APPENDIX A – TVA'S SITE CLEARING AND GRADING SPECIFICATIONS

Tennessee Valley Authority Site Clearing and Grading Specifications

1. General - The project manager with the clearing and/or grading contractor(s) shall review the environmental evaluation documents for the project or proposed activity (categorical exclusion checklist, environmental assessment, or environmental impact statement) along with all clearing and construction appendices, conditions in applicable general and/or site-specific permits, the storm water pollution prevention plan, open burning or demolition notification requirements, 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 storm water management practices as outlined in TVA's best management practices (BMPs) manual. 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. BMPs shall be installed before general site clearing or grading, with progressive stabilization BMPs applied from the perimeter toward the interior work areas as grading is completed. Any stabilized area that must be disturbed in subsequent steps shall have temporary BMPs installed until work is completed and the area is restabilized.

   If the contractor fails to use BMPs or to follow environmental expectations discussed in the prebid, 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. He or she shall secure, or ensure that TVA has **secured, all necessary permits and authorizations and made all appropriate notifications** 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 employees knowledgeable of environmental requirements shall be documented** with copies submitted to TVA's project manager or environmental specialist before work begins. The **contractor and subcontractors will be responsible for meeting all** conditions **specified in permits.** Permit conditions shall be reviewed in prework discussions.

3. Land and Landscape Preservation - The contractor shall exercise care to preserve the condition of cleared soils by avoiding as much compacting and deep scarring as possible in areas not to be developed for buildings, structures, or foundations. 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. The placement of erosion/sediment controls shall begin at the perimeter and work progressively to the interior of the site. Repeated work in an area will require establishment of a ground cover immediately after each disturbance is completed. In areas outside the clearing, borrow, fill, or use and access areas, the natural vegetation shall be protected from damage. The contractor and his or her employees and subcontractors must not deviate from delineated access routes or use areas and must enter the site(s) 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 by modifying the methods of clearing or reclearing, grading, borrow, or fill so that the buffer and sensitive area are protected. Some areas may require planting native low-growing plants or grasses to meet the criteria of regulatory agencies, executive orders, or commitments to special program interests.

4. Streamside Management Zones - The clearing and/or grading contractor(s) 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 (SMZs), 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 the 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 the 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 access or site 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 prevented from falling into water bodies or immediately removed from streams, ditches, ponds, 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 and 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 quickly grow to "electrical clearance problem" heights. In many circumstances, herbicides labeled for water and wetland use may be used in reclearing.

At substation, switching stations, and communications sites, wetlands are avoided unless there is no feasible alternative.

6. Sensitive Area Preservation - If prehistoric or historic artifacts or features that might be of archaeological or historical significance are discovered during clearing, grading, borrow, or fill operations, the activity shall immediately cease within a 100-foot radius, and a TVA project manager, an environmental specialist, and the TVA 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, grading, borrow and fill, and/or disposal activities shall be performed using BMPs that will prevent erosion and entrance of spillage, contaminants, debris, and other pollutants or objectionable materials into drainageways, surface waters, 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 shall be kept away from streams and ditches and shall be incorporated into the soil. Only materials allowed to be burned under an open burning permit may be incorporated into the soil.

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

8. Turbidity and Blocking of Streams - If temporary clearing, grading, borrow, or fill 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. In Tennessee, conditions of an Aquatic Resource Alteration Permit shall be met. 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, borrow, fill, or right-of-way disturbance and after sequential disturbance of stabilized areas due to stepwise construction requirement in accordance with applicable permit or regulatory requirements.

   On rights-of-way, 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 design or construction access road standards. At any construction site, 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 immediately. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained for stream or wetland crossings.

9. Air Quality Control - The clearing or grading contractor shall take appropriate actions to limit the amount of air emissions created by clearing and disposal operations to be 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. If building renovation or demolition is involved, the required air quality organization shall be notified the minimum 10 days in advance, and if the start date is delayed, renotified to start the clock again.

10. Dust and Mud Control - Clearing, grading, borrow, fill, or transport 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 manufacturer's 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 vehicles will not be performed on the site, right-of-way, or access route. However, if emergency or “have to” situations arise, minimal/temporary maintenance to vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Some heavy equipment may have to be serviced on the right-of-way, site, or access route, except in designated sensitive areas. The clearing, grading, borrow, or fill 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 Program Administration or project manager 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, grading, borrow, fill, or construction contractor shall contract a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party and at each construction step. 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, grading, borrow, fill, or construction contractor and subcontractor(s) shall be responsible for daily cleanup and proper labeling, storage, and disposal of all refuse and debris on the site produced by his or her 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. Records of waste generation shall be maintained for a site and shall be provided to the project manager and environmental specialist assigned to the project.

19. 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. On rights-of-way, 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, site, or access.

    Trees that have been cut may not be left on a substation, switching station, or communications site.

20. 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, site, or communications facilities 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 Construction and Maintenance Activities (TVA, 2017).* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor with emphasis on using landscaping materials provided in guidelines for low maintenance native vegetation use.

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.

E. Vegetation designated by the Federal Invasive Species Council must be eliminated at the work site, and equipment being transported from location to location must be inspected to ensure removal and destruction of live material.

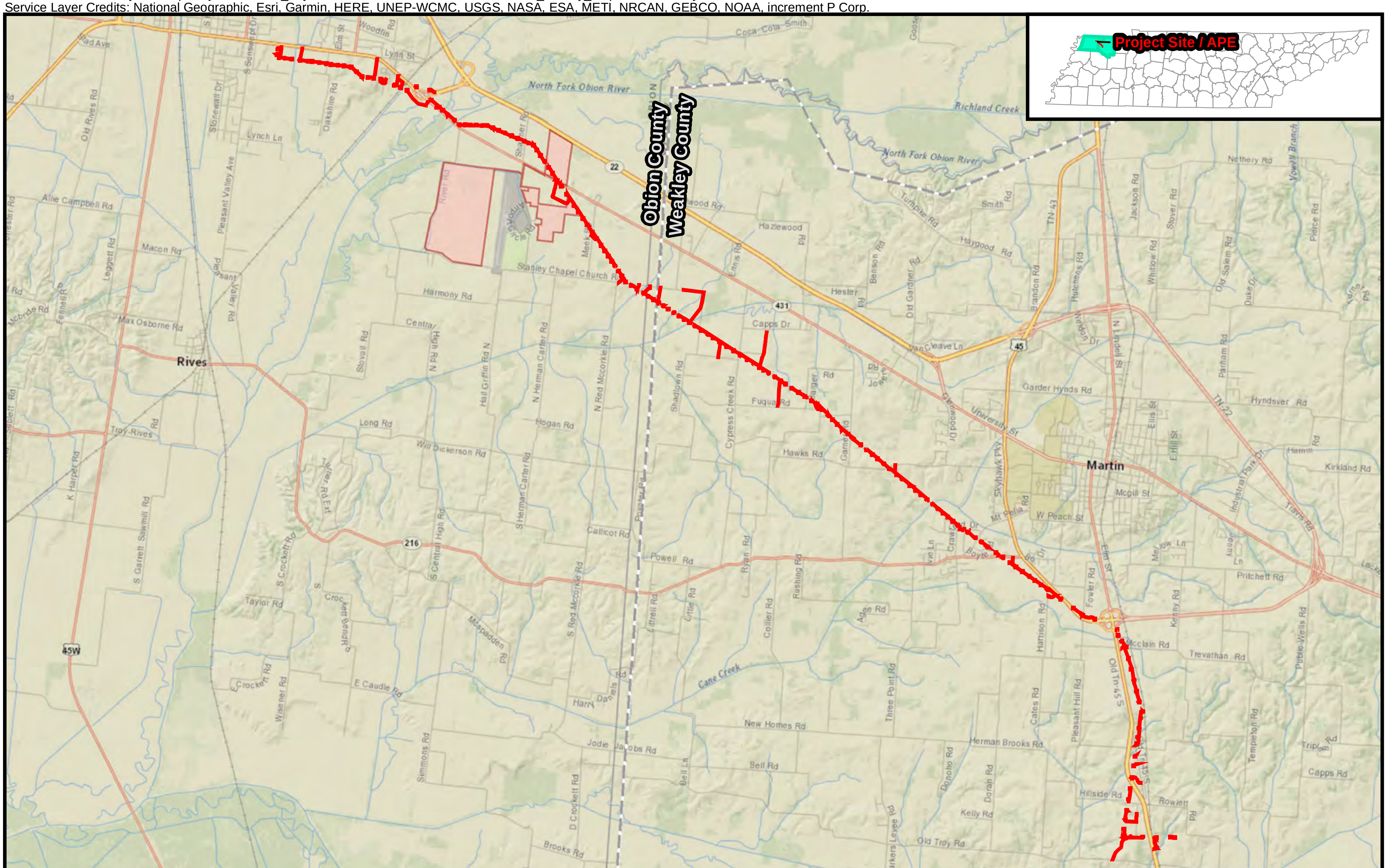
References

Tennessee Valley Authority. 2017. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities, Revision 3. Edited by G. Behel, S. Benefield, R. Brannon, C. Buttram, G. Dalton, C. Ellis, C. Henley, T. Korth, T. Giles, A. Masters, J. Melton, R. Smith, J.Turk, T. White, R. Wilson. Chattanooga, TN.: Retrieved from <https://www.tva.com/Energy/Transmission-System/Transmission-System-Projects> (n.d.).

Revision July 2017

APPENDIX B – TRANSMISSION RIGHT-OF-WAY MAPPING

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\General_Vicinity_Map.mxd olhaney 9/2/2020
Service Layer Credits: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



APE
Skyhawk Solar Project Area
County Boundary

NORTH

0 0.8 1.6
Miles

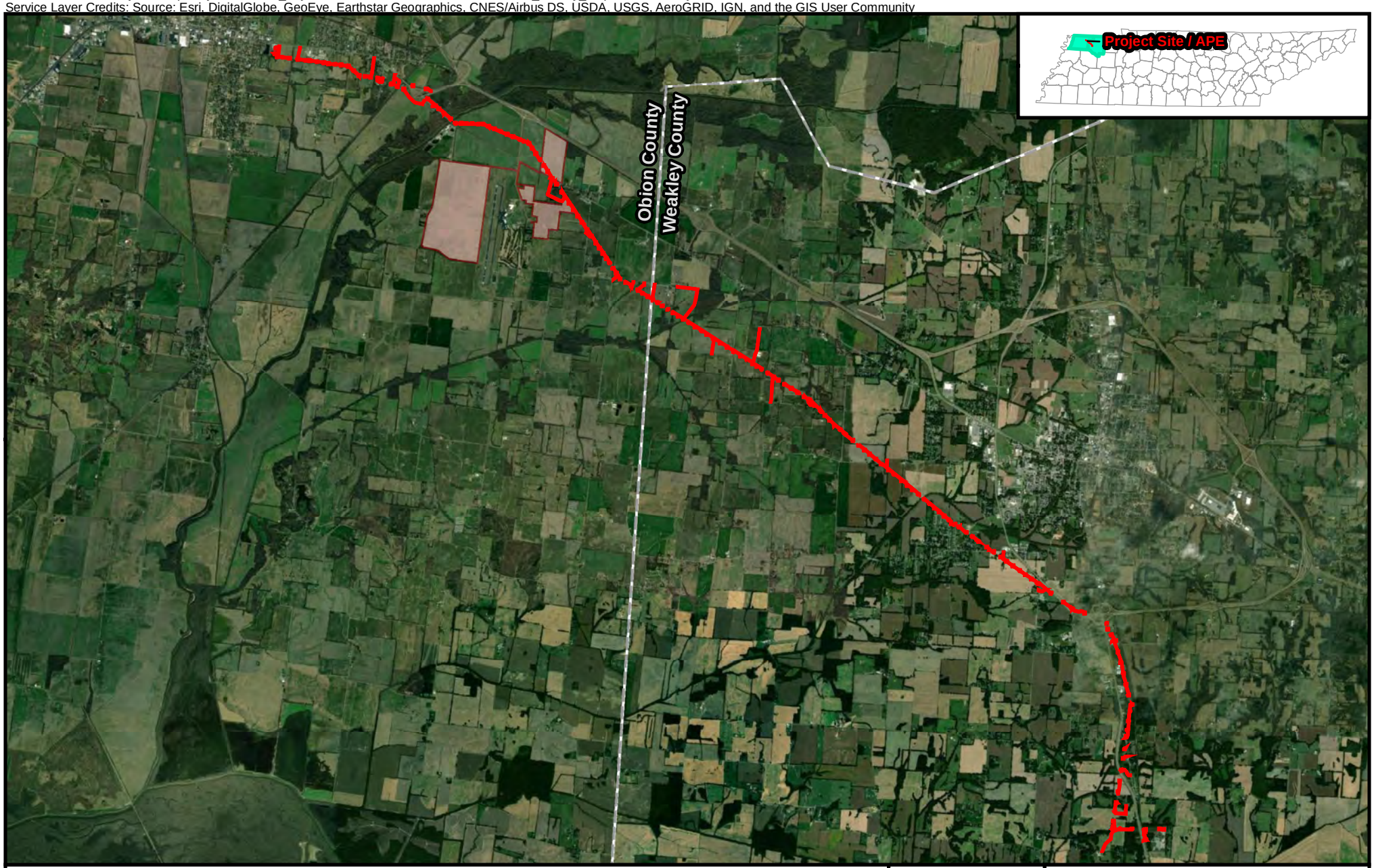
BURNS McDONNELL

General Vicinity Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN

Source: Esri, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\General_Vicinity_Map.mxd olhaney 9/2/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



APE
Skyhawk Solar Project Area
County Boundary

NORTH
0 0.8 1.6
Miles

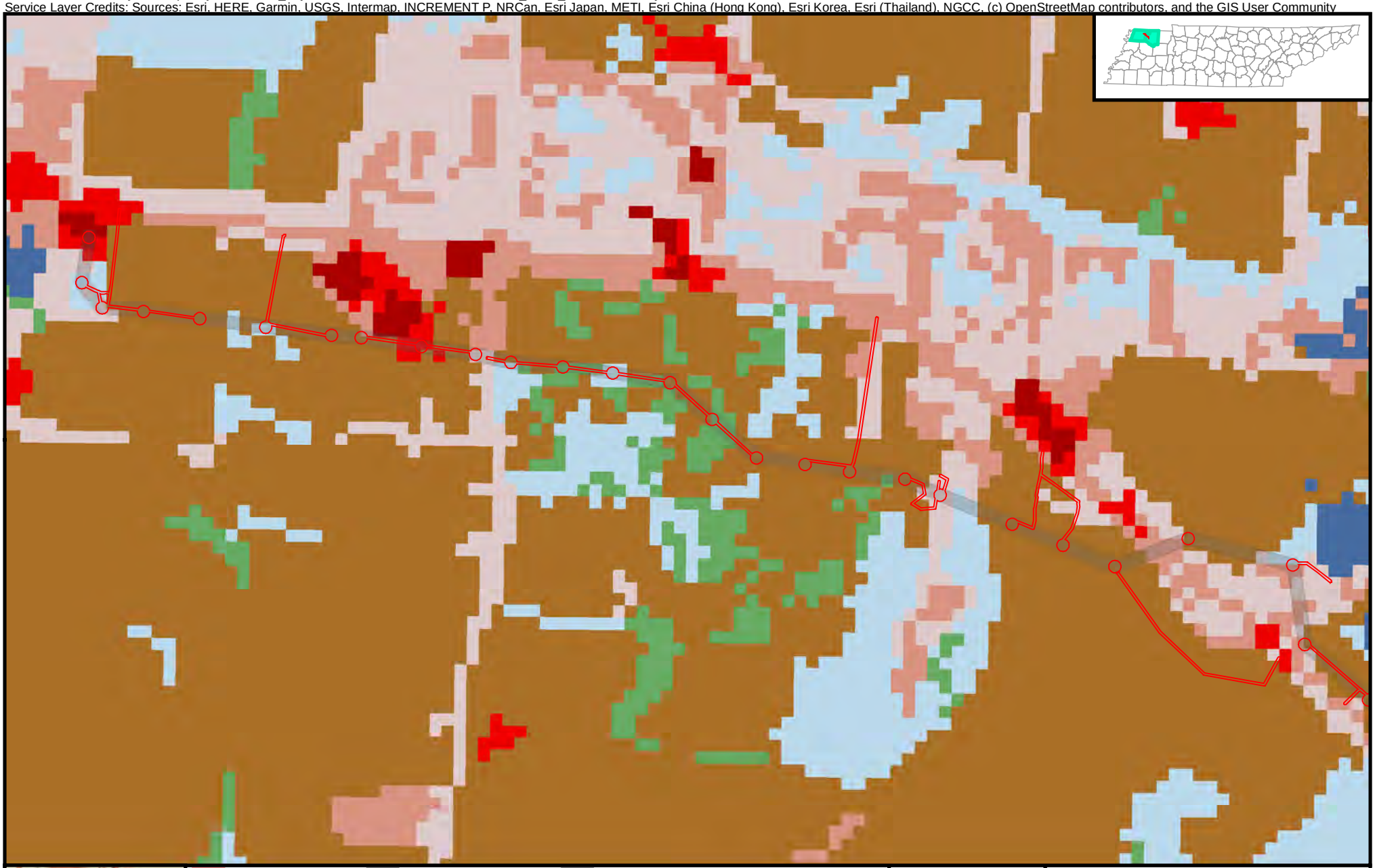
BURNS McDONNELL

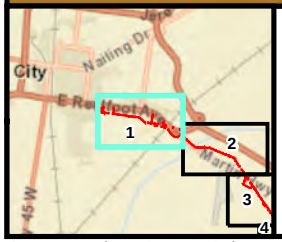
General Vicinity Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN

Source: Esri, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

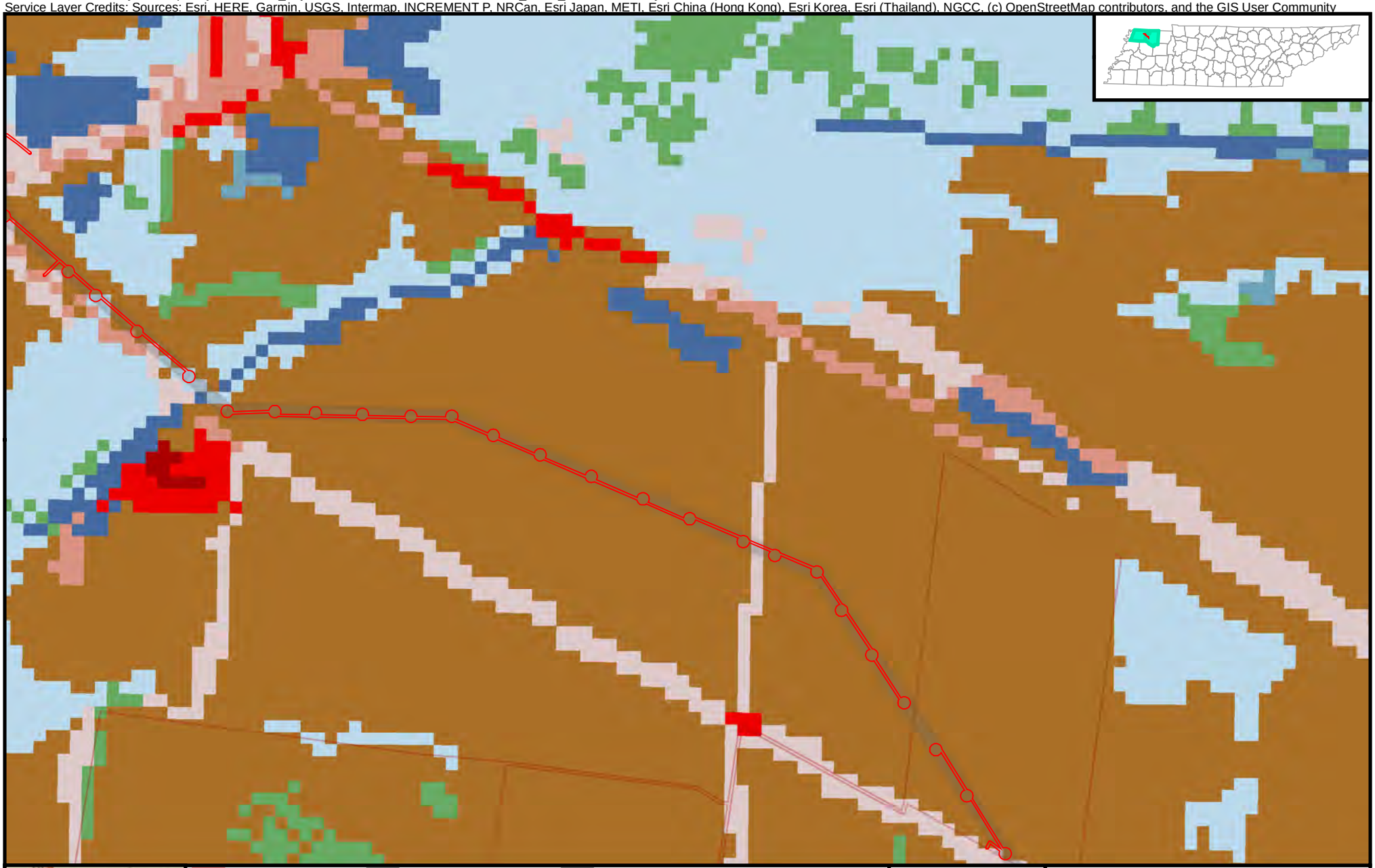
BURNS McDONNELL

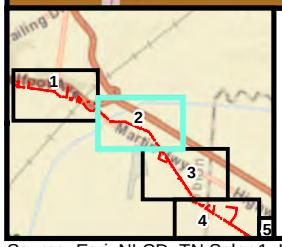
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 1 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

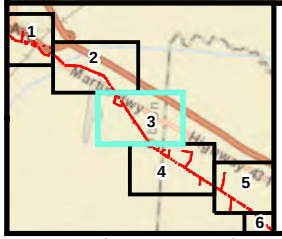
BURNS McDONNELL

Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 2 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceuous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

