [x] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):
GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

8 (max 14 pts. / subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

5 (max 30 pts. / subtotal)

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

3 (max 20 pts. / subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

16

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

16
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

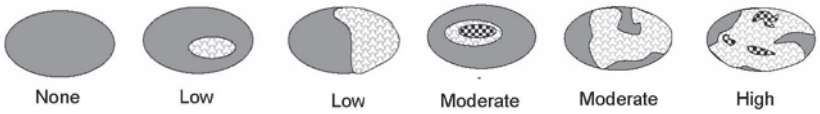
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

22: CAT 1

GRAND TOTAL (max 100 pts)

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

Site: Ridgely Solar Installation E-5	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/03/2020

Metric 1. Wetland Area (size)

max 6 pts. | subtotal: 1

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score.

- [ ] >50 acres (>20.2 ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
- [ ] 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
- [ ] 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
- [ ] 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
- [x] 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
- [ ] <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list):

GPS Survey

Metric 2. Upland Buffers and Surrounding Land Use

max 14 pts. | subtotal: 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [x] WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [x] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

max 30 pts. | subtotal: 5

3a. Sources of water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3) [BR/CM (5)]
- [x] Precipitation (1) [unless BR/CM primary source (5)]
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100-year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g., forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [x] <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] Seasonally inundated (2) [BR/CM (4)]
- [x] Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [■] other FARMING

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 3

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [■] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [■] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

17

Site: Ridgely Solar Installation	**Rater(s):** J. Stelly, F. Lewis	**Date:** 08/04/2020

17
subtotal previous page

max 10 pts. 4 subtotal

4
raw score*

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc).

- [ ] Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); muck, organic soil layer (3)
- [ ] Assoc. forest (wetl. &/or adj. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- [ ] Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- [x] Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- [ ] Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- [ ] Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- [ ] Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh: buttress, multitrunk/stool, stilted, shallow roots/tip-up, or pneumatophores (3)
- [ ] Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier]
- [ ] Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [*use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- [ ] Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management/designation (3)
- [ ] Cat. 1 (very low quality) : <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (-10)

max 20 pts. 2 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water <20 acres (8 ha)
- [ ] Moss/lichen. Other _____

Vegetation Community Cover Scale

0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

6b. Horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4) [BR/CM (5)]
- [ ] Moderate (3)[BR/CM (5)]
- [ ] Moderately low (2) [BR/CM (3)]
- [x] Low (1) [BR/CM (2)]
- [ ] None (0)

Narrative Description of Vegetation Quality

low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rate, threatened, or endangered species

6c. Coverage of invasive plants.
Add or deduct points for coverage.

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

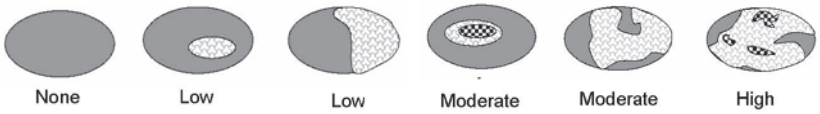
Mudflat and Open Water Class Quality

0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <02 ha (0.5 to 5 acre)]
3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15 cm (6 in.)
- [ ] Standing dead >25 cm (10 in.) dbh
- [ ] Amphibian breeding pools

Hypothetical Wetland for Estimating Degree of Interspersion



Microtopography Cover Scale

0 = Absent
1 = Present in very small amounts or if more common of marginal quality
2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 = Present in moderate or greater amounts and of highest quality

23: CAT 1 **GRAND TOTAL (max 100 pts)**

0- 29 = Category 1, low wetland function, condition, quality**
30- 59 = Category 2, good/moderate wetland function, condition, quality**
60-100 = Category 3, superior wetland function, condition, quality**

**Based on ORAM Score Calibration Report for the scoring breakpoints between wetland categories: http://www.epa.state.oh.us/dsw/401/401.html