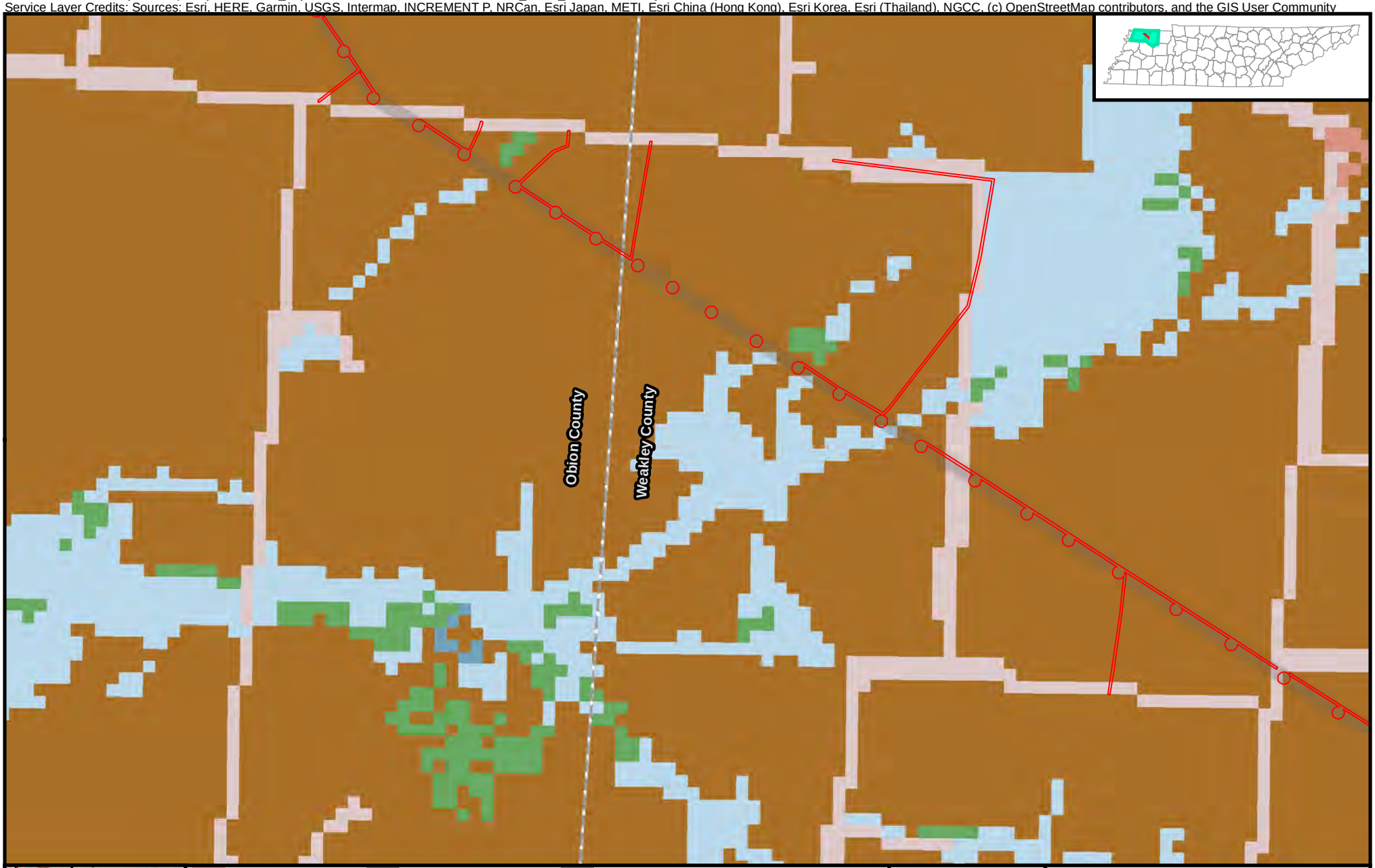
BURNS McDONNELL

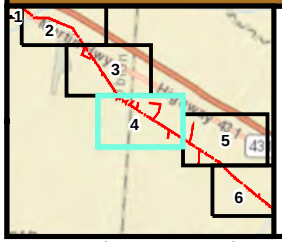
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 3 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

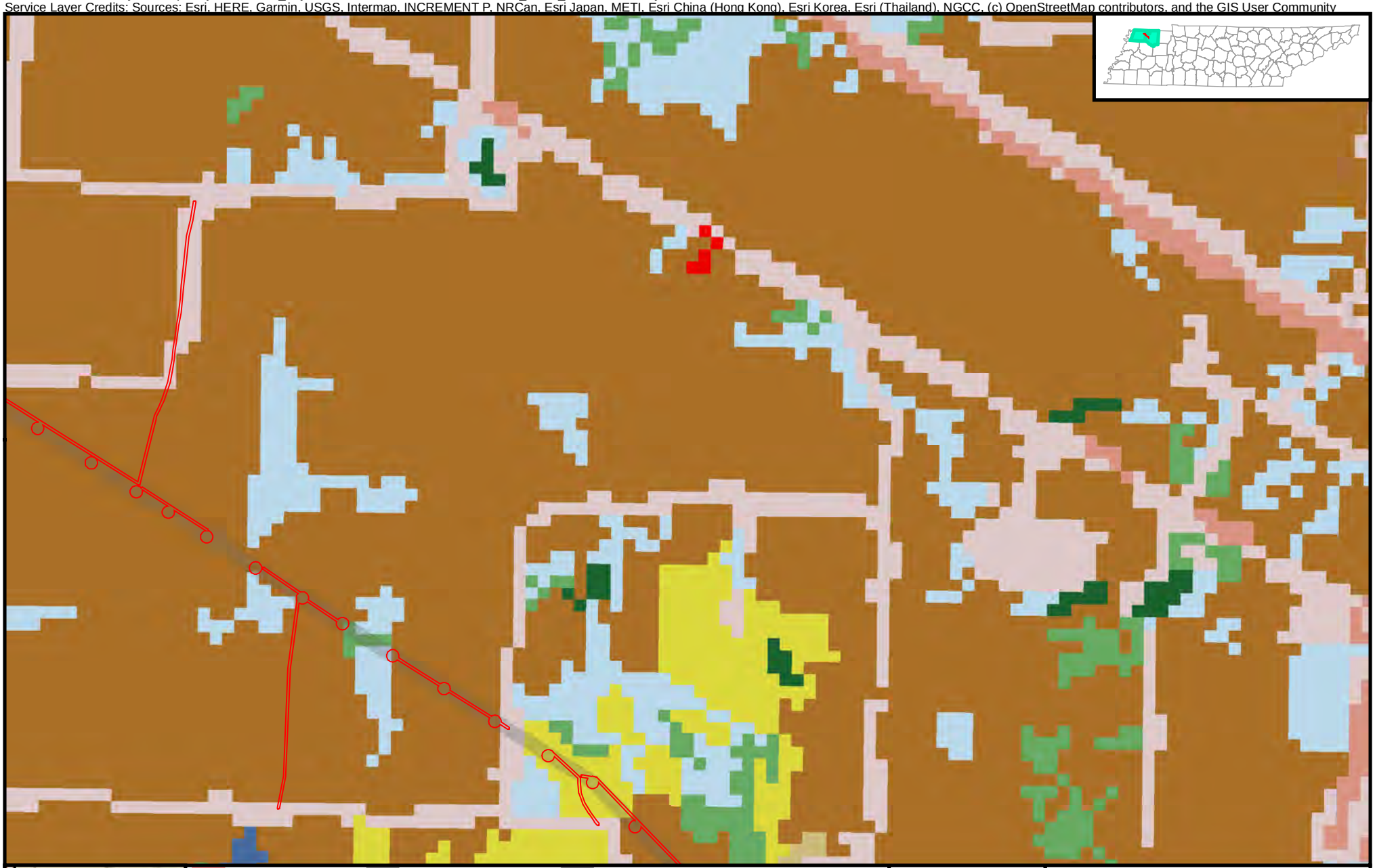
BURNS McDONNELL

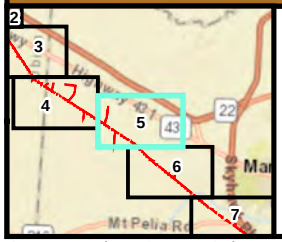
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 4 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceuous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

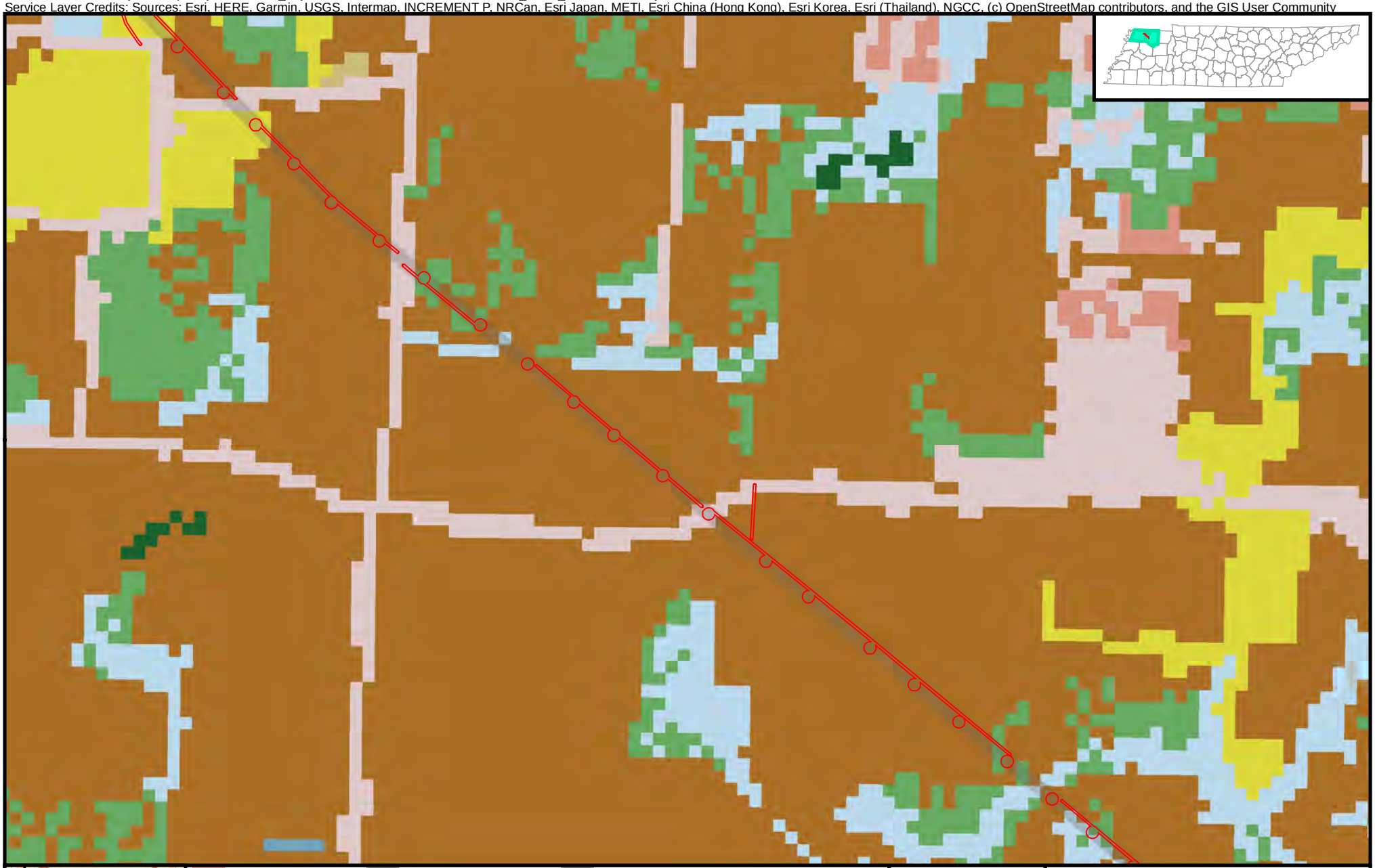
BURNS McDONNELL

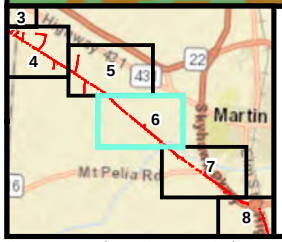
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 5 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

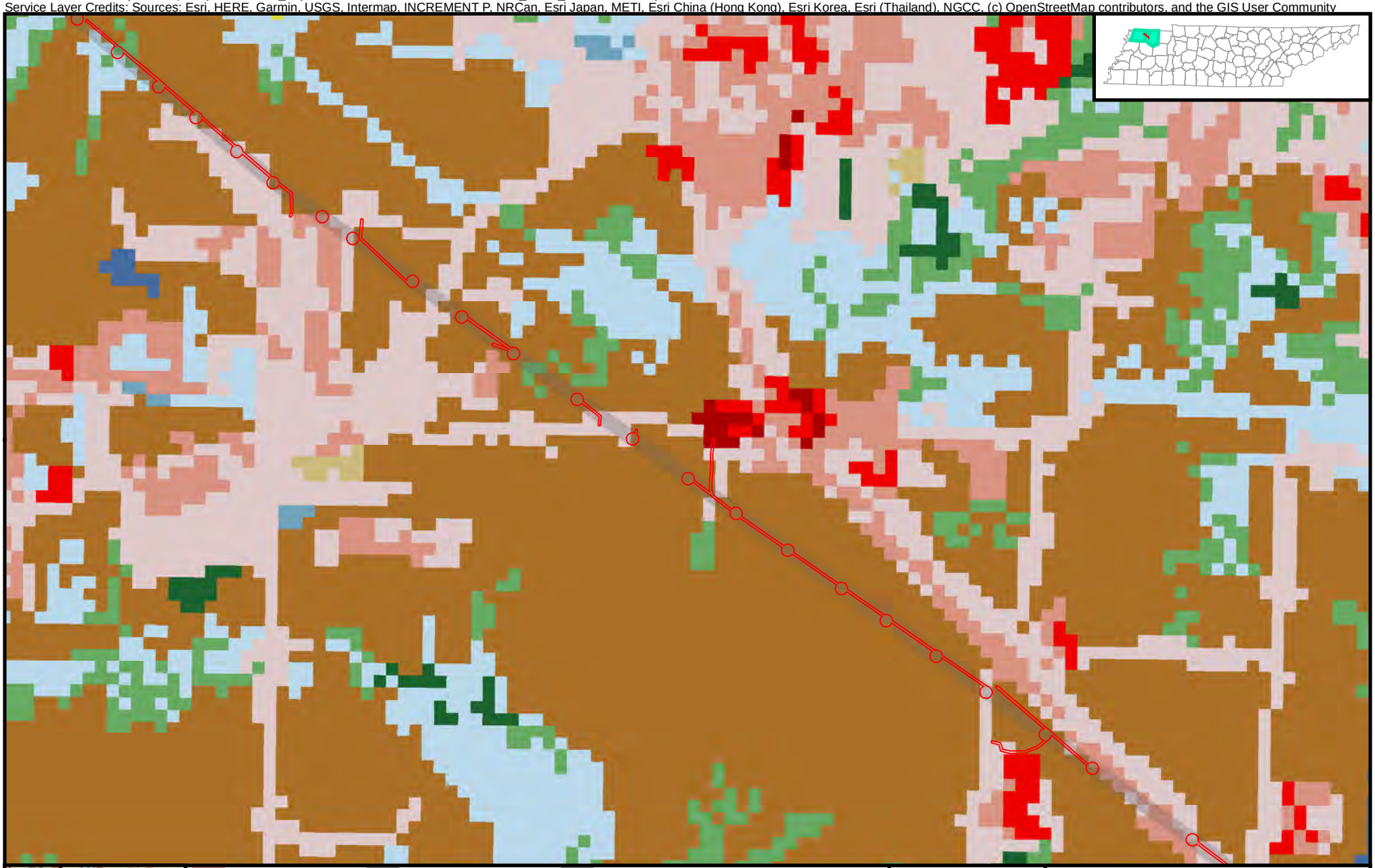
BURNS McDONNELL

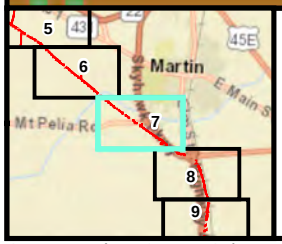
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 6 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

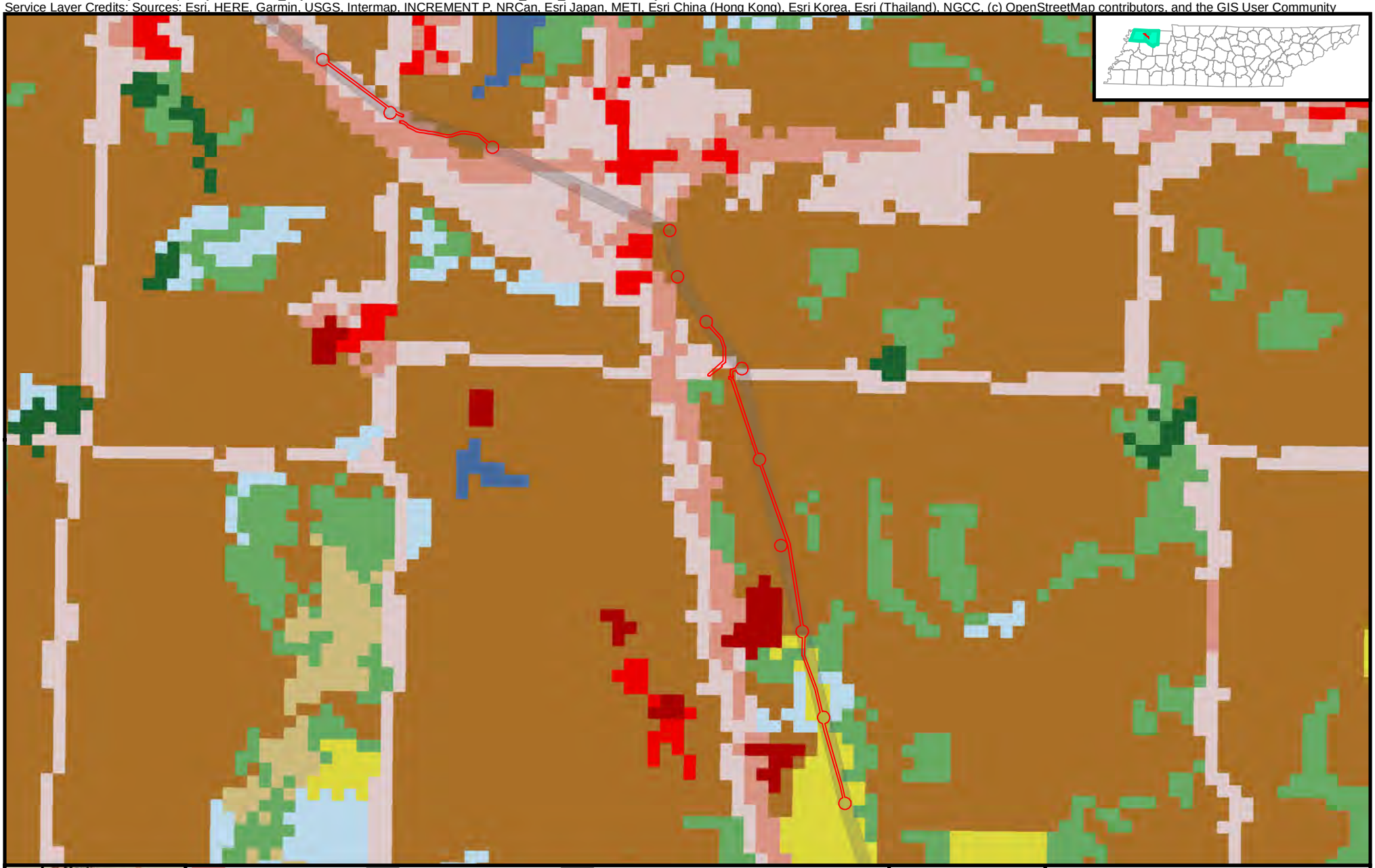
BURNS McDONNELL

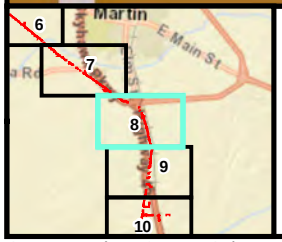
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 7 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceuous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

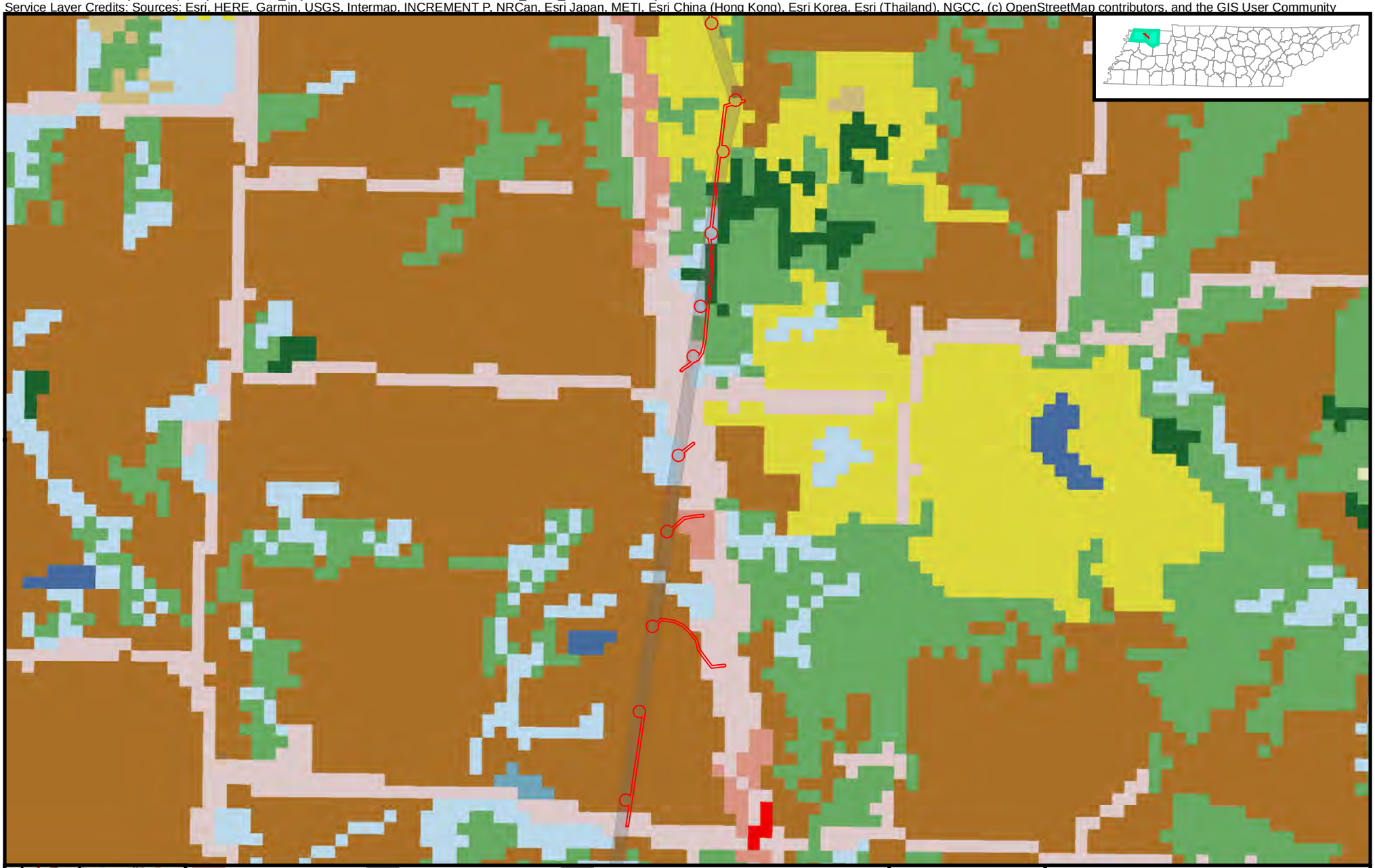
BURNS McDONNELL

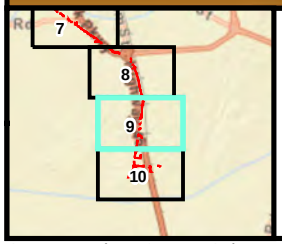
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 8 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
Open Water
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Herbaceuous
Hay/Pasture
Cultivated Crops
Woody Wetlands
Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

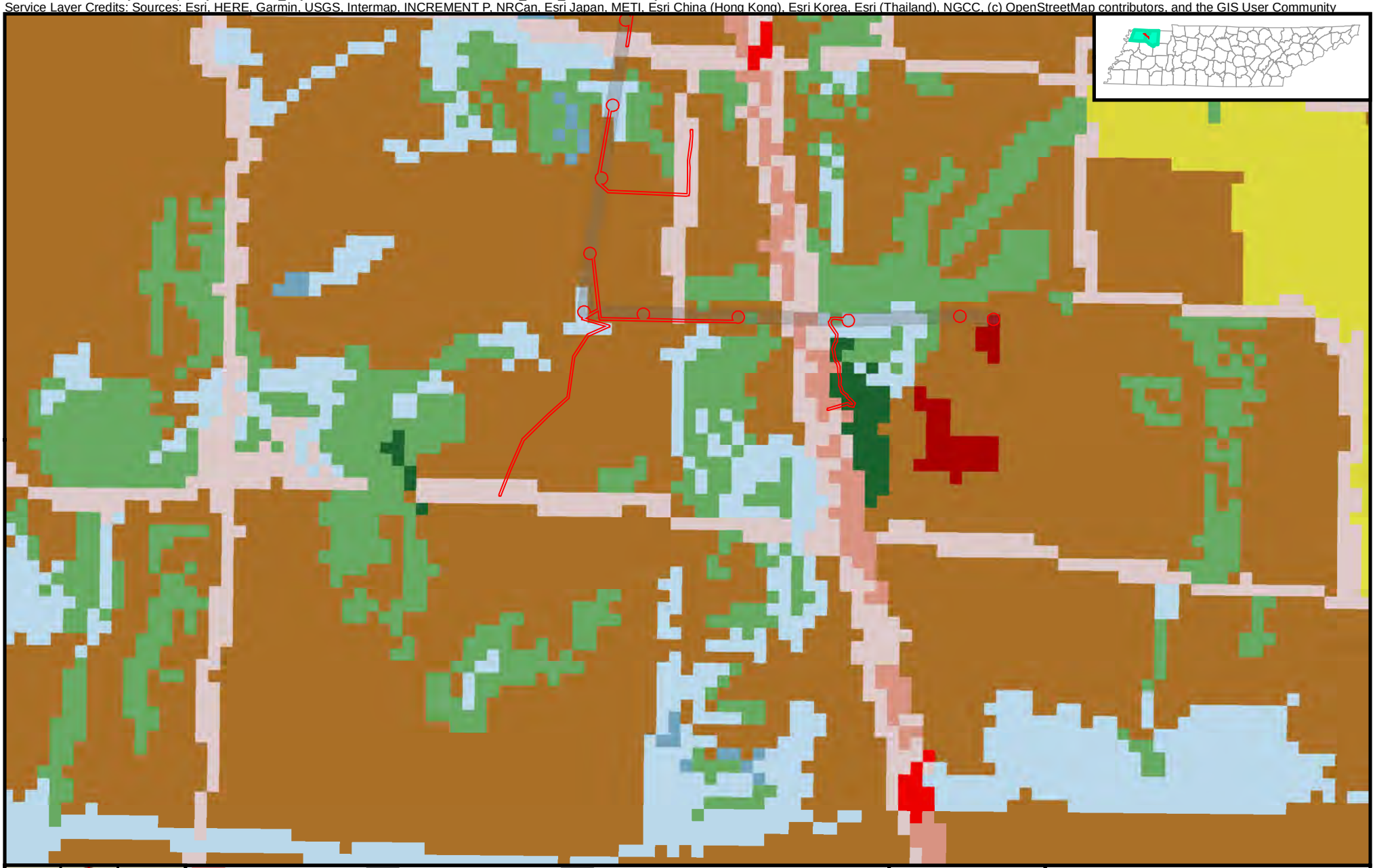
BURNS McDONNELL

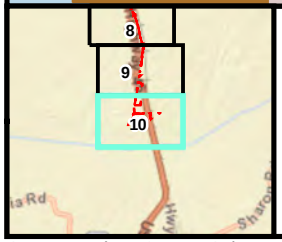
Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 9 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_LULC_v2.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceuous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceuous Wetlands

0 0.1 0.2
Miles

NORTH

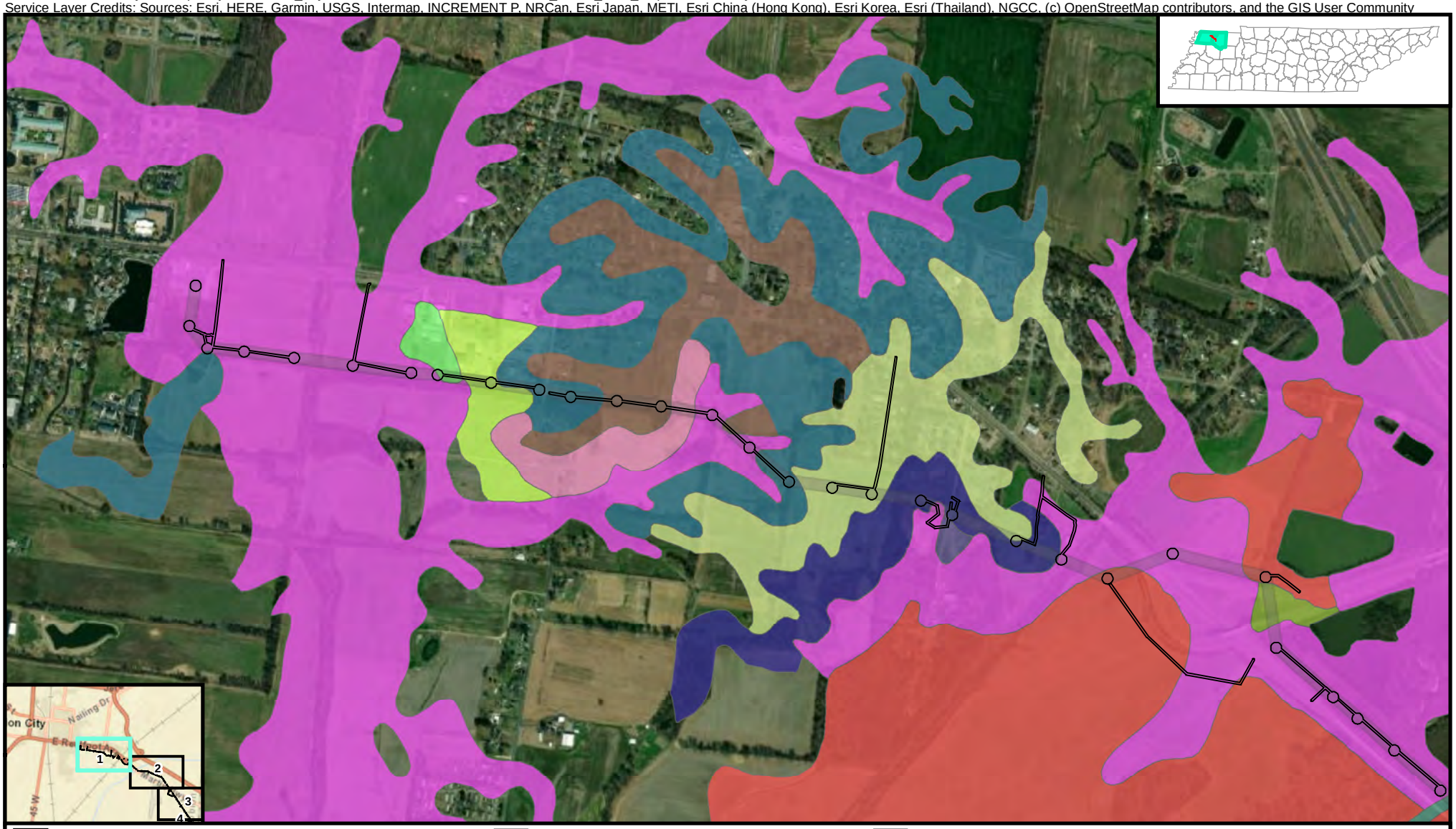
BURNS McDONNELL

Land Use Land Cover Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 10 of 10

Source: Esri, NLCD, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

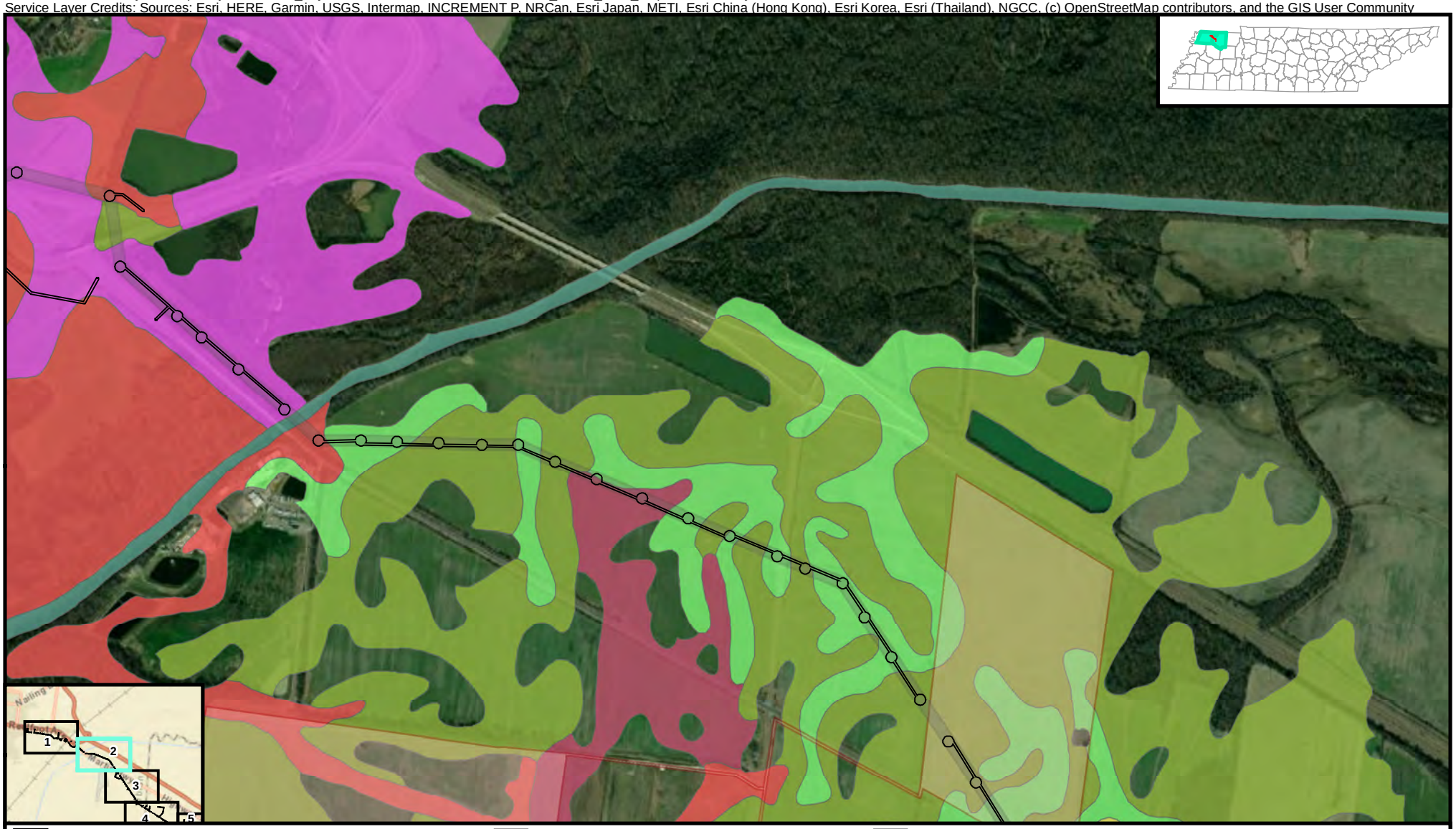
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

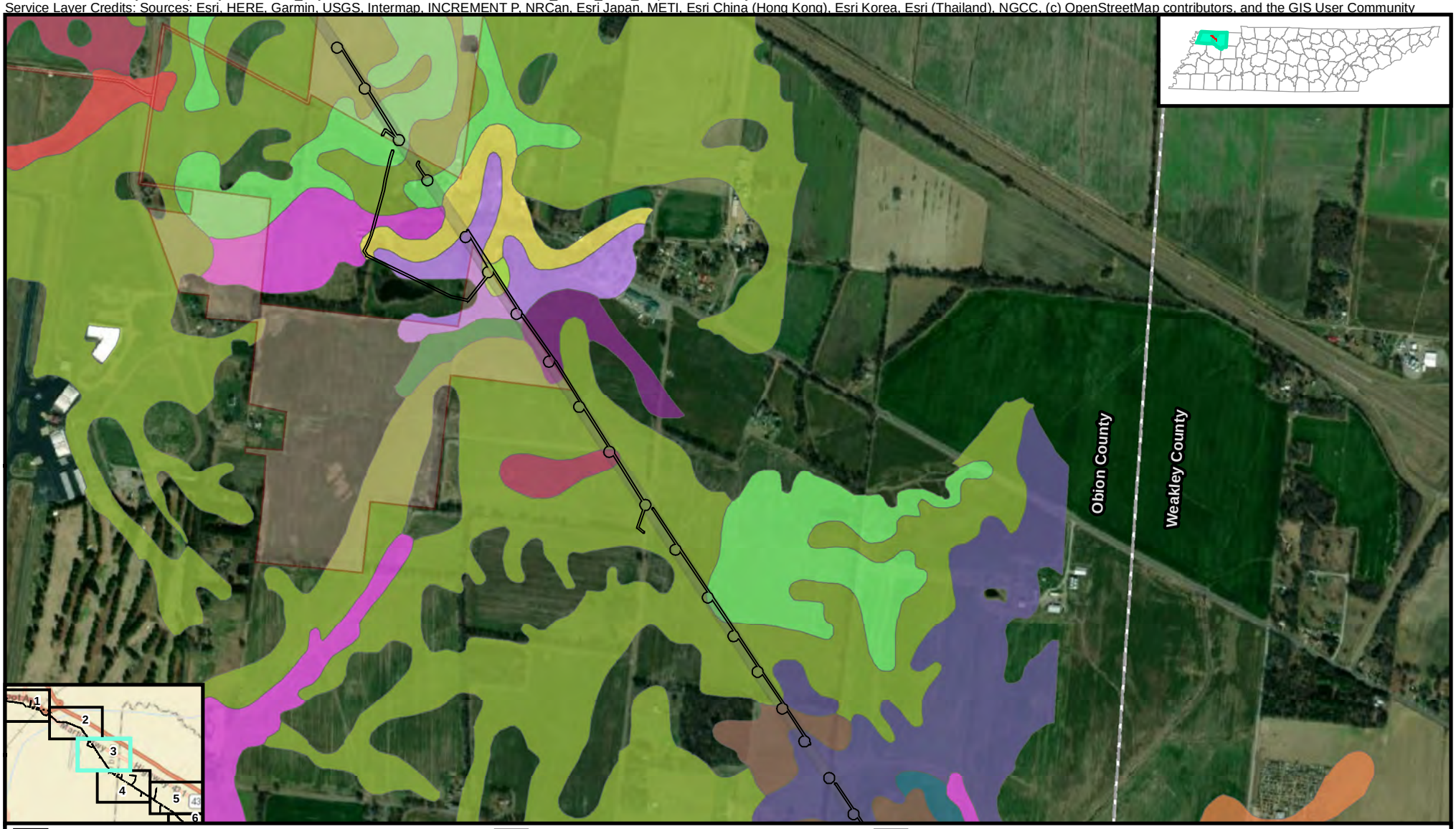
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

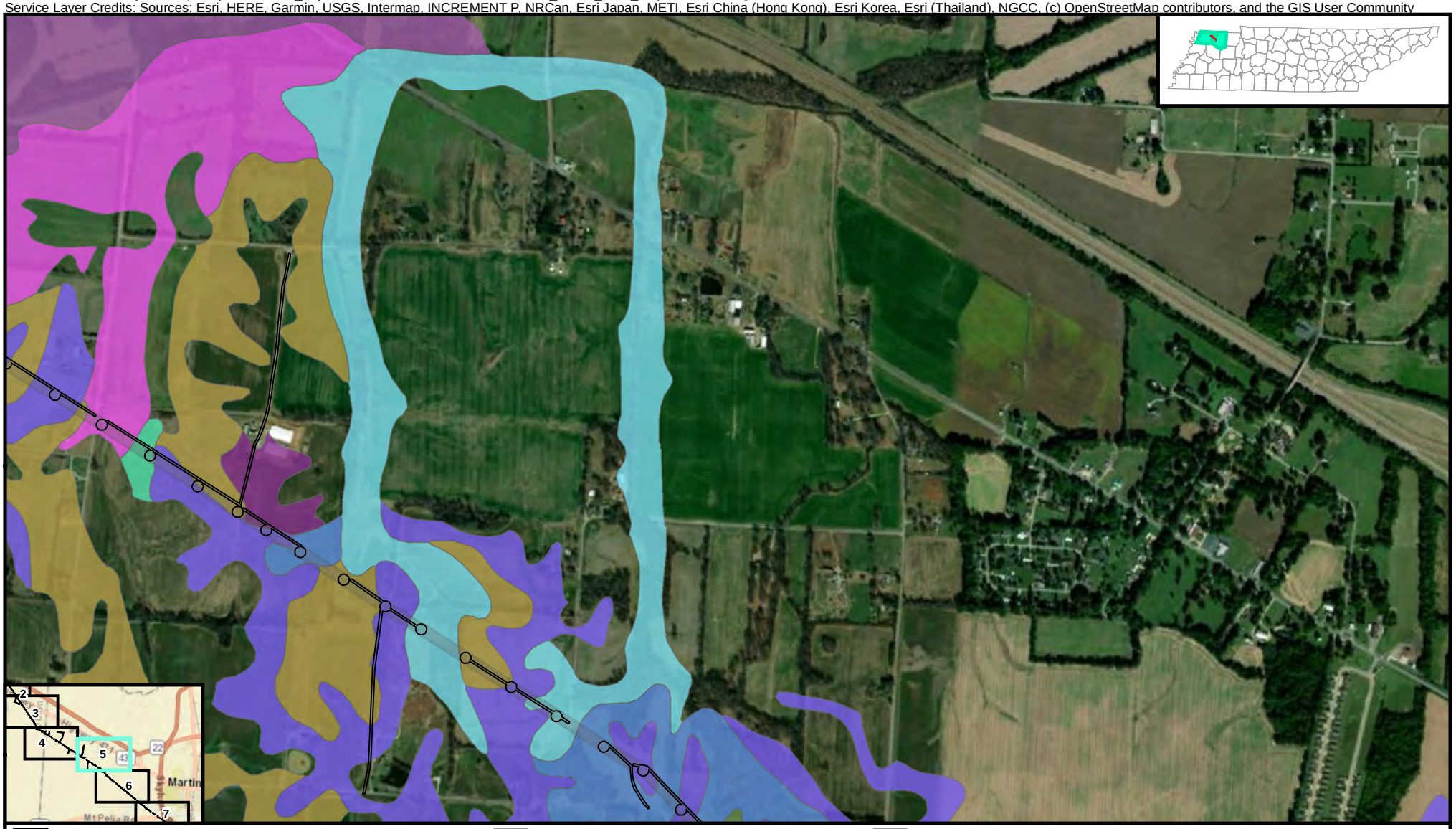
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