First Solar – Ridgely
Natural Resources Report

APPENDIX F

USFWS IPAC OFFICIAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075

In Reply Refer To: May 27, 2020
Consultation Code: 04ET1000-2020-SLI-1244
Event Code: 04ET1000-2020-E-01758
Project Name: First Solar Ridgley Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
(931) 528-6481

Project Summary

Consultation Code: 04ET1000-2020-SLI-1244

Event Code: 04ET1000-2020-E-01758

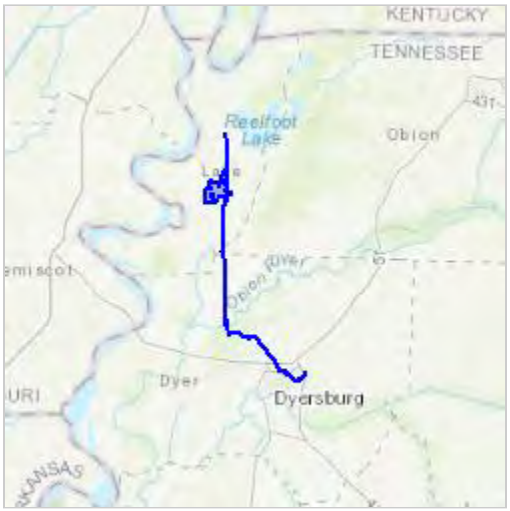
Project Name: First Solar Ridgley Site

Project Type: ** OTHER **

Project Description: Potential site of solar facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.2942300790001N89.45531223378367W



Counties: Dyer, TN | Lake, TN | Obion, TN

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/7162

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

TN Department of Environment & Conservation

County	Category	Scientific Name	Common Name	Fed. Status	State Status	Habitat	Wet Habitat Flag
Lake	Bird	Haliaeetus leucocephalus	Bald Eagle	--	D	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.	Aquatic
Lake	Bird	Thryomanes bewickii	Bewick's Wren	--	D	Brushy areas, thickets and scrub in open country, open and riparian woodland.	Upland
Lake	Bird	Ixobrychus exilis	Least Bittern	--	D	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.	Possible
Lake	Bird	Sternula antillarum athalassos	Interior Least Tern	LE	E	Mississippi River sand bars & islands, dikes. 	Aquatic
Lake	Bird	Limnothlypis swainsonii	Swainson's Warbler	--	D	Mature, rich, damp, deciduous floodplain and swamp forests.	Possible
Lake	Fish	Atractosteus spatula	Alligator Gar	--	D	Sluggish pools of large rivers, oxbows, swamps, and backwaters; west Tennessee.	Aquatic
Lake	Fish	Scaphirhynchus albus	Pallid Sturgeon	LE	E	Large, turbid, free-flowing riverine habitat, in strong current over firm gravel or sandy substrates; Mississippi River main channel.	Aquatic

Lake	Fish	Macrhybopsis meeki	Sicklefin Chub	--	D	Main channel of the Mississippi River in swift currents over sand and gravel substrates.	Aquatic
Lake	Fish	Fundulus chrysotus	Golden Topminnow	--	D	Swamps, backwaters, and pools of ditches and slow-moving creeks; Reelfoot Lake & imm. vicinity.	Aquatic
Lake	Flowering Plant	Elodea nuttallii	Nuttall's Waterweed	--	S	Aquatic; Streams And Ponds	Aquatic
Lake	Flowering Plant	Heteranthera limosa	Blue Mud-plantain	--	T	Mud Flats	Possible
Lake	Flowering Plant	Carex comosa	Bristly Sedge	--	T	Swamps	Possible
Lake	Flowering Plant	Ranunculus flabellaris	Yellow Water-crowfoot	--	T	Ponds And Marshes	Possible
Lake	Flowering Plant	Sagittaria platyphylla	Ovate-leaved Arrowhead	--	S	Swamps, Emergent	Possible
Lake	Flowering Plant	Hottonia inflata	Featherfoil	--	S	Wet Sloughs And Ditches	Aquatic
Lake	Flowering Plant	Iris fulva	Copper Iris	--	T	Bottomlands	Possible
Lake	Flowering Plant	Neobeckia aquatica	Lake Cress	--	S	Gum Or Cypress Swamps	Possible
Lake	Mollusc	Webbhelix multilineata	Striped Whitelip	--	Rare, Not State Listed	Low wet habitats, marshes, floodplains, meadows; lake margins; under leaf litter or drift; Mississippi River floodplain.	Possible
Lake	Mollusc	Lampsilis siliquoidea	Fatmucket	--	Rare, Not State Listed	Slackwater with mud subst; Wolf R (Miss R trib); west TN; may occur at Reelfoot Lk; also rept Drakes Ck (Cumb R), Sumner Co.	Aquatic