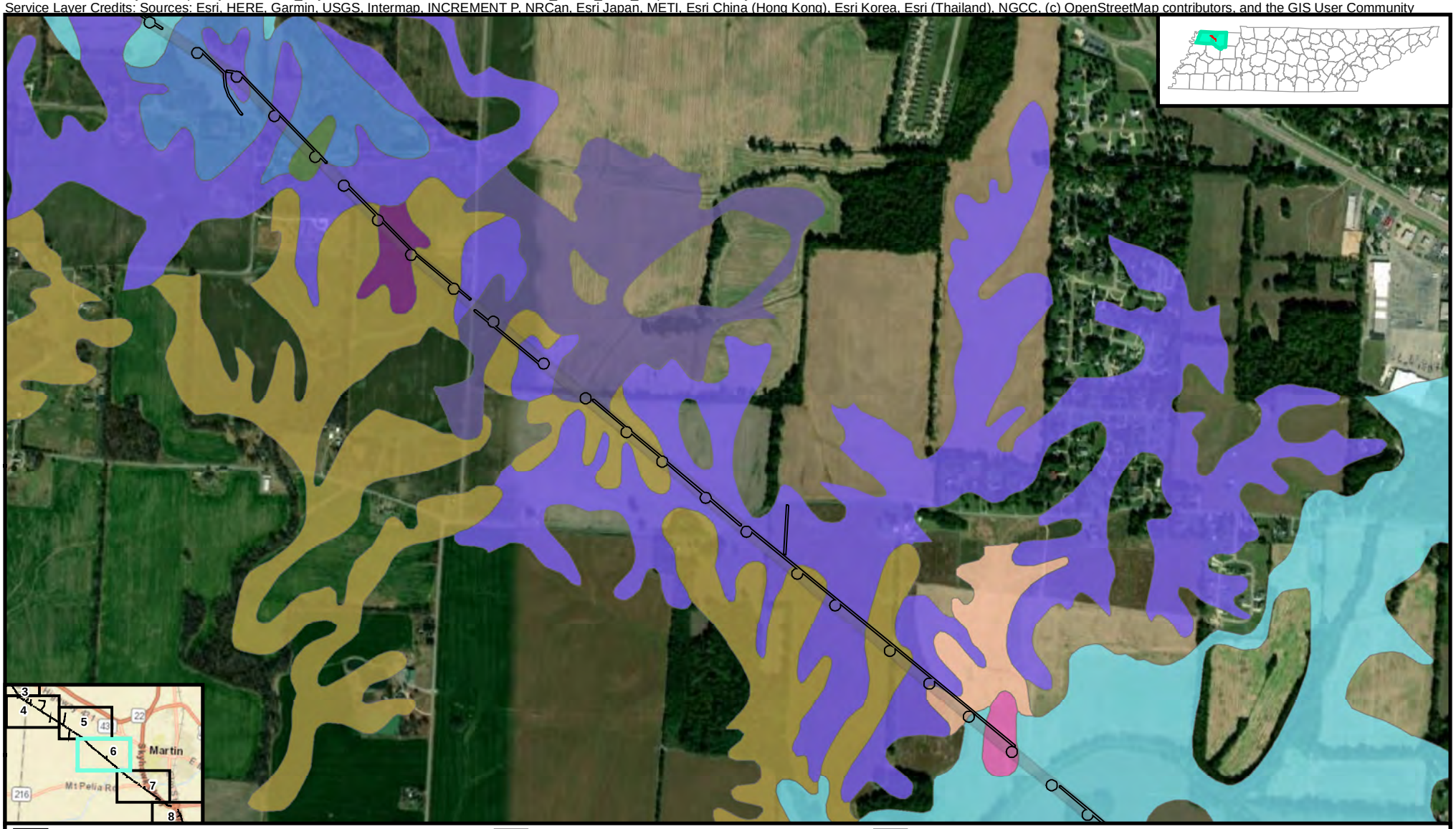
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

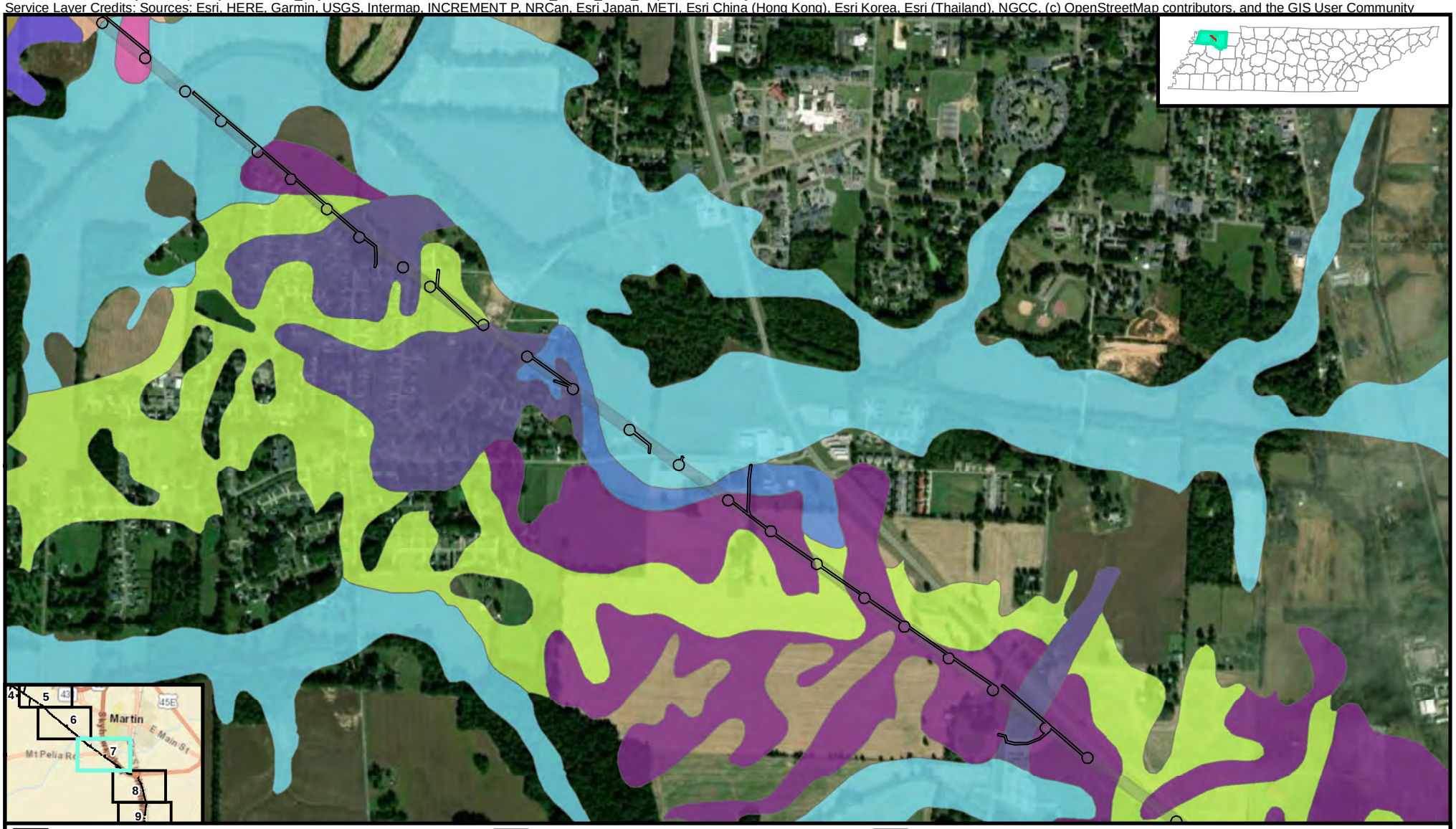
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

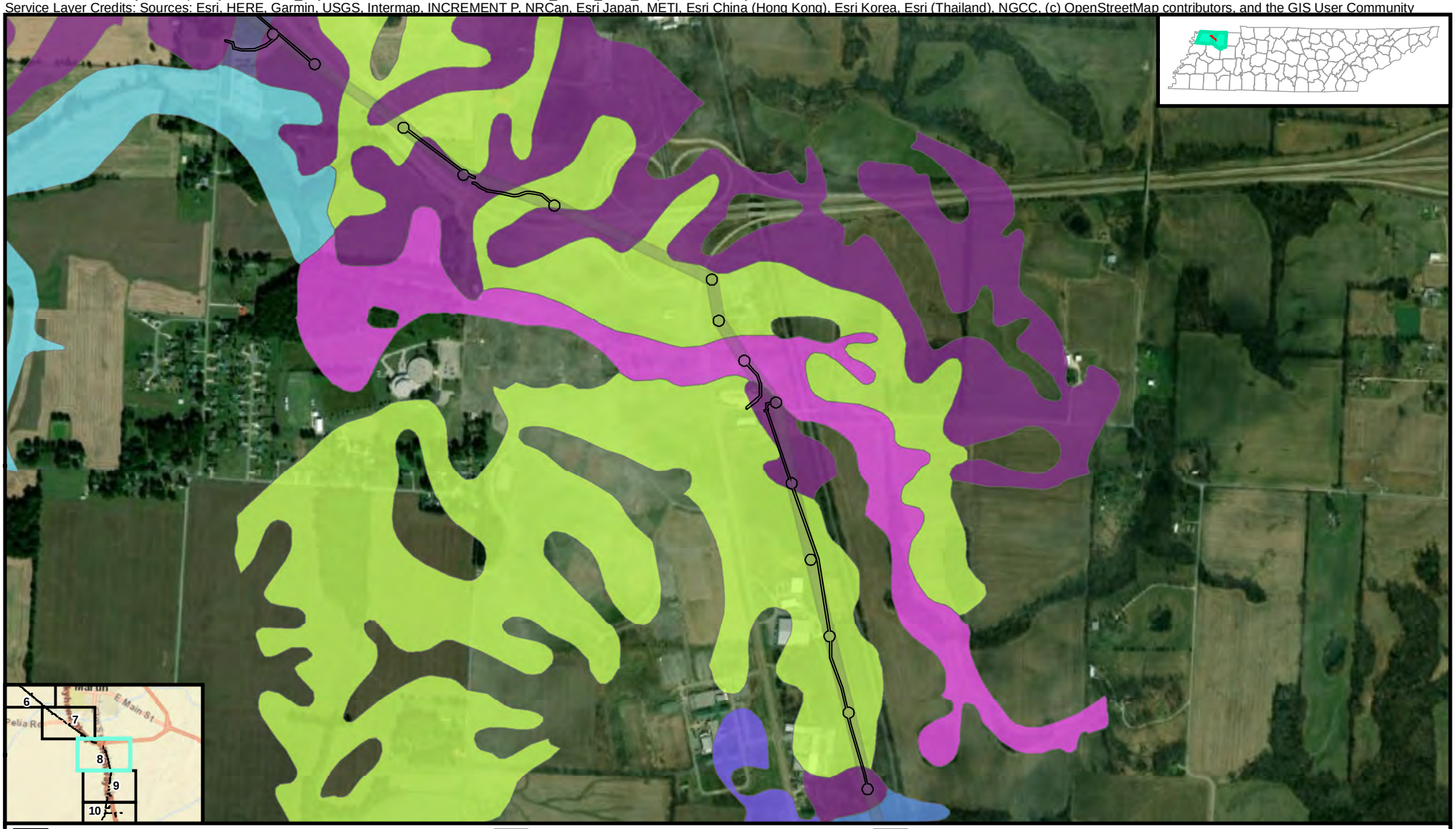
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

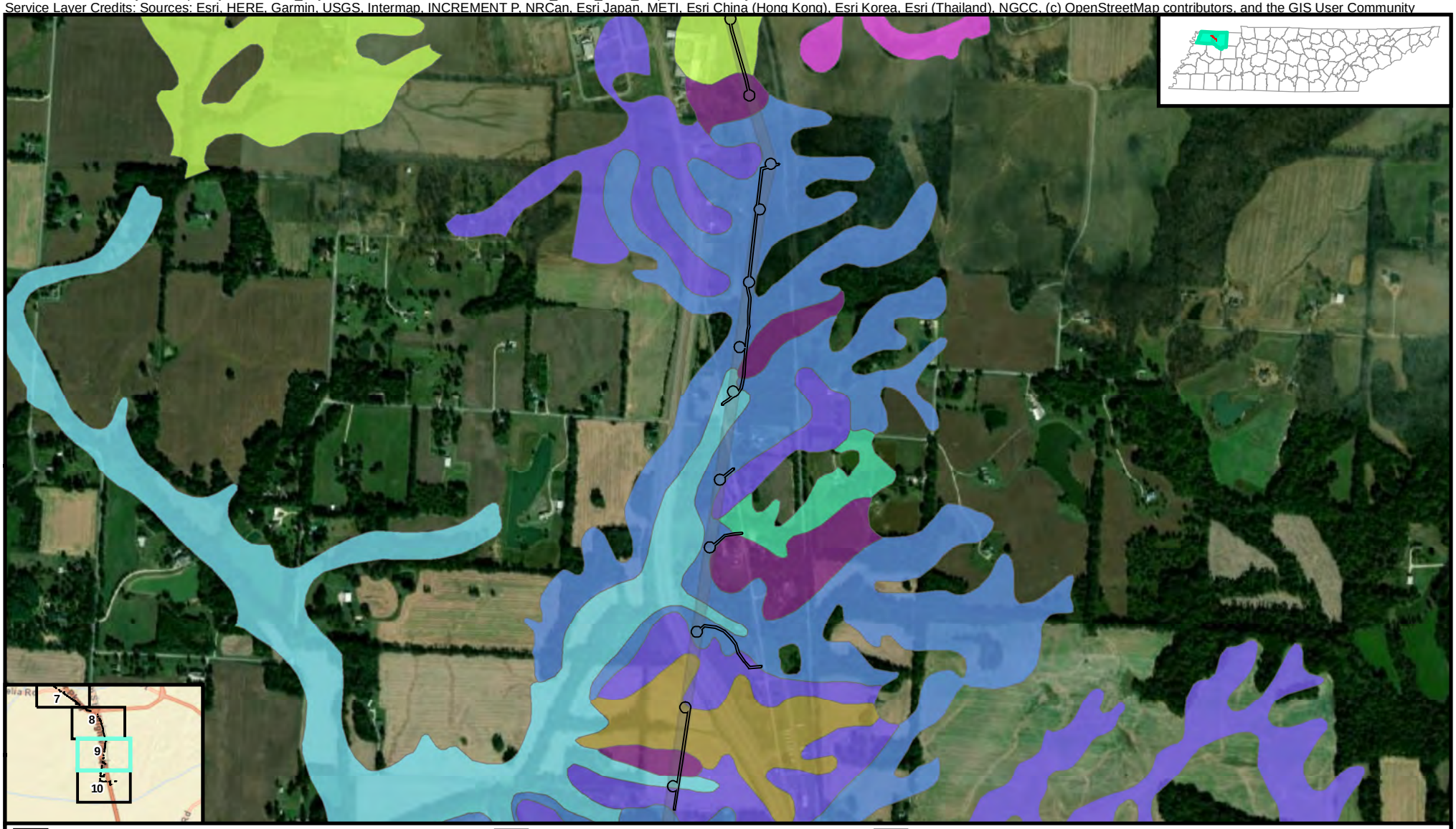
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

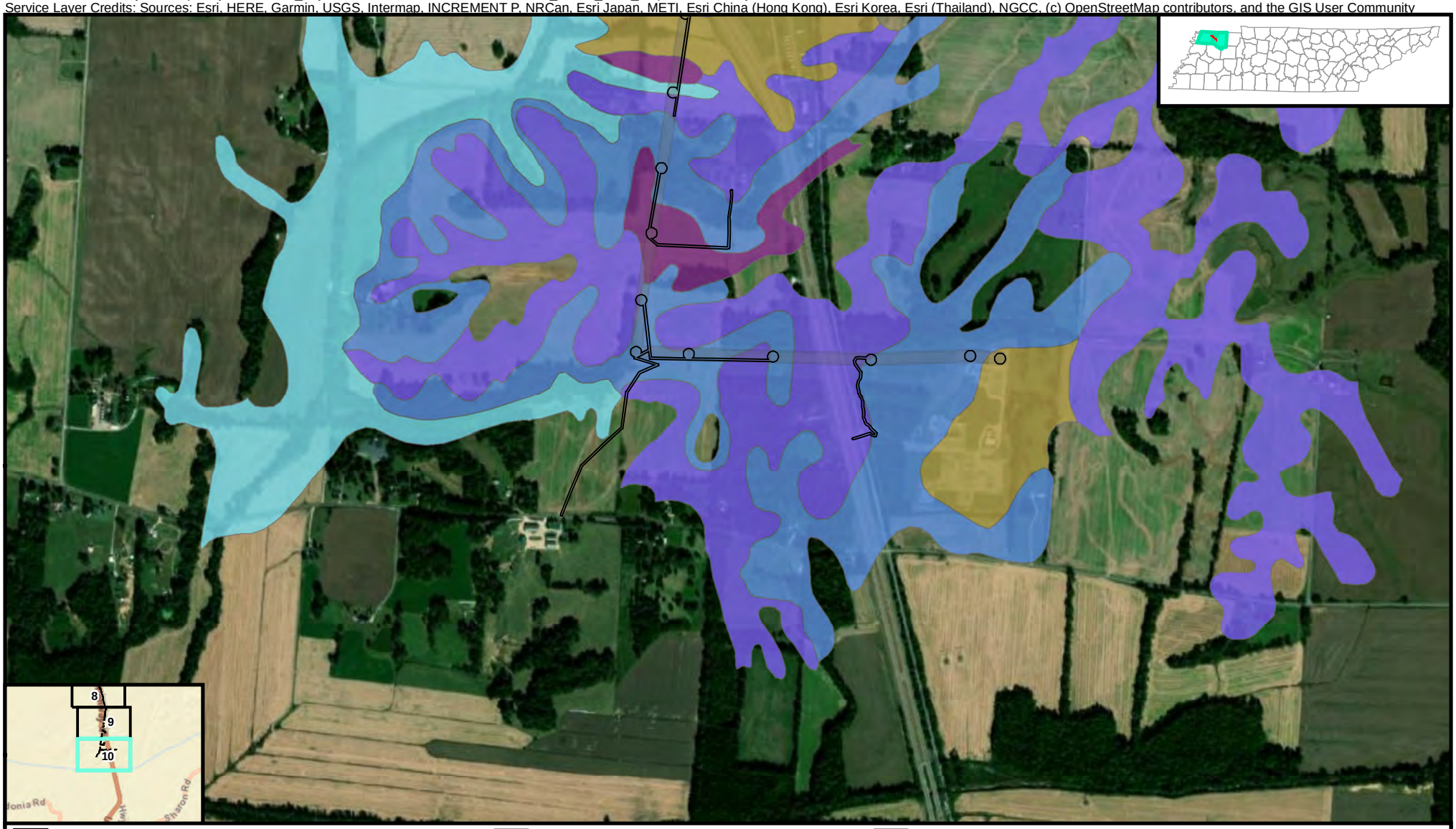
0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_NRCS_Soils_Map.mxd olhaney 9/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- APE
- Existing TVA ROW
- Skyhawk Solar Parcels
- County Boundary
- Calloway silt loam
- Center silt loam, 0 to 2 percent slopes
- Center silt loam, 0 to 3 percent slopes
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
- Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase
- Fountain silt loam
- Grenada silt loam, 2 to 5 percent slopes
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, eroded
- Grenada silt loam, 5 to 8 percent slopes, severely eroded
- Lexington silt loam, 12 to 20 percent slopes, severely eroded
- Loring silt loam, 2 to 5 percent slopes
- Loring silt loam, 2 to 5 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, eroded
- Loring silt loam, 5 to 8 percent slopes, severely eroded
- Loring silt loam, 8 to 12 percent slopes, eroded
- Loring silt loam, 8 to 12 percent slopes, severely eroded
- Memphis silt loam, 2 to 5 percent slopes, northern phase
- Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase
- Ochlockonee loam, occasionally flooded
- Routon silt loam, 0 to 2 percent slopes
- Routon-Bonn silt loam complex
- Water
- Waverly silt loam
- Waverly, Rosebloom silt loams and Frequently flooded soils

NORTH

0 0.1 0.2

Miles

Source: Esri, NRCS Soils, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/2/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

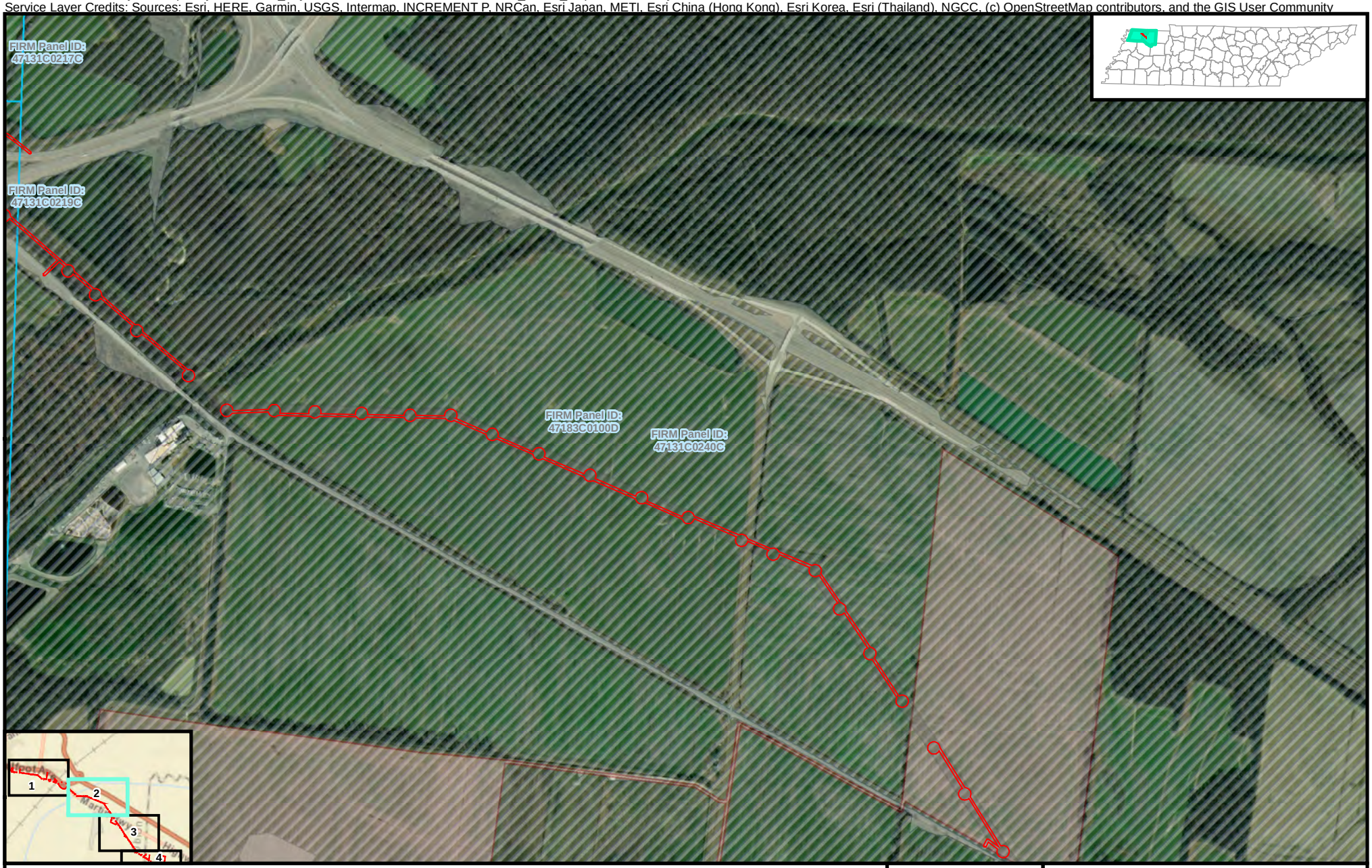
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 1 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 2 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