Lake	No Data	Rookery	Heron Rookery	--	Rare, Not State Listed	No Data	No Data
Lake	Reptile	Nerodia cyclopion	Mississippi Green Watersnake	--	D	Marshes, swamps, bayous, shallow lakes and ponds, wet prairies, oxbows and floodplain sloughs; far west Tennessee.	Aquatic

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Haliaeetus leucocephalus	Bald Eagle	OBION	TN	S3	D	E - Verified extant (viability not assessed)	DM			HATCHER (1997) REPORTED THE FOLLOWING ACTIVITY AT THIS NESTING SITE: 2 YOUNG FLEDGED EACH YEAR BETWEEN 1992-1996, 3 YOUNG IN 1991, THE PAIR WERE ON THE NEST IN 1990, NEST WITH YOUNG IN 1989, 2 YOUNG IN 1988, AND A NEST WAS BUILT EVERY YEAR BETWEEN 1984-1	1984-01-01	1996-05-12	1996-05-12
1	Nerodia cyclopion	Mississippi Green Water Snake	LAKE	TN	S2	D	H - Historical				ONE INDIVIDUAL WAS COLLECTED IN JUNE OF 1969.	1969-06-18	1969-06-18	1969-06-18
2	Nerodia cyclopion	Mississippi Green Water Snake	LAKE	TN	S2	D	H? - Possibly historical				THREE SPECIMENS WERE COLLECTED AT THIS LOCALITY ON JUNE 28, 1980; 2 SPECIMENS WERE COLLECTED ALIVE AND 1 SPECIMEN WAS PRESERVED AT THE UNIVERSITY OF TENNESSEE VERTEBRATE ZOOLOGY COLLECTION (CAT. NO. 6738).	1980-06-28	1980-06-28	1980-06-28
3	Sorex longirostris	Southeastern Shrew	LAKE	TN	S4		H - Historical				GOODPASTER AND HOFFMEISTER REPORTED THIS SPECIES FROM THIS LOCALITY ON 5 MAY, 1950.	1995-05-05	1950-05-05	1950-05-05
4	Neotoma floridana illinoensis	Eastern Woodrat	OBION	TN	S3	D	H - Historical			ON A BLUFF	GOODPASTER AND HOFFMEISTER (1952) REPORTED A NEST FOUND AT THIS LOCALITY.	1951-03-25	1951-03-25	1951-03-25

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Atractosteus spatula	Alligator Gar	LAKE	TN	S1	D	H? - Possibly historical				BAKER (1937) AND BAKER AND PARKER (1938) REPORTED THE SPECIES FROM COMMERCIAL FISHING REPORTS, OCCASIONAL SPECIMENS TAKEN IN NETS, TAKEN DURING SUMMER OF 1936 AND/OR 1937.	1936-01-01	1936-01-01	1936-01-01
1	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				21 SPECIMENS FROM W.C. STARNES AND R. T. BRYANT 1989 COLLECTION AT 'PROBABLY TWRA DITCHES. . .' LOCALITY IN U.T. COLLECTION (U.T. 60.528). 3 SPECIMENS FROM THIS COLLECTION (33-42mm SL) PHOTOGRAPHED BY BRYANT. DICKINSON (1973) REPORTED THE SPECIES COLLECT	1968-03-11	1992-06-11	1992-06-11
2	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				SISK (1975) REPORTED 28 SPECIMENS COLLECTED FROM THIS LOCALITY 6-14 OCTOBER 1973. ALSO 2 SPECIMENS COLLECTED BY DR. RALPH TAYLOR IN MAY, 1970. DICKINSON (1973) REPORTED THAT THE SPECIES WAS COLLECTED FROM REELFOOT LAKE BETWEEN 1936 AND 1939 BY BAKER	1939-01-01	1973-10-01	1973-10-01
3	Fundulus chrysotus	Golden Topminnow	LAKE	TN	S1S2	D	H? - Possibly historical				ONE SPECIMEN FROM THIS LOCALITY COLLECTED BY U.T. ICHTHYOLOGY CLASS IN U.T. ICHTHYOLOGICAL COLLECTION (CAT. NO. 60.426).	1988-10-21	1988-10-21	1988-10-21
4	Scaphirhynchus albus	Pallid Sturgeon	LAKE	TN	S1	E	H? - Possibly historical	LE			NO VOUCHER SPECIMENS, BUT ETNIER AND STARNES (IN PRESS) MAP THIS LOCALITY, BASED ON INFORMATION FROM RELIABLE COMMERCIAL FISHERMAN (RONNIE CAPPS). CAPPS COLLECTS STURGEON WITH GILL AND TRAMMEL NETS AND COMMENTS THAT 1 IN 5 STURGEON TAKEN THIS LOCALITY IS	1988-01-01	1990-01-01	1990-01-01
5	Cycleptus elongatus	Blue Sucker	DYER	TN	S2	T	E - Verified extant (viability not assessed)				ETNIER (1998 PERSONAL COMMUNICATION--E-MAIL--WITH P.SHUTE) REPORTED ONE SPECIMEN SNAGGED BY KENNETH JONES (OF DYERSBURG) WHILE ANGLING AT THIS LOCALITY.	1998-01-01	1998-08-29	1998-08-29
6	Macrhybopsis meeki	Sicklefin Chub	LAKE	TN	S2	D	E - Verified extant (viability not assessed)			SAND BANK	1 SPECIMEN COLLECTED HERE BY ETNIER WHILE SEINING ALONG SAND BANK; UT CAT #44.5972 (DAE FIELD NOTES #93-149).	1993-01-01	1993-10-05	1993-10-05