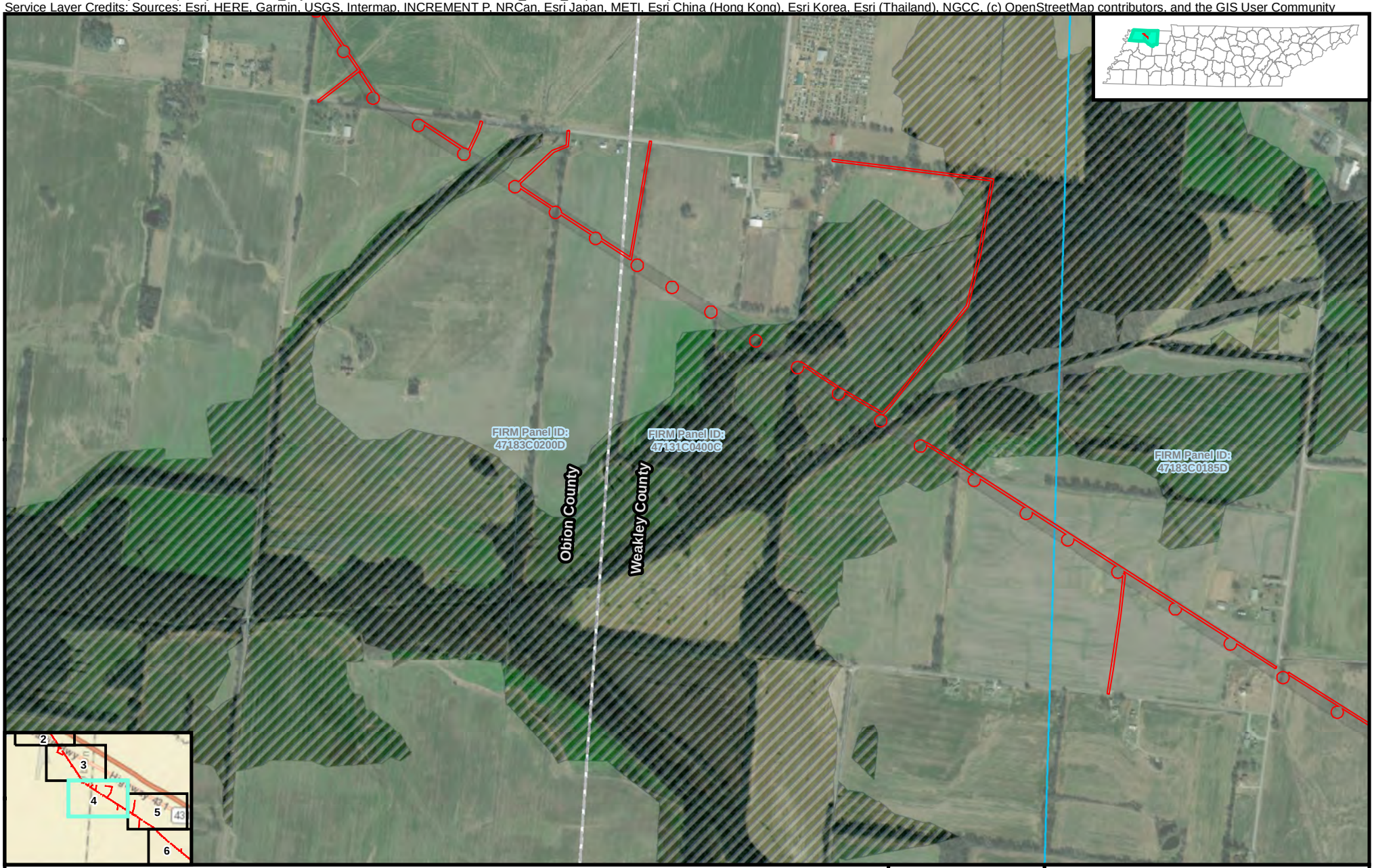
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 3 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

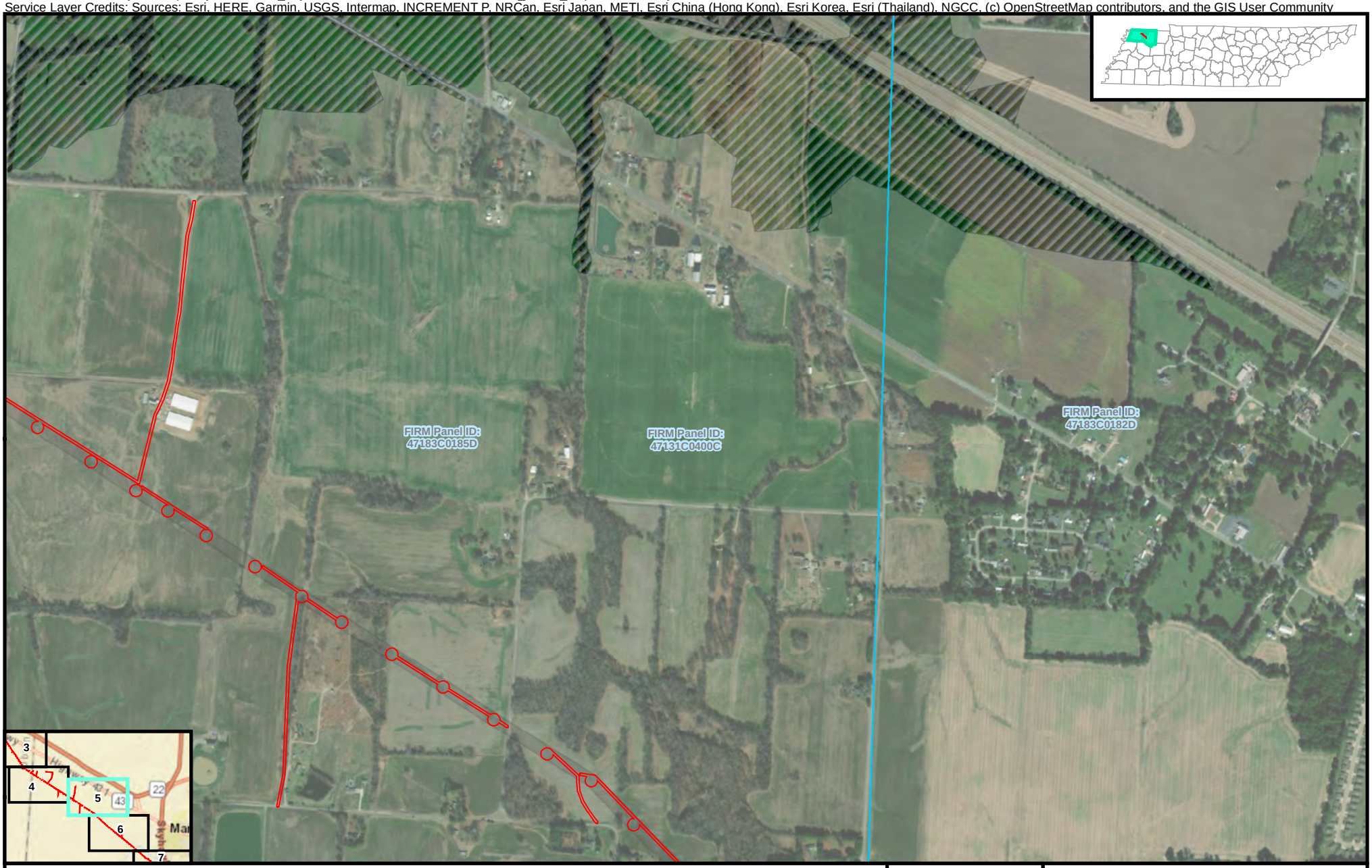
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 4 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

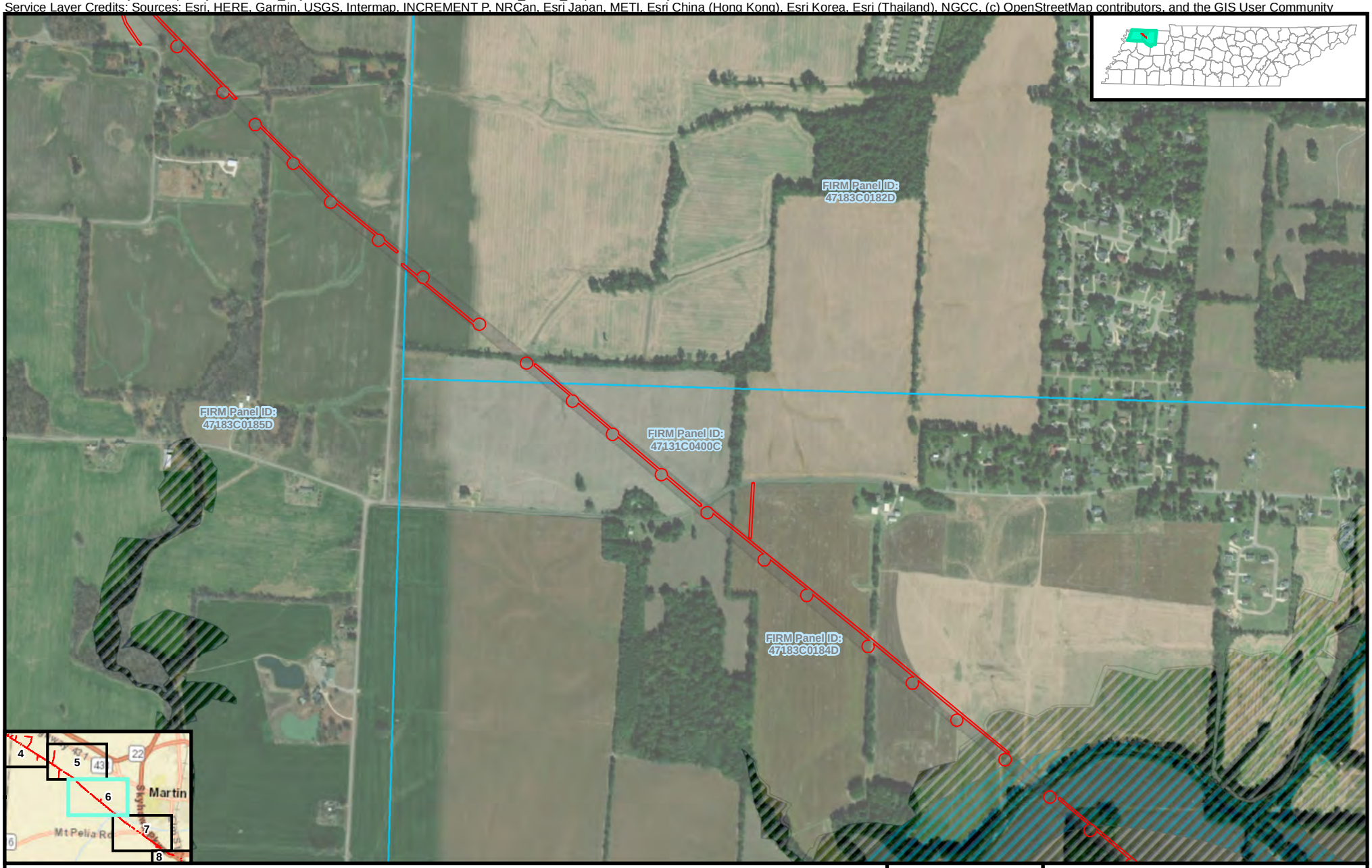
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 5 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

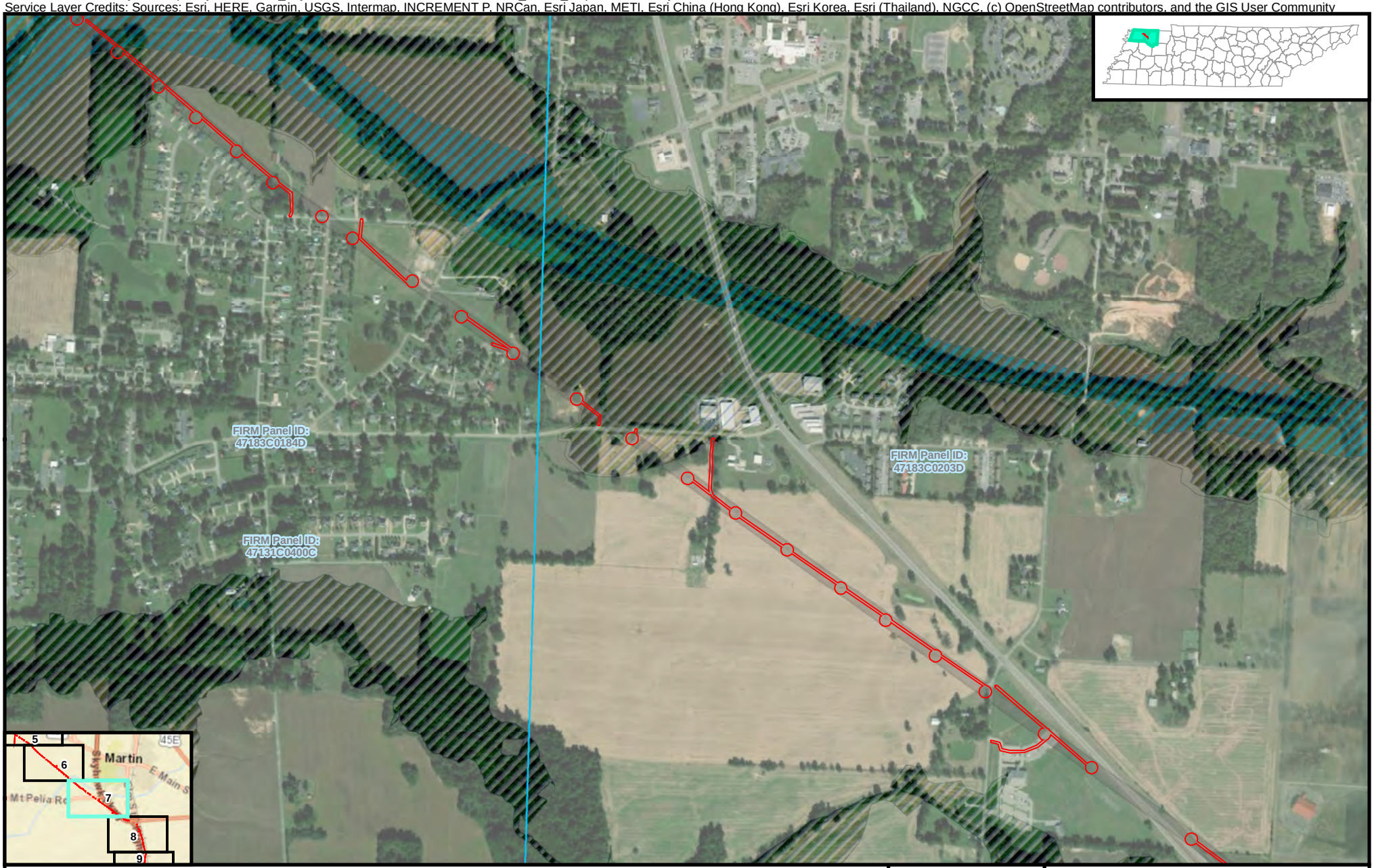
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 6 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 7 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 8 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

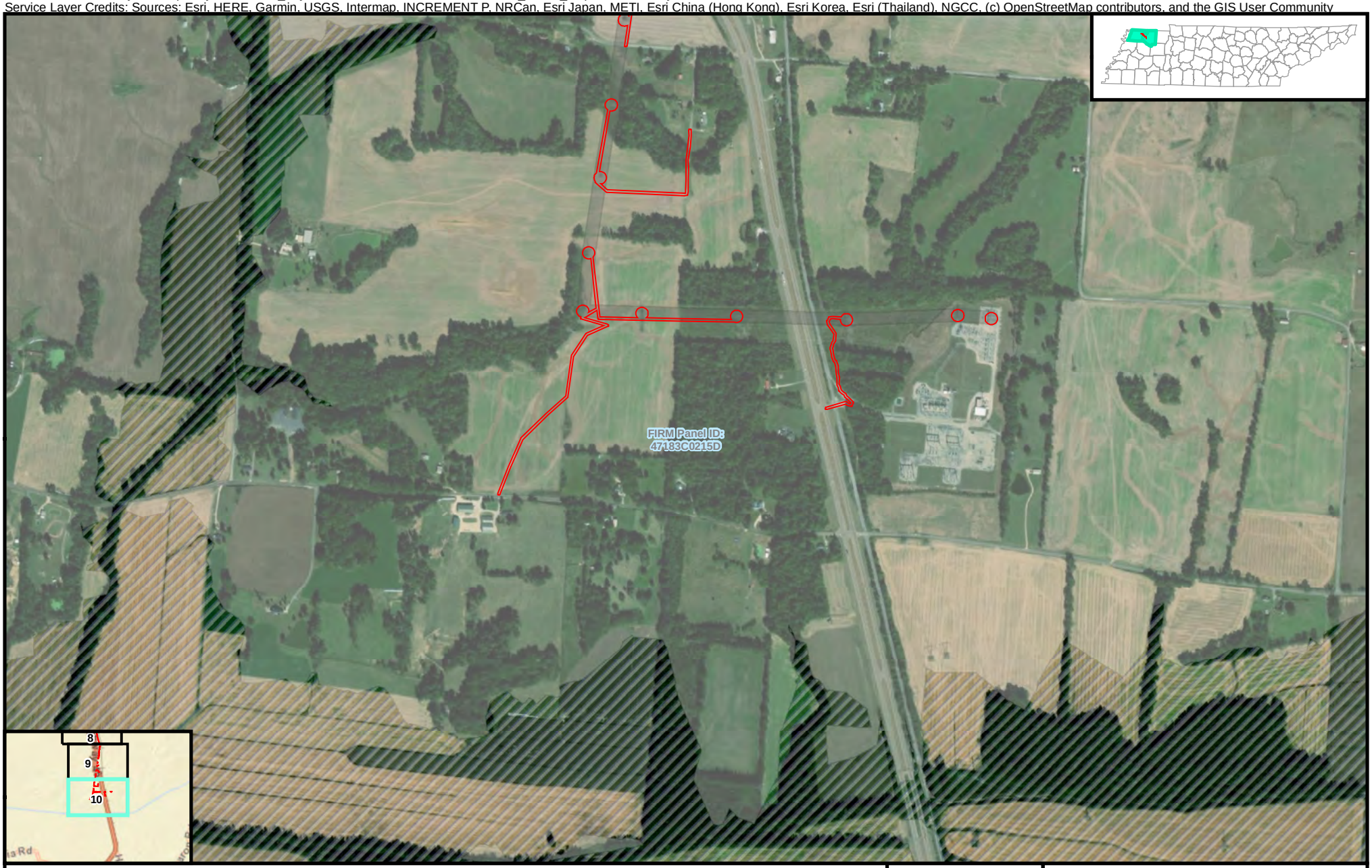
BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 9 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\EA\TLine\TLine_FEMA_Map.mxd olhaney 9/1/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



APE
Existing TVA ROW
Skyhawk Solar Parcels
County Boundary
FEMA FIRM Panel ID
Regulated Floodway
100-Year Floodplain (Zones A and AE)
Area of Minimal Flood Hazard (Zone X)

NORTH
0 0.1 0.2
Miles

BURNS McDONNELL

FEMA Flood Hazard Map
Transmission Line Improvements
Skyhawk Solar Project
Obion and Weakley Counties, TN
Page 10 of 10

Source: Esri, FEMA NFHL, TN Solar 1, LLC, Burns & McDonnell

Issued: 9/1/2020

APPENDIX C – FARMLAND CONVERSION IMPACT RATING FORM (AD-1006)

[Farmland Conversion Impact Rating Form (AD-1006) to accompany Final EA]

APPENDIX D – SKYHAWK WETLAND DELINEATION REPORTS

Wetland Delineation Report

TN SOLAR 1, LLC

Skyhawk Solar Project
B&M Project No. 121610

July 2020

Wetland Delineation Report – Photovoltaic Array Parcels

prepared for

Skyhawk Solar Project
TN SOLAR 1, LLC

Obion County, Tennessee

B&M Project No. 121610

July 2020

prepared by

Burns & McDonnell Engineering Company, Inc.
Atlanta, Georgia

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was contracted by TN Solar 1, LLC, to provide wetland delineation services for the proposed Skyhawk Solar Project (Project), specifically potential parcels upon which solar array facility sites may be installed, in Obion County, Tennessee (Figure A-1, Appendix A). The following sections provide information on the proposed Project and summarize the completed wetland delineation.

INTRODUCTION

TN Solar 1, LLC plans to construct a new utility scale solar farm and associated infrastructure on certain parcels in Obion County, Tennessee. The Project is bounded by Tennessee State Route (SR-) 22 to the north, the Obion-Weakley county line to the east, Stanley Chapel Church Road and Stone Road to the south, and the North Fork Obion River to the west, approximately 4.1 miles southeast of Union City, Tennessee.

The Project has the potential to impact wetlands or other water bodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate the presence of wetlands and other water bodies, including streams, drainages, and ponds. The delineation was conducted within numerous parcels being considered for the proposed Project (Survey Area) as identified by TN Solar 1, LLC. The Survey Area included in the wetland delineation totaled approximately 894 acres.

METHODS

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

Existing Data Review

Burns & McDonnell reviewed available background information for the proposed Project prior to conducting a site visit. This available background information included:

- U.S. Geological Survey (USGS) 7.5-minute topographic maps (Union City, Harris, Gardner, and Rives, TN quadrangles),
- USGS National Hydrography Dataset (NHD),
- U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps,
- National Agriculture Imagery Program (NAIP) aerial photography (2020),
- Federal Emergency Management Agency (FEMA) 2020 National Flood Hazard Layer (NFHL), and
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Obion County, Tennessee.

Figures A-2 and A-3 in Appendix A depict this data. The NRCS Climate Analysis for Wetlands Table (WETS Table) was also reviewed to evaluate precipitation conditions.