FID	SCIENTIFIC	COMMON_NAM	COUNTY	STATE	ST_RANK	ST_STATUS	BASIC_EO_R	FED_STATUS	COMMENT	DESCRIPTIO	EO_DATA	FIRST_OBSE	LAST_OBSER	SURVEY_DT
0	Panax quinquefolius	American ginseng	OBION	TN	S3S4	S-CE	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO AND WENDELL CREWS. CITATION: (U87GUT01TNUS) GUTHRIE, M. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UN	DIVERSE HERB AND SHRUB LAYER UNDER A MATURE WOODS TYPICAL OF THE LOESS BLUFFS. WESTERN MESOPHYTIC FOREST.	TWO SMALL PATCHES.	1986-07-15	1986-07-15	1986-07-15
1	Heteranthera limosa	Smaller Mud-plantain	LAKE	TN	S1S2	T	B - Good estimated viability				Plants found in a field depression. Soils wet and likely hydric. Associated plants included Ludwigia palustris (abundant), Ludwigia glandulosa and leptocarpa, Eleocharis obtusa, Ammannia coccinea, Echinochloa spp., and others.	2019-08-18	2019-08-18	2019-08-18
2	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO J. (OBSERVED, NO COLLECTION). CITATION: GUTHRIE, M. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGI		CA. 100 PLANTS	1986-04-14	1986-04-14	1986-04-14
3	Armoracia lacustris	Lake-cress	LAKE	TN	S2	S	E - Verified extant (viability not assessed)		[TNHP BESTSOURCE: PYNE, MILO] ADDITIONAL HABITAT EXISTS WHICH MAY NOT HAVE BEEN SURVEYED.	EDGE OF REELFOOT LAKE BY BOARDWALK. 1997: MUDFLAT UNDER CYPRESS TREES.	1997: ABOUT 50 PLANTS SEEN ON MUDFLAT BY JOHN GABEL AND CARL NORDMAN. 1996: PLANTS PRESENT AT BOARDWALK.	1996-04-27	1997-06-19	1997-06-19
4	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO. CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		A FEW PLANTS SEEN IN CYPRESS WOODS NEAR SHORELINE, PLANTS VIGOROUS, POSSIBLY DUE TO SHADE. NO COLLECTION MADE.	1986-06-14	1986-06-14	1986-06-14
5	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (OBS). CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		LARGE PATCH IN INLET N OF CABIN	1986-07-14	1986-07-14	1986-07-14
6	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	E - Verified extant (viability not assessed)		[TNHP BESTSOURCE: SOMERS, PAUL, ARTHUR SMITH AND SHEILA SHAY]		IN SHALLOW WATER NEAR LARGE BALD CYPRESS TREES. (FLS AND BUDS). NUMEROUS PLANTS. NEAR LAKE DRIVE COMMUNITY. 1996-04-24; PLANTS OBS. BY MILO PYNE.	1996-04-27	1996-04-27	1996-04-27
7	Hottonia inflata	Featherfoil	LAKE	TN	S2	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (743) VDB, TENN]	SHALLOW, PROTECTED WATER PLANTS SHIELDED FROM ROUGH WATER BY A BAND OF ZIZANIOPSIS.	OVER 100 PLANTS SCATTERED AROUND SMALL INLET, FLOWERING WELL.	1986-04-12	1986-04-12	1986-04-12
8	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO. CITATION: GUTHRIE, MILO. 1987. THE RARE PLANTS AND FLORA OF REELFOOT LAKE. TECHNICAL REPORT TO THE ECOLOGICAL SERVICES DIVISION, TENNESSEE DEPARTMENT OF CONSERVATION, NASHVILLE, TENNESSEE. UNPAGINATED.]		VEG. PATCH OBSERVED NEAR BOAT CHANNEL, NO COLLECTION MADE.	1986-08-09	1986-08-09	1986-08-09
9	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO (1411) VDB, TENN]		ABOUT 75 PLANTS. FEW IN FLW. N OF SPAIN POINT. SHORT, BUT VIGOROUS.	1986-09-18	1986-09-18	1986-09-18
10	Sagittaria platyphylla	Ovate-leaved Arrowhead	LAKE	TN	S2S3	S	H? - Possibly historical		[TNHP BESTSOURCE: GUTHRIE, MILO]		1986-09-21: OVER 200 PLANTS SEEN, N OF LARGE INDIAN MOUND AND BOAT-DOCK. FEW PLANTS IN BLOOM. NO COLLECTION MADE. 1986-08-09: LARGE PATCH OBSERVED CA. FIFTY PLANTS, NONE REPRODUCTIVE, COVERING IN EXCESS OF 100 SQ. YDS. SOME DEPREDATION BY HERBIVORES.	1986-08-09	1986-09-21	1986-09-21
11	Heteranthera limosa	Smaller Mud-plantain	LAKE	TN	S1S2	T	B - Good estimated viability				Plants found in a field depression. Soils wet and likely hydric. Associated plants included Ludwigia palustris (abundant), Ludwigia glandulosa and leptocarpa, Eleocharis obtusa, Ammannia coccinea, Echinochloa spp., and others.	2019-08-18	2019-08-18	2019-08-18