Basing the presence or absence of wetlands on only NWI maps cannot be assumed as an accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always

identified on NWI maps. Therefore, a detailed field survey was conducted to identify any wetlands or other water bodies that may be present.

Wetland Delineation Field Survey

A wetland delineation was completed March 2 through March 4, April 16, and April 20, 2020. The delineation was conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region – Version 2.0 (Regional Supplement). Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were surveyed using a sub-meter accurate global positioning system (GPS) unit. A photograph taken at each sample plot is included with each data form (Appendix B). Natural color photographs depicting water bodies, streams, and representative field conditions were taken and are included in Appendix C (Photographs C-1 through C-49). Additional representative photographs were taken during the wetland delineation to document onsite conditions where sample plots were not collected. These additional photographs are not included in Appendix C but can be provided upon request.

RESULTS

The following sections describe the results of the desktop data review and the completed wetland delineation.

Existing Data Review

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other water bodies (Figure A-2). The USGS topographic maps indicate the Survey Area crosses open fields with gentle slopes.

Review of FEMA's National Flood Hazard Layer indicates multiple locations of the Survey Area are within a 100-year floodplain (Figure A-2).

The NWI data identify four mapped wetlands; and, the NHD data identify one stream within the Survey Area. The North Fork Obion River is located outside of, but immediately adjacent to the Survey Area (Figure A-2).

The 2018 NAIP aerial photography indicates the Survey Area consists largely of open fields with limited wooded areas (Figures A-3 and A-4).

The USDA NRCS SSURGO digital data indicate that portions of 19 soil map units are within the Survey Area (Figure A-3). Of the 19 soil map units, 7 map units are included on local and national hydric soil lists (Figure A-3; Soils Series Legend).

The WETS Table for the Union City weather station indicates that Obion County, Tennessee experienced wetter than normal conditions during the March survey dates and wetter than normal conditions during the April survey dates. This indicates that conditions onsite were likely more saturated when compared to the climate normal.

Wetland Delineation Field Survey
From March 2 through 4, April 16, and April 20, 2020, a team of Burns & McDonnell wetland scientists conducted a wetland delineation. The location and extent of features identified within the Survey Area were recorded using sub-meter-accuracy GPS. Land cover and delineated wetlands from field surveys are discussed in detail below.

Vegetation. The Survey Area was primarily composed of upland field, fallow agricultural field, typically planted with corn and soybean crops, and limited woodland. Typical vegetation in the upland portions of the Survey Area included henbit (*Lamium amplexicaule*), purple deadnettle *(Lamium purpureum*), Kentucky bluegrass (*Poa pratensis*), fowl bluegrass (*Poa palustris*), spreading bent (*Agrostis stolonifera*), common chickweed (*Stellaria media*), Japanese honeysuckle (*Lonicera japonica*), Carolina cranesbill (*Geranium carolinianum*), American pokeweed (*Phytolacca americana*), red maple (*Acer rubrum*), green ash (*Fraxinus pensylvanica*), and sweetgum (*Liquidambar styraciflua*).

Soils. Typical upland soils were dark gray (10YR 4/1), dark grayish brown (10YR 4/2), and brown (10YR 4/3) and generally had a texture of silty clay loam. Redoximorphic features were typically present in wetland soils and upland soils.

Hydrology. The primary source of hydrology for wetlands was overland flow, groundwater, and precipitation. Indicators of hydrology within the wetlands included surface water, high water table, saturation, water-stained leaves, aquatic fauna, oxidized rhizospheres on living roots, a sparsely vegetated concave surface, drainage patterns, crayfish burrows, a concave geomorphic position, and a positive FAC-neutral test.

Delineated Areas
During wetland delineation efforts, 30 wetlands and 40 streams were identified within the Survey Area. The wetlands and streams are generally described below, and their locations are shown on Figure A-4 in Appendix A. Table 1 provides the types and size of each wetland, and Table 2 provides the type and length of each stream delineated. Sample plots were taken in wetlands and adjacent uplands. Data forms and photographs for these sample plots are included in Appendix B and Appendix C, respectively.

Wetlands
A total of 30 wetlands, comprised of four wetland types (palustrine emergent wetlands [PEM], palustrine forested [PFO], palustrine unconsolidated bottom [PUB], and palustrine aquatic bed [PAB]) and totaling approximately 10.36 acres were delineated within the Survey Area (Photographs in Appendices A and C).

Twenty PEM wetlands, totaling approximately 8.14 acres, were delineated. Dominant vegetation in the PEM wetlands included rough barnyard grass (*Echinochloa muricata*), Quaker bittercress (*Cardamine pensylvanica*), fowl bluegrass (*Poa palustris*), spreading bent (*Agrostis stolonifera*), kidney-leaf buttercup (*Ranunculus abortivus*), fall panic grass (*Panicum dichotomiflorum*), tufted meadow-foxtail (*Alopecurus carolinianus*), wand panic grass (*Panicum virgatum*), golden groundsel (*Packera aurea*), Eurasian buttercup (*Ficaria verna*), common chickweed, and bog chickweed (*Stellaria alsine*). Wetland hydrology was indicated in PEM wetlands by surface

water, high water table, saturation, drift deposits, water-stained leaves, aquatic fauna, oxidized rhizospheres on living roots, a sparsely vegetated concave surface, drainage patterns, crayfish burrows, a concave geomorphic position, and a positive FAC neutral test. Hydric soil was indicated by the presence of a depleted matrix.

Seven PUB and one PAB wetlands, totaling approximately 1.80 acres, were delineated. Common vegetation around the PUB and PAB wetlands included crow garlic (*Allium vineale*), eastern daisy fleabane (*Erigeron annuus*), Kentucky bluegrass, rough cocklebur (*Xanthium strumarium*), rough barnyard grass, and Japanese bristle grass (*Setaria faberi*).

Two PFO wetlands, totaling approximately 0.88 acres, were delineated. Vegetation in the PFO wetlands was dominated by willow oak (*Quercus phellos*), green ash, red maple, rough barnyard grass, fall panic grass, lamp rush (*Juncus effusus*), horsebriar (*Smilax rotundifolia*), and muscadine (*Vitis rotundifolia*). Wetland hydrology was indicated in the PFO wetlands by surface water, high water table, saturation, water-stained leaves, oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC-neutral test. Hydric soil was indicated by the presence of a depleted matrix.

Table 1: Type and Size of Wetland Delineated

Wetland Number	Wetland Type[a]	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional[b]
W-101	PUB	0.026	0.026	10, 13	No
W-102	PEM	0.094	0.094	1, 2	No
W-103	PEM	0.020	0.020	1, 2	No
W-104	PEM	0.024	0.024	1, 2	No
W-105	PEM	0.112	0.112	1, 2	No
W-106	PEM	0.028	0.028	1, 2	No
W-107	PEM	0.008	0.008	1, 2	No
W-108	PEM	0.013	0.013	1, 2	No
W-109	PUB	0.233	0.000	1	Yes
W-110	PEM	0.125	0.125	1	No
W-111	PEM	0.139	0.092	1	No
W-112	PEM	0.129	0.129	1	No
W-113	PEM	5.732	5.619	9	No
W-114	PEM	0.147	0.147	8, 9	No
W-115	PEM	0.902	0.902	7, 8	No
W-116	PEM	0.088	0.088	11	No
W-117	PEM	0.035	0.035	11	No
W-118	PFO	0.8400	0.831	11	Yes
W-119	PEM	0.011	0.011	11	No
W-120	PEM	0.053	0.053	5, 6	No
W-121	PUB	1.382	1.382	4, 5	Yes

Wetland Number	Wetland Type[a]	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional[b]
W-122	PEM	0.081	0.081	4, 5	Yes
W-122	PFO	0.035	0.035	4, 5	Yes
W-218	PUB	0.049	0.048	1, 2	No
W-219	PUB	0.090	0.090	1, 2	No
W-222	PEM	0.137	0.069	3	No
W-223	PAB	0.019	0.019	3	No
W-224	PEM	0.258	0.258	3	No
W-250	PUB	0.009	0.009	14	No
W-251	PUB	0.013	0.013	14	No
		10.84	**10.36**		

(a) Symbols for wetland type: PEM = palustrine emergent, PUB = palustrine unconsolidated bottom, PFO = palustrine forested, PAB = palustrine aquatic bed
(b) An official Jurisdictional Determination can only be made by the U.S. Army Corps of Engineers.
All potentially non-jurisdictional wetlands are shaded gray

Streams

Thirty-nine stream channels, consisting of three stream types (perennial, intermittent, and ephemeral) and totaling 47,232 linear feet were delineated within the Survey Area (Photographs, Appendix C). The different stream types are summarized below.

Thirty-two ephemeral stream channels, totaling 39,391 feet were delineated in the Survey Area. Ephemeral streams were characterized by a defined bed and bank, but they had limited flow during the site visit, indicating that these streams largely carry water only during and after precipitation events. Ephemeral streams ranged from approximately 0.5 to 6 feet in width at the ordinary high water mark (OHWM) with bank heights ranging from 0.25 to 3 feet. At the time of the delineation, water was observed at a depth of 1 inch to 8 inches. The substrates of the ephemeral streams were comprised of silt with limited gravel. These streams were in upland fields and agricultural fields. Riparian vegetation included species such as Kentucky bluegrass, fowl bluegrass, purple deadnettle, henbit, creeping bent, crow garlic, common chickweed, and agricultural corn stubble.

Four intermittent stream channels, totaling 5,867 feet were delineated in the Survey Area. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit. This is a likely indicator that the stream is partially influenced by groundwater, but it may not flow during dry periods. Intermittent streams were 1 to 7 feet in width at the OHWM with bank heights ranging from 0.75 to 7 feet. At the time of the delineation, water was observed at a depth of 2 inches to 1.5 feet. The substrates of intermittent streams were comprised of silt with limited gravel. These streams flowed through upland fields, agricultural fields, and wooded riparian areas. Common riparian vegetation included species such as Kentucky bluegrass, fowl bluegrass, henbit, purple deadnettle, golden groundsel, common chickweed, Quaker bittercress, Carolina cranesbill, and kidney-leaf buttercup.

Three perennial streams, totaling 1,974 feet were delineated within the Survey Area. Perennial streams were characterized by the presence of a substantial volume of flow at the time of the site visit as well as secondary characteristics such as observance of fish and rooted aquatic fauna, indicating that water flows year-round. Perennial streams were approximately 5 to 30 feet in width at the OHWM with bank heights ranging from 2 to 16 feet. At the time of the delineation, the depth of water observed was 0.5 to 10 feet. The substrates of the perennial streams were likely comprised of silt, gravel, and cobble although this could not be confirmed at all streams due to turbidity. Perennial streams flowed through upland fields, agricultural fields, and wooded riparian areas. Common riparian vegetation included Kentucky bluegrass, fowl bluegrass, rough cocklebur, golden groundsel, Quaker bittercress, henbit, purple deadnettle, Japanese honeysuckle, green ash, willow oak, and American sycamore (*Platanus occidentalis*).

Table 2: Type and Length of Streams Delineated

Stream Number	Stream Type	Length of Stream (feet)	Length of Stream (feet) in Survey Area*	Figure A-4 Page Number	Jurisdictional[a]
S-101	Perennial	2,528	769	10, 11	Yes
S-102	Ephemeral	4,871	2,396	10, 13	No
S-104	Ephemeral	1,315	657	10, 13	No
S-105	Ephemeral	3,546	3,546	10, 11,13	No
S-106	Ephemeral	1,478	1,478	10, 11, 13	No
S-107	Intermittent	8,017	3,192	11, 12	Yes
S-108	Ephemeral	4,300	2,150	12, 13	No
S-109	Ephemeral	1,401	1,401	12, 13	No
S-110	Ephemeral	150	150	12	No
S-111	Ephemeral	347	347	12	No
S-112	Ephemeral	4,299	2,150	10, 11, 12, 13	No
S-113	Ephemeral	2,059	2,059	12, 13	No
S-114	Ephemeral	3,364	3,364	12, 13	No
S-115	Ephemeral	3,371	3,367	12	No
S-116	Perennial	2,752	742	1, 2	Yes
S-117	Ephemeral	1,155	1,133	1, 2	No
S-118	Ephemeral	44	44	1, 2	No
S-119	Ephemeral	1,105	1,101	1, 2	No
S-120	Ephemeral	698	698	1	No
S-121	Ephemeral	550	548	1	No
S-122[b]	Ephemeral	815	0	1	No
S-123	Ephemeral	643	631	4, 8, 9	No
S-124	Ephemeral	232	232	7, 8	No

Stream Number	Stream Type	Length of Stream (feet)	Length of Stream (feet) in Survey Area*	Figure A-4 Page Number	Jurisdictional[a]
S-125	Ephemeral	622	622	8	No
S-126	Ephemeral	974	961	7, 8	No
S-127	Ephemeral	120	120	7, 8	No
S-128	Ephemeral	99	99	8	No
S-129	Ephemeral	258	129	11, 12	No
S-130	Intermittent	220	213	4, 5	Yes
S-131	Ephemeral	2,580	2,574	5, 6, 7	No
S-132	Perennial	592	568	6	Yes
S-133	Ephemeral	1,082	1,082	10, 13	No
S-134	Ephemeral	663	663	10, 13	No
S-135	Ephemeral	784	784	12, 13	No
S-216	Ephemeral	1,719	840	3	No
S-240	Intermittent	2,606	2,447	12, 15	Yes
S-241	Ephemeral	2,349	2,349	12, 13	No
S-242	Ephemeral	2,107	2,107	14, 15	No
S-243[b]	Intermittent	3,872	0	15	Yes
	Total:	**66,317**	**47,711**		

(a) An official Jurisdictional Determination can only be made by the U.S. Army Corps of Engineers. All potentially non-jurisdictional streams are shaded gray.
(b) Due to their location completely outside of the Survey Area, photographs of S-122 and S-243 are not included in Appendix C.

SUMMARY

Burns & McDonnell conducted a wetland delineation of the Survey Area to identify wetlands and other water bodies. A total of 30 wetlands and 39 stream channels were identified. Of the identified features, two PUB wetlands, one PEM wetland, two PFO wetlands, and seven streams meet criteria to be considered a water of the U.S.

Factors considered in determining jurisdictional waters of the U.S. included criteria as defined under the recent April 21, 2020 publication of The Navigable Waters Protection Rule: Definition of “Waters of the United States”. Conditions observed during the wetland delineation determined that four wetlands and six streams within the Survey Area meet the definition of waters of the U.S. (Tables 1 and 2). The features indicated as “Yes” in Tables 1 and 2 are presumed to be under the jurisdiction of the USACE; however, an official Jurisdictional Determination can only be made by the USACE.

If permanent impacts to jurisdictional waters of the U.S. cannot be completely avoided, they should be minimized to the extent practicable, and a Section 404 permit from the USACE will be

required. Depending on the size and location of the permanent impacts, Nationwide Permit (NWP) 51 for Land-Based Renewable Energy Generation Facilities and/or NWP 33 for Temporary Construction, Access, and Dewatering may be appropriate. To qualify for NWP 51, permanent impacts to waters of the U.S. cannot exceed 0.50 acre of wetland and 300 linear feet of stream bed, considered cumulatively for the Project. If permanent cumulative impacts are greater than 0.10 acre of waters of the U.S., a formal Pre-Construction Notification submittal is required, and compensatory mitigation will likely be required for losses that exceed 0.10 acre.

If permanent impacts cannot be avoided but can be limited to 0.10 acre or less, for wetland and stream impacts considered cumulatively for the entire Project, and mechanical tree clearing can be avoided within wetland areas, the Project would likely qualify for a NWP 51 without the need for a formal PCN to the USACE.

If all impacts are temporary in nature the Project will likely be self-certified under the NWP 51, provided that all regional and general conditions are met. Regardless of which NWP(s) is applicable to the Project, the regional and general conditions of the NWP(s) would apply and would need to be followed during Project construction.

If you have any questions or require additional information, feel free to contact me by telephone at (770) 510-4526 or by e-mail at jabrown3@burnsmcd.com.

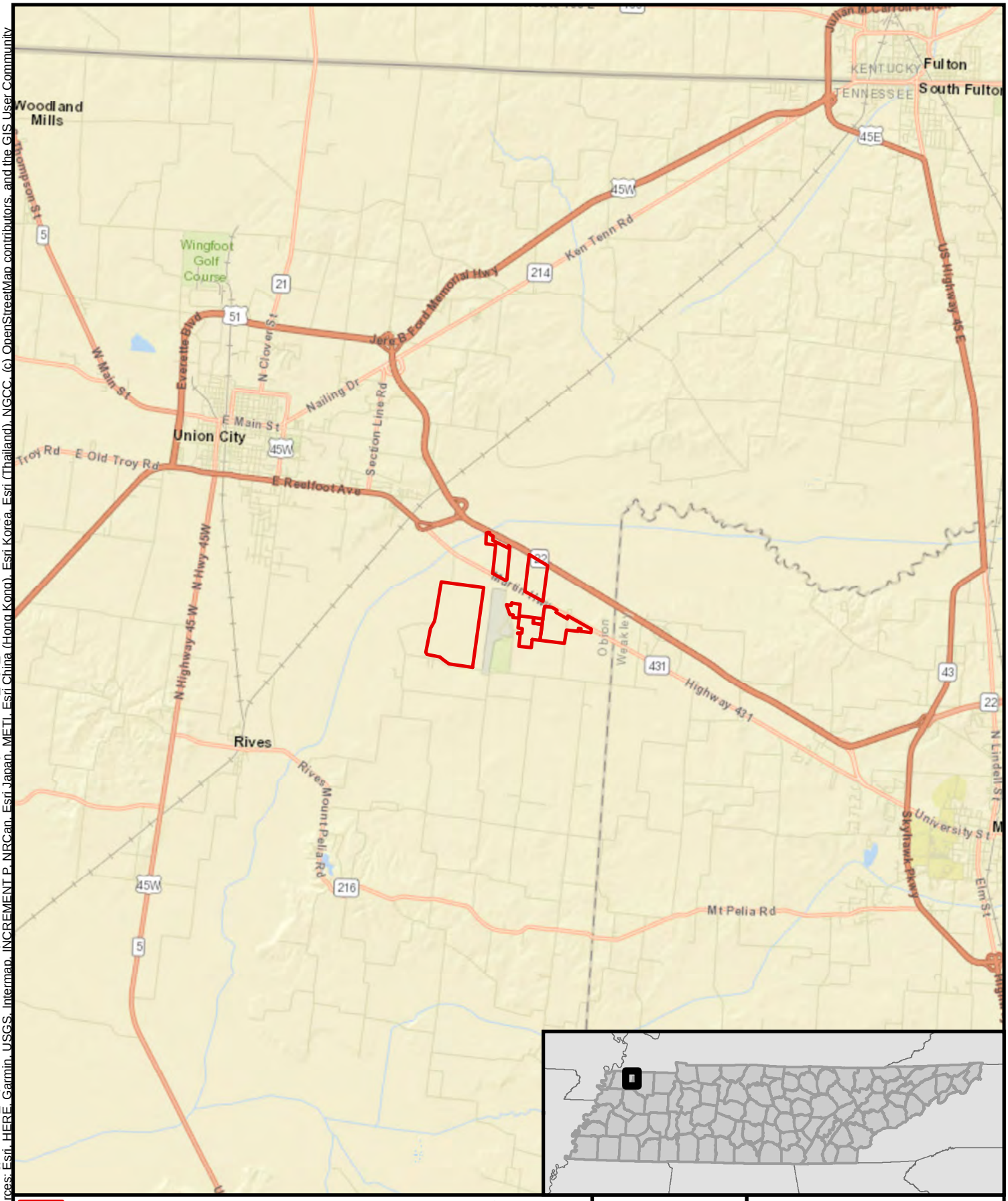
Sincerely,

Jesse A Brown
Senior Environmental Scientist
Burns and McDonnell

Attachments:

- Appendix A - FIGURES
- Appendix B - ROUTINE WETLAND DETERMINATION DATA FORMS, ATLANTIC AND GULF COAST PLAIN REGION
- Appendix C - SITE PHOTOGRAPHS

APPENDIX A - FIGURES



Parcels

NORTH

0 5,000 10,000

Scale in Feet

BURNS McDONNELL

Figure A-1
Site Location Map
Skyhawk Solar Project

Source: Esri, and Burns & McDonnell Engineering Company, Inc.

Issued: 5/7/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig1_Overview.mxd kdboatright 5/7/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

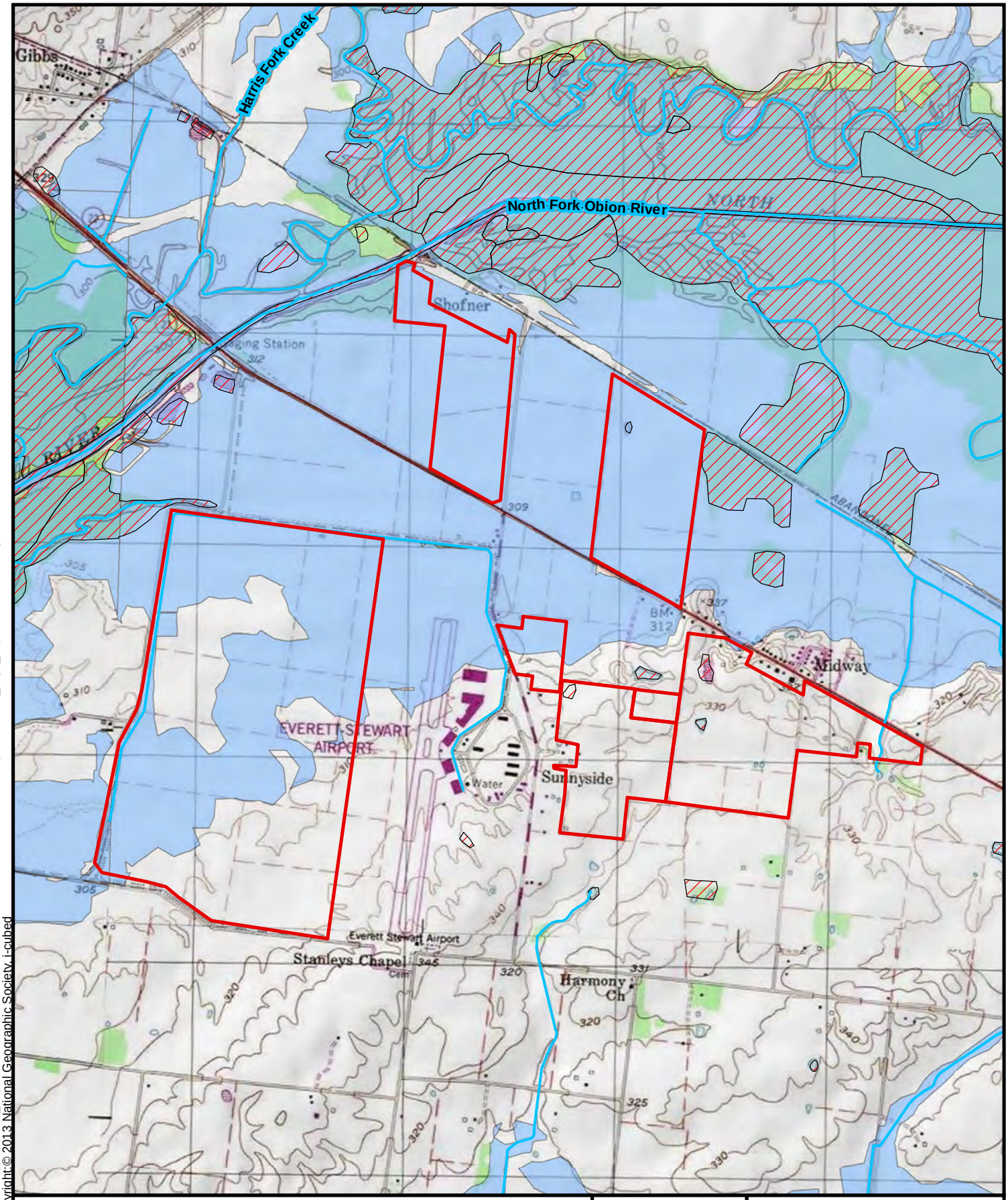


Figure A-2
Topographic, NWI, NHD, and FEMA Map
Skyhawk Solar Project

Issued: 5/7/2020

Source: Esri, USGS-National Hydrography Dataset (NHD), USFWS-National Wetland Inventory (NWI), FEMA-National Flood Hazard Layer (NFHL), and Burns & McDonnell Engineering Company, Inc.

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig2_Topo.mxd kdboatright 5/7/2020
Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed

Map Unit Symbol & Name

Bd - Birds silt loam*

Ca - Calloway silt loam

Ce - Center silt loam, 0 to 2 % slopes*

Cl - Collins silt loam

Fa - Falaya silt loam, 0 to 2 % slopes, occasionally flooded, brief duration*

FcB - Feliciana silt loam, 2 to 5 % slopes, northern phase

FcE2 - Feliciana silt loam, 12 to 20 % slopes, moderately eroded, northern phase

Fn - Fountain silt loam*

GrB - Grenada silt loam, 2 to 5 % slopes

GrB2 - Grenada silt loam, 2 to 5 % slopes, eroded

GrC2 - Grenada silt loam, 5 to 8 % slopes, eroded

LoB - Loring silt loam, 2 to 5 % slopes

LoB2 - Loring silt loam, 2 to 5 % slopes, eroded

LoC2 - Loring silt loam, 5 to 8 % slopes, eroded

LoD2 - Loring silt loam, 8 to 12 % slopes, eroded

Rt - Routon silt loam, 0 to 2 % slopes*

Ru - Routon-Bonn silt loam complex*

Sm - Smoothed land, Memphis soil material

W - Water

Ws - Waverly silt loam*

Survey Area

Parcels

SSURGO Soils Map Unt

NORTH

0 900 1,800

Scale in Feet

BURNS McDONNELL

Figure A-3
SSURGO Soils Map
Skyhawk Solar Project

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig3_Soils.mxd kdboatright 5/7/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, and Burns & McDonnell Engineering Company, Inc.

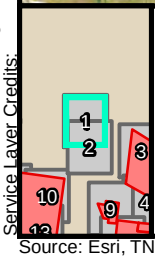
Issued: 5/7/2020

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_Overview_JDupdate.mxd Inassyia 7/30/2020
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 1 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 2 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd Inassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 3 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

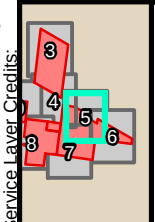
0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 4 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 5 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 6 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

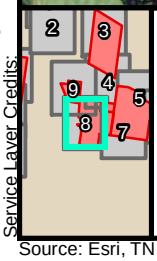
Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 7 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

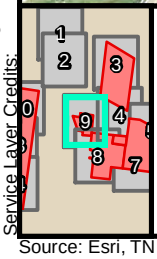
0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 8 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 9 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley
Counties, TN
Page 10 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd Inassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 11 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd Inassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 12 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

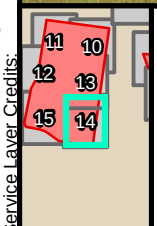
Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 13 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd Inassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

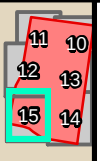
Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 14 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020



Parcel Boundary
Survey Area

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Sample Plot (SP)
Non-Jurisdictional SP
Photograph Point (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetland Delineation Map
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 15 of 15

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_JDupdate.mxd lnassyia 7/30/2020

Service Layer Credits:
Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 7/30/2020

APPENDIX B - ROUTINE WETLAND DETERMINATION DATA FORMS, ATLANTIC AND GULF COAST PLAIN REGION

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-101

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385937 Long: -88.989228 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in emergent (PEM) wetland (W-) 101.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators C3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-101

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Echinochloa muricata*	100 %	Y	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: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-101

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 5/2	95	10YR 5/6	5	C	M/PL	silty clay	
4-16	10YR 6/1	78	2.5Y 4/2	15	D	M	silty clay	
			10YR 5/8	7	C	M/PL		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from wetland SP-101, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-102

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385975 Long: -88.989370 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-101.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-102

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Agrostis stolonifera*	30 %	Y	FACW
2. *Poa palustris*	15 %	Y	FAC
3. *Lamium amplexicaule*	15 %	Y	UPL
4. *Allium vineale*	10 %	N	FACU
5. *Lamium purpureum*	5 %	N	UPL
6. *Geranium carolinianum*	5 %	N	UPL
7. *Stellaria media*	5 %	N	FACU
8. *Cardamine pensylvanica*	3 %	N	FACW
9. *Ranunculus abortivus*	3 %	N	FACW
10.	%		
11.	%		
12.	%		
	91 % = Total Cover		
	50% of total cover: 45.5 20% of total cover: 18.2		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-102

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	95	7.5YR 4/4	5	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-102, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-103

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.396582 Long: -88.980965 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-102.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-103

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Cardamine pensylvanica*	1 %	Y	FACW
2. *Poa palustris*	1 %	Y	FAC
3. *Agrostis stolonifera*	1 %	Y	FACW
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	3 % = Total Cover		
	50% of total cover: 1.5 20% of total cover: 0.2		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-103

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
0-12	10YR 5/2	90	7.5YR 4/4	10	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-103, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-104

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.396573 Long: -88.981012 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-102 and W-103.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants

Sampling Point: SP-104

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____	20% of total cover: ____	

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____	20% of total cover: ____	

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	65 %	Y	FAC
2. *Alopecurus carolinianus*	5 %	N	FACW
3. *Stellaria media*	3 %	N	FACU
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	73 % = Total Cover		
	50% of total cover: 36.5	20% of total cover: 14.6	

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-104

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	88	7.5YR 4/4	12	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-104, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-105

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.396772 Long: -88.981340 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-103.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	4
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, and D2 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-105

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	15 %	Y	FAC
2. *Alopecurus carolinianus*	10 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	25 % = Total Cover		
	50% of total cover: 12.5 20% of total cover: 5		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Rooted algae was observed, indicating persistent hydroogy. Dominance test is met.

SOIL Sampling Point: SP-105

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
0-12	10YR 5/2	93	10YR 4/6	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-105, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-106

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.396953 Long: -88.981611 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-104.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-106

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Ranunculus abortivus*	2 %	Y	FACW
2. *Alopecurus carolinianus*	2 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
	50% of total cover: 2 20% of total cover: 0.8		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-106

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
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-106, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-107

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.397070 Long: -88.981768 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☐	☒
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-104 and W-105.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-107

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	35 %	Y	FAC
2. *Allium vineale*	25 %	Y	FACU
3. *Cardamine pensylvanica*	5 %	N	FACW
4. *Stellaria media*	2 %	N	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	67 % = Total Cover		
	50% of total cover: 33.5 20% of total cover: 13.4		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Indicators of hydrophytic vegetation are not met.

SOIL Sampling Point: SP-107

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	95	10YR 4/4	5	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-107, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-108

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.397211 Long: -88.981962 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-105.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-108

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Cardamine pensylvanica*	1 %	Y	FACW
3. *Packera aurea*	1 %	Y	FACW
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
	50% of total cover: 2 20% of total cover: 0.8		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL

Sampling Point: SP-108

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
0-12	10YR 5/2	92	7.5YR 4/4	8	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-108, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-109

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.399689 Long: -88.980216 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-106.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B13, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-109

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Stellaria alsine*	2 %	Y	OBL
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
	50% of total cover: 2 20% of total cover: 0.8		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-109

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
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-109, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-110

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.399830 Long: -88.980214 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-107.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	2
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-110

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	3 %	Y	FACW
2. *Poa palustris*	3 %	Y	FAC
3. *Stellaria alsine*	2 %	Y	OBL
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	8 % = Total Cover		
	50% of total cover: 4 20% of total cover: 1.6		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-110

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
0-12	10YR 5/2	92	10YR 4/4	8	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-110, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-111

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.399792 Long: -88.980306 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-106 and W-107.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-111

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	60 %	Y	FAC
2. *Allium vineale*	10 %	N	FACU
3. *Cardamine pensylvanica*	10 %	N	FACW
4. *Erigeron annuus*	5 %	N	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	85 % = Total Cover		
	50% of total cover: 42.5 20% of total cover: 17		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-111

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	93	10YR 4/4	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-111, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-112

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.402656 Long: -88.984665 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-110.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	2
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, C8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-112

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Ranunculus abortivus*	2 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
	50% of total cover: 2 20% of total cover: 0.8		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-112

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
0-12	10YR 4/2	90	10YR 4/6	10	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-112, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-113

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.402737 Long: -88.984659 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-110.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicator C8 is met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-113

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	65 %	Y	FAC
2. *Allium vineale*	10 %	N	FACU
3. *Cardamine pensylvanica*	5 %	N	FACW
4. *Erigeron annuus*	5 %	N	FACU
5. *Taraxacum officinale*	5 %	N	FACU
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	90 % = Total Cover		
	50% of total cover: 45 20% of total cover: 18		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-113

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
0-12	10YR 4/2	80	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/1	10	D	M		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from upland SP-113, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-114

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.403113 Long: -88.985534 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-111.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B9, C3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-114

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Ranunculus abortivus*	1 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	3 % = Total Cover		
	50% of total cover: 1.5 20% of total cover: 0.6		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 =	0
FACW species	____ %	x 2 =	0
FAC species	____ %	x 3 =	0
FACU species	____ %	x 4 =	0
UPL species	____ %	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-114

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
0-12	10YR 4/1	88	7.5YR 4/6	12	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-114, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-115

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.403023 Long: -88.985569 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-111.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-115

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	95 %	Y	FAC
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	95 % = Total Cover		
	50% of total cover: 47.5 20% of total cover: 19		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-115

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	85	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/1	5	D	M		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-115, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-116

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.402335 Long: -88.985059 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-112.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B9, C3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-116

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	5 %	Y	FAC
2. *Cardamine pensylvanica*	3 %	Y	FACW
3. *Alopecurus carolinianus*	3 %	Y	FACW
4. *Ranunculus abortivus*	2 %	N	FACW
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	13 % = Total Cover		
	50% of total cover: 6.5 20% of total cover: 2.6		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-116

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
0-12	10YR 4/1	92	7.5YR 4/4	8	C	M/PL	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-116, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-117

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.402138 Long: -88.985014 Datum: NAD83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☐	☒
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-112.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicator C8 is met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-117

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	80 %	Y	FAC
2. *Allium vineale*	10 %	N	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	90 % = Total Cover		
	50% of total cover: 45 20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-117

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 4/3	83	10YR 4/2	15	D	M	silty clay loam	
			10YR 4/6	2	C	M		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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

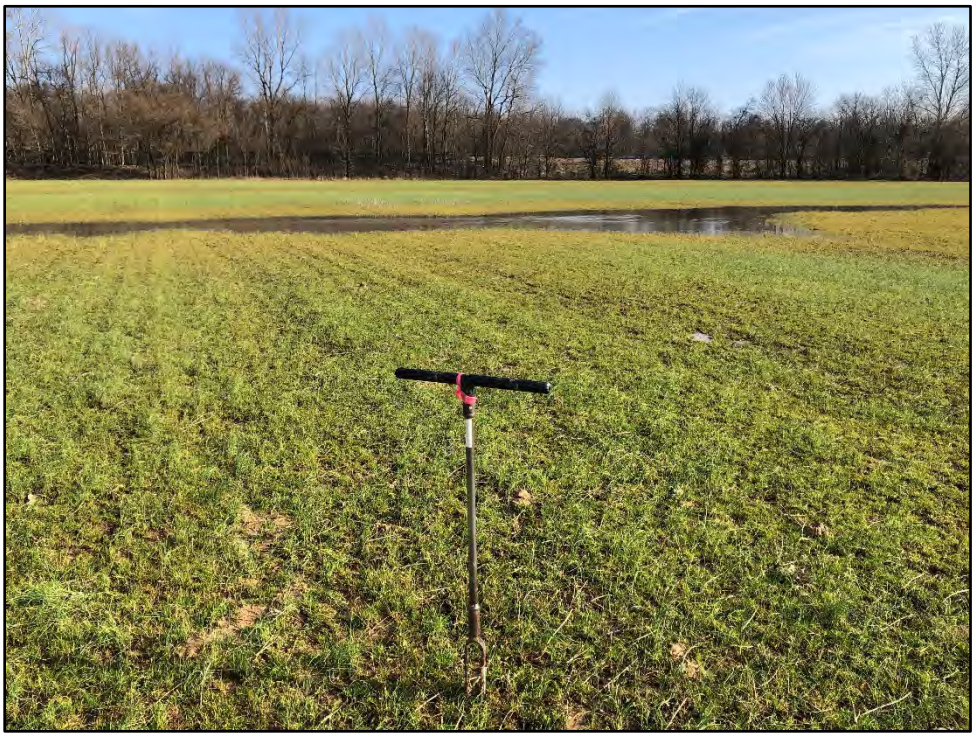
Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric Soil Present?

☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.



Photograph: View from upland SP-117, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-118

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.387908 Long: -88.978358 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-113.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	4
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, C8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-118

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Ranunculus abortivus*	2 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
50% of total cover: 2	20% of total cover: 0.8		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL

Sampling Point: SP-118

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
0-6	10YR 4/2	93	10YR 4/4	7	C	M	silty clay loam	
6-16	10YR 4/1	90	10YR 4/6	10	C	M/PL	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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from wetland SP-118, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-119

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.387888 Long: -88.979068 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-113.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators B3 and C8 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-119

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	15 %	Y	FAC
2. *Ranunculus abortivus*	15 %	Y	FACW
3. *Stellaria media*	15 %	Y	FACU
4. *Allium vineale*	5 %	N	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	50 % = Total Cover		
	50% of total cover: 25 20% of total cover: 10		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of 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%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-119

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	85	7.5YR 4/4	15	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from wetland SP-119, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-120

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.387125 Long: -88.978703 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-113.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicator C8 is met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-120

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	40 %	Y	FAC
2. *Stellaria media*	10 %	N	FACU
3. *Lamium amplexicaule*	10 %	N	UPL
4. *Allium vineale*	5 %	N	FACU
5. *Ranunculus abortivus*	5 %	N	FACW
6. *Packera aurea*	3 %	N	FACW
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	73 % = Total Cover		
	50% of total cover: 36.5 20% of total cover: 14.6		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-120

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	7.5YR 4/4	10	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-120, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-121

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) terrace Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.388312 Long: -88.977976 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☐	☒
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-113.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☒	☐	2
Saturation Present? (includes capillary fringe)	☒	☐	2
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicator A2, A3, and C3 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-121

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Allium vineale*	15 %	Y	FACU
2. *Stellaria media*	15 %	Y	FACU
3. *Lamium amplexicaule*	15 %	Y	UPL
4. *Poa palustris*	10 %	N	FAC
5. *Ranunculus abortivus*	5 %	N	FACW
6. *Geranium carolinianum*	5 %	N	UPL
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: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 3 (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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Indicators of hydrophytic vegetation are not met.

SOIL Sampling Point: SP-121

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	7.5YR 4/6	10	C	M/PL	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-121, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-122

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385278 Long: -88.976177 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded NWI Classification: PSS1C

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-114.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☒	☐	3
Saturation Present? (includes capillary fringe)	☒	☐	3
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A2, A3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-122

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

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

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 =	0
FACW species	____ %	x 2 =	0
FAC species	____ %	x 3 =	0
FACU species	____ %	x 4 =	0
UPL species	____ %	x 5 =	0
Column Totals:	0 % (A)		0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-122

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	86	7.5YR 4/4	12	C	M	silty clay loam	
			N 2.5/	2	C	M	Manganese concretions	

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from wetland SP-122, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-123

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385282 Long: -88.975913 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded NWI Classification: PSS1C

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☐	☒
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-114.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-123

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Bromus inermis*	30 %	Y	UPL
2. *Stellaria media*	3 %	N	FACU
3. *Packera aurea*	2 %	N	FACW
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	35 % = Total Cover		
	50% of total cover: 17.5 20% of total cover: 7		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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	%	x 1 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Indicators of hydrophytic vegetation are not met.

SOIL

Sampling Point: SP-123

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 4/3	100					silty clay loam	
4-16	10YR 4/1	90	10YR 4/4	10	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-123, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-124

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.381654 Long: -88.971115 Datum: NAD83

Soil Map Unit Name: Fountain silt loam NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-115.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	2
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, C3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-124

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Echinochloa muricata*	90 %	Y	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	90 % = Total Cover		
	50% of total cover: 5 20% of total cover: 2		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-124

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
0-12	10YR 5/1	85	7.5YR 4/4	15	C	M/PL	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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from wetland SP-124, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-125

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.381447 Long: -88.970843 Datum: NAD83

Soil Map Unit Name: Fountain silt loam NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☐	☒
Hydric Soil Present?	☐	☒
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-115.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-125

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Bromus inermis*	60 %	Y	UPL
2. *Phytolacca americana*	10 %	N	FACU
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	70 % = Total Cover		
	50% of total cover: 35 20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 feet)			
1. *Smilax rotundifolia*	10 %	Y	FAC
2. *Lonicera japonica*	10 %	Y	FACU
3.	%		
4.	%		
5.	%		
	20 % = Total Cover		
	50% of total cover: 10 20% of total cover: 4		

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: 33%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Indicators of hydrophytic vegetation are not met.

SOIL

Sampling Point: SP-125

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	75	10YR 4/3	25	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicators are not met.

Photograph: View from upland SP-125, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-126

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.388674 Long: -88.993469 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-116.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B13, B8, C8, and D2 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-126

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5 feet)			
1. *Ficaria verna*	2 %	Y	FAC
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	2 % = Total Cover		
50% of total cover: 1	20% of total cover: 0.4		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-126

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
0-12	2.5Y 6/1	80	7.5YR 4/4	20	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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from wetland SP-126, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-127

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.388704 Long: -88.993514 Datum: NAD83

Soil Map Unit Name: Center silt loam, 0 to 2 percent slopes NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☐	☒
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-116.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants

Sampling Point: SP-127

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	85 %	Y	FAC
2. *Lamium amplexicaule*	7 %	N	UPL
3. *Stellaria media*	5 %	N	FACU
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	97 % = Total Cover		
50% of total cover: 48.5 20% of total cover: 19.4			
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-127

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 4/3	80	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/2	10	D	M		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicators are not met.

Photograph: View from upland SP-127, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-128

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.389293 Long: -88.997529 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-117.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	3
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B9, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-128

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	2 % = Total Cover		
50% of total cover: 1	20% of total cover: 0.4		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-128

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
0-12	2.5Y 6/1	90	7.5YR 4/4	10	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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from wetland SP-128, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-129

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.389267 Long: -88.997458 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-117.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-129

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	95 %	Y	FAC
2. *Lamium amplexicaule*	2 %	N	UPL
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	97 % = Total Cover		
	50% of total cover: 48.5 20% of total cover: 19.4		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals: 0	% (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-129

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	93	10YR 4/4	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-129, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-130

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.392029 Long: -88.994285 Datum: NAD83

Soil Map Unit Name: Waverly silt loam NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-119.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	2
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-130

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Herb Stratum (Plot size: 5 feet)			
1. *Ranunculus abortivus*	1 %	Y	FACW
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	1 % = Total Cover		
50% of total cover: 0.5 20% of total cover: 0.2			

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-130

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
0-12	2.5Y 6/1	90	7.5YR 4/6	10	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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from wetland SP-130, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/3/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-131

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.392007 Long: -88.994278 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-119.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-131

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	100 %	Y	FAC
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: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-131

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
0-12	10YR 4/2	95	10YR 4/4	5	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from upland SP-131, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/4/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-132

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) swale Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385735 Long: -88.963515 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 5 to 8 percent slopes, eroded NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☒	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Soil has been disturbed by agricultural activities. Wetland sample plot located in PEM W-120.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators B10 and D2 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-132

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Panicum virgatum*	95 %	Y	FAC
2. *Rumex crispus*	2 %	N	FAC
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	97 % = Total Cover		
	50% of total cover: 0.5 20% of total cover: 0.2		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals: 0	% (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-132

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
0-8	10YR 4/3	98	10YR 4/4	2	C	M	sitly clay loam	
8-16	10YR 4/3	85	10YR 5/1	10	D	M	silty clay loam	
			10YR 4/4	5	C	M		

[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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Soil has been disturbed by agricultural activities, specifically tilling which causes the soil to be homogenized. Due to the positive presences of wetland hydrology and hydrophytic vegetation, hydric soil is presumed present. S

Photograph: View from wetland SP-132, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/4/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-133

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.385670 Long: -88.963544 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 5 to 8 percent slopes, eroded NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☐	☒
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-120.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-133

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	85 %	Y	FAC
2. *Lamium amplexicaule*	5 %	N	UPL
3. *Stellaria media*	5 %	N	FACU
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	95 % = Total Cover		
	50% of total cover: 50 20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 = 0
FACW species	%	x 2 = 0
FAC species	%	x 3 = 0
FACU species	%	x 4 = 0
UPL species	%	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-133

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 4/3	100					silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicators are not met.

Photograph: View from upland SP-133, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/4/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-134

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.387227 Long: -88.969091 Datum: NAD83

Soil Map Unit Name: Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Soil has been disturbed by agricultural activities. Wetland sample plot located in forested (PFO) and PEM W-122.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	0.5
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B9, C3, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-134

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50 %	Y	FAC
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	50 % = Total Cover		
	50% of total cover: 25	20% of total cover: 10	

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover:	20% of total cover:	

Herb Stratum (Plot size: 5 feet)			
1. *Echinochloa muricata*	40 %	Y	FACW
2. *Panicum dichotomiflorum*	15 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	55 % = Total Cover		
	50% of total cover: 27.5	20% of total cover: 11	

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = Total Cover		
	50% of total cover:	20% of 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% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL

Sampling Point: SP-134

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
0-12	10YR 5/1	85	7.5YR 4/6	15	C	M/PL	sitly 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from wetland SP-134, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/4/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-135

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.387404 Long: -88.968975 Datum: NAD83

Soil Map Unit Name: Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☐	☒
Hydric Soil Present?	☐	☒
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PFO and PEM W-122.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-135

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	35 %	Y	FAC
2. *Lamium purpureum*	35 %	Y	UPL
3. *Lamium amplexicaule*	15 %	N	UPL
4. *Stellaria media*	10 %	N	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	95 % = Total Cover		
	50% of total cover: 47.5 20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50%% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Indicators of hydrophytic vegetation are not met.

SOIL Sampling Point: SP-135

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
0-12	10YR 4/3	100					silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: compaction Depth (inches): 12

Hydric Soil Present?

☐ Yes ☒ No

Remarks: Hydric soil indicators are not met. Soil could not be retrieved below a depth of 12 inches due to the presence of compaction.

Photograph: View from upland SP-135, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-136

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.399861 Long: -88.980727 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☒	☐
Is the Sampled Area within a Wetland?	☒	☐

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Wetland sample plot located in PEM W-108.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☒	☐	2
Water Table Present?	☒	☐	0
Saturation Present? (includes capillary fringe)	☒	☐	0
Wetland Hydrology Present?	☒	☐	

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

Remarks: Hydrology indicators A1, A2, A3, B8, D2, and D5 are met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-136

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		

Herb Stratum (Plot size: 5 feet)			
1. *Alopecurus carolinianus*	2 %	Y	FACW
2. *Ranunculus abortivus*	2 %	Y	FACW
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	4 % = Total Cover		
	50% of total cover: 4 20% of total cover: 1.6		

Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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 = 0
FACW species	____ %	x 2 = 0
FAC species	____ %	x 3 = 0
FACU species	____ %	x 4 = 0
UPL species	____ %	x 5 = 0
Column Totals:	0 % (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☐ 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 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

Remarks: Rapid test is met.

SOIL Sampling Point: SP-136

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
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: hypersaturation Depth (inches): 12

Hydric Soil Present?

☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met. Soil could not be retrieved below a depth of 12 inches due to the presence of hypersaturated soil.

Photograph: View from wetland SP-136, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 3/2/2020

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-137

Investigator(s): K. Russo, A O'Hare Section, Township, Range: NA

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

Subregion (LRR or MLRA): South Atlantic & Gulf Slope Cash Crops, Forest, & Livestock Region Lat: 36.399852 Long: -88.980704 Datum: NAD83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

	Vegetation	Soil	Hydrology
Significantly Disturbed?	☐	☐	☐
Naturally Problematic?	☐	☐	☒

Are "Normal Circumstances" present? ☐ Yes ☒ No

(If needed, explain any answers in Remarks)

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

	Yes	No
Hydrophytic Vegetation Present?	☒	☐
Hydric Soil Present?	☒	☐
Wetland Hydrology Present?	☐	☒
Is the Sampled Area within a Wetland?	☐	☒

Remarks: Area experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN. Upland sample plot located adjacent to PEM W-108.

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 on 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 (2 or more 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:	Yes	No	Depth (inches):
Surface Water Present?	☐	☒	
Water Table Present?	☐	☒	
Saturation Present? (includes capillary fringe)	☐	☒	
Wetland Hydrology Present?	☐	☒	

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

Remarks: Hydrology indicators are not met.

VEGETATION (Four Strata) – Use scientific names of plants Sampling Point: SP-137

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
	0 % = Total Cover		
	50% of total cover: ____ 20% of total cover: ____		
Herb Stratum (Plot size: 5 feet)			
1. *Poa palustris*	50 %	Y	FAC
2. *Alopecurus carlinianus*	15 %	N	FACW
3. *Cardamine pensylvanica*	5 %	N	FACW
4. *Erigeron annuus*	5 %	N	FACU
5. *Stellaria media*	5 %	N	FACU
6. *Lamium amplexicaule*	2 %	N	UPL
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
12.	%		
	82 % = Total Cover		
	50% of total cover: 41 20% of total cover: 16.4		
Woody Vine Stratum (Plot size: 30 feet)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
	0 % = 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: 1 (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 =	0
FACW species	%	x 2 =	0
FAC species	%	x 3 =	0
FACU species	%	x 4 =	0
UPL species	%	x 5 =	0
Column Totals:	0 %	(A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ 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 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

Remarks: Dominance test is met.

SOIL Sampling Point: SP-137

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	92	10YR 4/6	8	C	M	silty 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 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)
- ☐ Mark (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 Soil (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 (F10) (**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: Hydric soil indicator F3 is met.

Photograph: View from upland SP-137, facing southeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-237

Investigator(s): O. Haney, S. Woodland Section, Township, Range:

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

Subregion (LRR or MLRA): P 134 Lat: 36.393199 Long: -88.97491 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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 X 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:
SP-237 is in PEM W-222. There is no upland sample plot associated with this wetland. The boundary was determined by an obvious and significant change in topography as well as a change in wetland hydrology. Area is experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN.

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 ____	Depth (inches): 3
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-237

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Ludwigia palustris	3	✔	OBL
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	3% = Total Cover		

50% of total cover: 2 20% of total cover: 1

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
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:	3 (A)		3 (B)

Prevalence Index = B/A = 1

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 _____

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

Rapid test is met. Less than 5% herbaceous vegetation cover was present at the time of sampling within the ROW. The wetland extends to the north beyond the ROW where dominant vegetation includes Typha latifolia (OBL).

SOIL

Sampling Point: SP-237

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 - 8	10YR 5/1	85	10YR 4/6	15	C	PL / M	Silty clay 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: super saturated

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Indicators A4 and F3 are met. Excavation below 8" prevented by super saturated soils.

Photograph: View from wetland SP-237, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-238

Investigator(s): O. Haney, S. Woodland Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.396929 Long: -88.973398 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI classification: PUBHx

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 X 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:
SP-238 is an upland confirmation plot. Area is experiencing wetter than normal precipitation conditions based on WETS table for Union City, TN.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-238

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Hordeum pusillum	60	✔	FACU
2. Poa annua	40	✔	FACU
3. Ranunculus sardous	5		FAC
4. Rumex crispus	5		FAC
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	110% = Total Cover		

50% of total cover: 55 20% of total cover: 22

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	110 (A)		430 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-238

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
-								
-								
-								
-								
-								
-								
-								

[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** ✔

Remarks:

Soil was not taken due to landowner agreement. Hydric soil is not assumed due to lack of hydrophytic vegetation.

Photograph: View from upland SP-238, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-239

Investigator(s): O. Haney, S. Woodland Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.393725 Long: -88.969833 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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 X 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:
SP-239 is in PEM W-224. Area is experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN.

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 _____	Depth (inches): 2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

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

Sampling Point: SP-239

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Lemna minor	30	✔	OBL
2. Hordeum pusillum	10	✔	FACU
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	40% = Total Cover		

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	40 (A)		70 (B)

Prevalence Index = B/A = 1.8

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 _____

Remarks: (If observed, list morphological adaptations below).
Prevalence index is met.

SOIL

Sampling Point: SP-239

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
-								
-								
-								
-								
-								
-								
-								

[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** _____

Remarks:

Soil sample not taken due to landowner agreement. Hydric soil assumed due to prevalence of wetland hydrology indicators and hydrophytic vegetation.

Photograph: View from wetland SP-239, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-240

Investigator(s): O. Haney, S. Woodland Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.393367 Long: -88.969945 Datum: NAD 83

Soil Map Unit Name: Center 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 X 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:
SP-240 is an upland confirmation sample plot adjacent to PEM W-224. Area is experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-240

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Hordeum pusillum	60	✔	FACU
2. Poa annua	45	✔	FACU
3. Ranunculus sardous	20		FAC
4. Cerastium fontanum	5		FAC
5. Valerianella radiata	5		FAC
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	135% = Total Cover		

50% of total cover: 68 20% of total cover: 27

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	135 (A)		510 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-240

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
-								
-								
-								
-								
-								
-								
-								

[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** ✔

Remarks:

Soil was not taken due to landowner agreement. Hydric soil is not assumed due to lack of wetland hydrology indicators and hydrophytic vegetation.

Photograph: View from upland SP-240, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Solar City/County: Obion County Sampling Date: 2020-04-20

Applicant/Owner: TN Solar 1, LLC State: TN Sampling Point: SP-288

Investigator(s): O. Haney, S. Woodland Section, Township, Range:

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

Subregion (LRR or MLRA): P 134 Lat: 36.392312 Long: -88.997250 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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 X 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:
SP-288 is in PFO W-118. No upland plot was taken adjacent to the PFO wetland due to the presence of tilled agricultural field. The wetland boundary was determined by a change in vegetation and land use. Area is experiencing wetter than normal precipitation conditions based on the WETS table for Union City, TN.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-288

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	50	✔	FACW
2. Fraxinus pennsylvanica	20	✔	FACW
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	70% = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	60	✔	OBL
2. Toxicodendron radicans	15		FAC
3. Rubus argutus	5		FAC
4. Solidago altissima	5		FACU
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	85% = Total Cover		
50% of total cover: 43	20% of total cover: 17		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Smilax rotundifolia	10	✔	FAC
2. Vitis rotundifolia	5	✔	FAC
3.	0		
4.	0		
5.	0		
	15% = Total Cover		
50% of total cover: 8	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	70	x 2 =	140
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	170 (A)		325 (B)

Prevalence Index = B/A = 1.9

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 ____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-288

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 5/2	90	7.5YR 5/6	10	C	M	Silty clay loam	
12 - 20	10YR 6/1	85	10YR 5/8	15	C	PL / M	Silty clay 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-288, facing west.

APPENDIX C - SITE PHOTOGRAPHS

Photograph C-1: View of palustrine unconsolidated bottom (PUB) wetland (W-101, facing northeast.

Photograph C-2: View of PUB W-109, facing east.

Photograph C-3: View of PUB W-121, facing west.

Photograph C-4: View of PUB W-218, facing south.

Photograph C-5: View of PUB W-219, facing north.

Photograph C-6: View of palustrine aquatic bed (PAB) W-223, facing southeast.

Photograph C-7: View of PUB W-250, facing east.

Photograph C-8: View of PUB W-251, facing southeast.

Photograph C-9: View of perennial stream (S-)101, facing upstream.

Photograph C-10: View of ephemeral S-102, facing downstream.

Photograph C-11: View of ephemeral S-104, facing upstream.

Photograph C-12: View of ephemeral S-105, facing upstream.

Photograph C-13: View of ephemeral S-106, facing upsteam.

Photograph C-14: View of intermittent S-107, facing upstream.

Photograph C-15: View of epehemeral S-108, facing upstream.

Photograph C-16: View of ephemeral S-109, facing downstream.

Photograph C-17: View of ephemeral S-110, facing downstream.

Photograph C-18: View of ephemeral S-111, facing downstream.

Photograph C-19: View of ephemeral S-112, facing downstream.

Photograph C-20: View of ephemeral S-113, facing upstream.

Photograph C-21: View of ephemeral S-114, facing upstream.

Photograph C-22: View of ephemeral S-115, facing upstream.

Photograph C-23: View of perennial S-116, facing downstream.

Photograph C-24: View of ephemeral S-117, facing upstream.

Photograph C-25: View of ephemeral S-118, facing downstream.

Photograph C-26: View of ephemeral S-119, facing downstream.

Photograph C-27: View of ephemeral S-120, facing upsteam.

Photograph C-28: View of ephemeral S-121, facing downstream.

Photograph C-29: View of ephemeral S-123, facing upstream.

Photograph C-30: View of ephemeral S-124, facing downstream.

Photograph C-31: View of ephemeral S-125, facing upstream.

Photograph C-32: View of ephemeral S-126, facing downstream.

Photograph C-33: View of ephemeral S-127, facing downstream.

Photograph C-34: View of ephemeral S-128, facing upstream.

Photograph C-35: View ephemeral S-129, facing downstream.

Photograph C-36: View of intermittent S-130, facing upstream.

Photograph C-37: View of ephemeral S-131, facing upstream.

Photograph C-38: View of perennial S-132, facing downstream.

Photograph C-39: View of ephemeral S-133, facing downsteam.

Photograph C-40: View of ephemeral S-134, facing upstream.

Photograph C-41: View of ephemeral S-135, facing downstream.

Photograph C-42: View of ephemeral S-216, facing upstream.

Photograph C-43: View of intermittent S-240, facing downstream.

Photograph C-44: View of ephemeral S-241, facing upstream.

Photograph C-45: View of ephemeral S-242, facing downstream.

Photograph C-46: View of representative agricultural field from photograph point (PP)-104, facing west.

Photograph C-47: View of representative upland field from PP-114, facing east.

Photograph C-48: View of trees located within a fallow agricultural field from PP-126, facing southwest.

Wetland Delineation Report

TN SOLAR 1, LLC

Skyhawk Solar Project
B&M Project No. 121610

July 2020

Wetland Delineation Report – Existing TVA Electric Transmission Line

prepared for

Skyhawk Solar Project
TN SOLAR 1, LLC

Obion and Weakley Counties, Tennessee

B&M Project No. 121610

July 2020

prepared by

Burns & McDonnell Engineering Company, Inc.
Atlanta, Georgia

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was contracted by TN Solar 1, LLC, to provide wetland delineation services along Tennessee Valley Authority's (TVA) existing electric overhead transmission line. TVA intends to hang new fiberoptic cable along approximately 16 miles of its existing system in order to accommodate the additional capacity generated from the proposed Skyhawk Solar Project. Due to the additional weight of the new wire, certain existing poles may require upgrading or replacement along the 16-mile-long corridor in Obion and Weakley Counties, Tennessee (Figure A-1, Appendix A). At the time of the field surveys, TVA had not yet identified which poles would be replaced; therefore, the entire 16 miles of right-of-way was surveyed for potential Waters of the U.S. The following sections provide information on the proposed Project and summarize the completed wetland delineation.

INTRODUCTION

TN Solar 1, LLC, is proposing to construct a new utility scale solar farm and associated infrastructure at solar farm parcels in Obion County, Tennessee. The proposed solar facility will connect to an existing TVA operated overhead transmission line. Upgrades to the exiting transmission line may be required at points along the line to support the new solar facility. The northern terminus of the Project is in Union City, TN, approximately 1.5 miles southeast of city center, and extends southeast for 16.2 miles to Martin, TN, approximately 4.5 miles south of city center (Appendix A, Figure A-1).

The Project has the potential to impact wetlands or other water bodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate the presence of wetlands and other water bodies, including streams, drainages, and ponds. The delineation was conducted based on the proposed Project boundary provided by TN Solar 1, LLC, (Survey Area). The Survey Area followed the TVA powerline corridor, which was approximately 100 feet wide and totaled approximately 196 acres and proposed access roads that totaled approximately 24.87 acres.

METHODS

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

Existing Data Review

Burns & McDonnell reviewed available background information for the proposed Project prior to conducting a site visit. This available background information included:

- 2019 U.S. Geological Survey (USGS) 7.5-minute topographic maps (Union City, Harris, Gardner, and Martin, TN quadrangles),
- USGS National Hydrography Dataset (NHD),
- U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps,
- National Agriculture Imagery Program (NAIP) aerial photography (2018),
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) (Weakley County, 2008 and Obion County, 2010), and

- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Obion and Weakley Counties, Tennessee.

Figures A-2 and A-3 in Appendix A depict this data. The National Oceanic Atmospheric Association (NOAA) Palmer Drought Severity Index (PDSI) was also reviewed to evaluate precipitation conditions.

Basing the presence or absence of wetlands on NWI maps alone cannot be assumed as an accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always identified on NWI maps. Therefore, a detailed field survey was conducted to identify any wetlands or other water bodies that may be present.

Wetland Delineation Field Survey

A wetland delineation was completed March 2 through March 4, 2020 April 13 through April 21, 2020 and June 22 and June 23. The delineation was conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region – Version 2.0 (Regional Supplement). Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were surveyed using a sub-meter accurate global positioning system (GPS) unit. A photograph taken at each sample plot is included with each data form (Appendix B). Natural color photographs depicting water bodies, streams, and representative field conditions were taken and are included in Appendix C (Photographs C-1 through C-51). Additional representative photographs were taken during the wetland delineation to document onsite conditions where sample plots were not collected. These additional photographs are not included in Appendix C but can be provided upon request.

RESULTS

The following sections describe the results of the desktop data review and the completed wetland delineation.

Existing Data Review

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other water bodies (Figure A-2). The USGS topographic maps indicate the Survey Area primarily crosses open agriculture fields and wooded riparian areas.

The NWI data identify seven NWI wetlands intersecting the Survey Area, including: 1 palustrine forested (PFO) wetland, 2 palustrine shrub-scrub/emergent (PSS/EMA) wetlands, 3 palustrine unconsolidated bottom (PUB) wetlands, and 1 riverine wetland (Figure A-2).

The NHFL indicates the Survey Area overlaps with 100-year floodplain or regulated floodway designated areas for approximately 3.2 miles in Obion County and approximately 0.9 mile in Weakley County (Figure A-2).

The 2018 NAIP aerial photography indicates the Survey Area consists mostly of agricultural land and wooded riparian areas (Figures A-3 and A-4). Based on the NHD, three named streams, Cane Creek, Harris Fork Creek, and North Fork Obion River, are located within the Survey Area (Figure A-2).

The USDA NRCS SSURGO digital data indicate that portions of 15 soil map units in Obion County and 14 soil map units in Weakley County intersect the Survey Area (Figure A-3). Of the 15 soil map units in Obion County, 6 are included on local and national hydric soil lists; of the 14 soil map units in Weakley County, 4 are included on local and national hydric soil lists (Figure A-3).

The NOAA PDSI indicates that Obion and Weakley Counties, Tennessee experienced very moist conditions in the 3 months leading up to and during the time of the onsite field survey. This indicates that conditions onsite were significantly wetter than compared to the climate normal.

Wetland Delineation Field Survey

From March 2 through March 4, April 13 through April 21, and June 23 and June 24, 2020, a team of Burns & McDonnell wetland scientists conducted a wetland delineation. The location and extent of features identified within the Survey Area were recorded using sub-meter-accuracy GPS. The land cover and delineated wetlands from the field survey are discussed in detail below.

Vegetation. The Survey Area was primarily composed of upland fallow field, wooded riparian areas, and maintained utility line right-of-way (ROW). Typical vegetation in the upland portions of the Survey Area included Japanese honeysuckle (*Lonicera japonica*), annual bluegrass (*Poa annua*), Kentucky bluegrass (*Poa pratensis*), Canada goldenrod (*Solidago altissima*), narrowleaf plantain (*Plantago lanceolata*), hairy buttercup (*Ranunculous sardous*), and beaked cornsalad (*Valerianella radiata*).

Soils. Typical upland soils were brown (10YR 4/3 and 10YR 5/3), yellowish brown (10YR 5/4), and gray (10YR 6/1) in color and generally silt loam or silty clay loam in texture. Redoximorphic features were typically present in wetland soils, but they were uncommon in upland soils.

Hydrology. The primary source of hydrology for wetlands was overland flow, groundwater, and precipitation. Common indicators of hydrology within the wetlands included surface water, a high water table, saturation, drainage patterns, an algal mat or crust, crayfish burrows, oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC neutral test.

Delineated Areas

During wetland delineation efforts, 54 wetlands and 41 streams were identified within the Survey Area. The wetlands and streams are generally described below, and their locations are shown on Figure A-4 in Appendix A. Table 1 provides the types and size of each wetland, and Table 2

provides the type and length of each stream delineated. Sample plots were taken in wetlands and adjacent uplands. Data forms and photographs for these sample plots are included in Appendix B. Photographs of delineated streams and PUB wetlands are included in Appendix C.

Wetlands
A total of 54 wetlands, comprised of three wetland types (palustrine emergent wetlands (PEM), PFO, and PUB) totaling 8.72 acres, were delineated within the Survey Area (Photographs in Appendix B and C).

Forty-four PEM wetlands, totaling 7.58 acres, were delineated within the Survey Area. Dominant vegetation in the PEM wetlands generally included fox sedge (*Carex vulpinoidea*), blunt broom sedge (*Carex tribuloides*), upright sedge (*Carex stricta*), shallow sedge (*Carex lurida*), creeping jenny (*Lysimachia nummularia*), slender spikerush (*Eleocharis tenuis*), marsh seedbox (*Ludwigia palustris*), and common rush (*Juncus effusus*). Wetland hydrology was indicated in PEM wetlands by surface water, high water table, saturation, water marks, sediment deposits, drift deposits, an algal mat or crust, inundation visible on aerial imagery, a sparsely vegetated concave surface, aquatic fauna, surface soil cracks, drainage patterns, crayfish burrows, a hydrogen sulfide odor, oxidized rhizospheres on living roots, saturation visible on aerial imagery, a concave geomorphic position, and a positive FAC neutral test. Soils were primarily dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), and gray (10YR 5/1 and 10YR 6/1) in color and typically silt loam or silty clay loam in texture, with redoximorphic concentrations. Hydric soil was indicated by Hydrogen Sulfide, Loamy Gleyed Matrix, Depleted Matrix, or Redox Dark Surface.

Nine PUB wetlands, totaling 0.90 acre, were delineated within the