First Solar – Ridgely
Natural Resources Report

APPENDIX G

TVA HYDROLOGIC DETERMINATION FIELD DATA SHEETS

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-1	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: -36.293504, -89.477009
Previous Rainfall (7-days) : 0.04		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ie - Iberia silty clay loam		Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☐ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC - Secondary Indicators

Secondary Indicator Score (if applicable) =

Justification / Notes :

Ag drain ditch with some upland vegetation encroachment; manually manipulated/maintained

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 5.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-2	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.29135, -89.47661
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC - PI #2 and Secondary Indicators.

Secondary Indicator Score (if applicable) =

Justification / Notes :

Upland vegetation growth within 50% of the drainage ditch

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 4.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-3	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.302841 -89.469909
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Bo - Bowdre silty clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC - Secondary Indicators.

Secondary Indicator Score (if applicable) =

Justification / Notes :

maintained ag ditch; upland plant growth on levee and within ditch

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 8.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-4	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.296841 -89.470159
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC - PI 2

Secondary Indicator Score (if applicable) =

Justification / Notes :

Historical natural topo drainage prior to agriculturalal manipulation. No clear bed and bank; majority of drainage planted.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 1.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-A-5	Date/Time: July 27, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.294655 -89.470562
Previous Rainfall (7-days) : 0.04		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC - Secondary Indicators.

Secondary Indicator Score (if applicable) =

Justification / Notes :

AG ditch; mostly grown over and planted with crops at various points along reach. Upland veg encroachment on banks and into channel.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 10.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-1a	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.297142 -89.492543
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ib - Iberia silt loam		Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☒ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = STREAM, INDICATOR 6.

Secondary Indicator Score (if applicable) = 22.5

Justification / Notes :

This area was dry in 2016; however in 2020 due to recent rains and above normal rains 3 months prior, this area was holding water and did contain aquatic flora and fauna.

Actual bayou dissipates after 200ft from the road; area beyond that is actively farmed. Water source is a back up from road ditches and some head water during heavy rains.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = __22.5_____

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-1b	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.297142 -89.492543
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☒ Severe ☐ Moderate ☐ ☐ Slight Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

defined channel dissipates and eventually becomes agricultural field under crop most of the time.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 7.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-2	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.293761 -89.488547
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ib - Iberia silt loam		Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ X Severe ☐ ✓ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 2

Justification / Notes :

channel is lacking; area has been actively planted and farmed for many years. wet weather drainage at most.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 2

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-B-3	Date/Time: September 13, 2016
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.282971 -89.487284
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Cm - Commerce silt loam		Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ ☒ Severe ☐ ✓ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 4

Justification / Notes :

channel actively farmed in most years.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 4

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-1	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.305046 -89.461719
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : [X] very wet [ ] wet [ ] average [ ] dry [ ] drought [ ] unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: [✓] Yes [ ] No Number :

Soil Type(s) / Geology : Wo - Worthen silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
[ ] Severe [ ] Moderate [✓] Slight [ ] Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, secondary indicators.

Secondary Indicator Score (if applicable) = 10

Justification / Notes :

WWC within ag riparian border; possibly used as a trail as well; stream was dry with 2+ inches of rain this month over the average.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 10

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-3	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.304206 -89.462863
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : [X] very wet [ ] wet [ ] average [ ] dry [ ] drought [ ] unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles | Photos: [✓] Yes [ ] No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
[ ] Severe [ ] Moderate [✓] Slight [ ] Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, Secondary Indicators.

Secondary Indicator Score (if applicable) = 6

Justification / Notes :

Ag drainage ditch; 2+ inches of rain above monthly average during visit. ditch is dry and has high weed/grass enchroachment.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 6

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-4	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.291917 -89.468342
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☑ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ie - Iberia silty clay loam	Source: NRCS Web soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☐ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, secondary indicators.

Secondary Indicator Score (if applicable) = 14

Justification / Notes :

Deeply incised and maintained ag ditch that shows signs of holding water rather than flow; this connects to S-A-4 which was documented as being dry.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 14

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-5	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.292455 -89.474518
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ie - Iberia silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, indicator 2 and secondary indicators.

Secondary Indicator Score (if applicable) = 3.5

Justification / Notes :

slight ag field drainage with little to know defined channel; mostly planted and farmed during the year.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 3.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-C-6	Date/Time: June 13, 2018
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.292027 -89.472315
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Rf - Reelfoot silty clay loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 3.5

Justification / Notes :

slight ag field drainage with little to know defined channel; mostly planted and farmed during the year.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 3.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-1	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.307416 -89.463125
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Re - Reelfoot silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☑ Moderate ☐ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = STREAM: PRIMARY INDICATOR 8.

Secondary Indicator Score (if applicable) = 27

Justification / Notes :

rainfall 2" below normal; small stream within well maintained ditch (Blue Bayou)

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 27

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-3	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.302849 -89.491811
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :
Soil Type(s) / Geology : Tc - Tunica clay	Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural	

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☒ Severe ☐ Moderate ☐ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, Indicator 2

Secondary Indicator Score (if applicable) = 5

Justification / Notes :

farmed wetland with remnant drepressional ditch; lacking bed and bank throughout most fo the reach; farmed in most historical years.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-4	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.308575 -89.487769
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Ib - Iberia silt loam Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

☐ Severe ☐ Moderate ☒ ☑ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 8.5

Justification / Notes :

ag and roadside drainage ditch; dominated by grass and some wetland species.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = __8.5 _____

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-6	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.314088 -89.469309
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☒ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ib - Iberia silt loam		Source: NRCS Web soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☒ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, Secondary Indicators.

Secondary Indicator Score (if applicable) = 15

Justification / Notes :

Daily flow and precipitation records showing feature only flows in direct response to rainfall

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 15

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-7	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.301946 -89.487889
Previous Rainfall (7-days) : 0.00		
Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown Source of recent & seasonal precip data : NOAA National Climatic Data Center		
Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :	
Soil Type(s) / Geology : Ib - Iberia silt loam	Source: NRCS Web soil Survey	
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : ☐ Severe ☐ Moderate ☑ Slight ☐ Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, INDICATOR 2.

Secondary Indicator Score (if applicable) = 4

Justification / Notes :

Channel 90% covered with upland species; some small pockets of wetland grasses.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 4

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Lake	Named Waterbody: S-D-8	Date/Time: June 3, 2020
Assessors/Affiliation: J. Stelly; F. Lewis		Project ID : E318201608
Site Name/Description: First Solar Ridgely		
Site Location: Ridgely, Tennessee		
USGS quad: Ridgely, TN	HUC (12 digit): 080101000501	Lat/Long: 36.289566 -89.463959
Previous Rainfall (7-days) : 0.00		

Precipitation this Season vs. Normal : ☐ very wet ☐ wet ☐ average ☐ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data : NOAA National Climatic Data Center

Watershed Size : Blue Bank Bayou: 58 SQ. Miles	Photos: ☑ Yes ☐ No Number :

Soil Type(s) / Geology : Sa - Sharkey clay Source: NRCS Web soil Survey

Surrounding Land Use : Agricultural

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
☐ Severe ☐ Moderate ☑ Slight ☐ Absent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase		Stream
6. Presence of fish (except *Gambusia*)		Stream
7. Presence of naturally occurring ground water table connection		Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed		Stream
9. Evidence watercourse has been used as a supply of drinking water		Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC, Secondary Indicators

Secondary Indicator Score (if applicable) = 6.5

Justification / Notes :

small drainage between row crops; usually dry within historic aerials; dead vegetation within channel.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
20. Fibrous roots in channel bed [1]	3	2	1	0
21. Rooted plants in the thalweg [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 6.5

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :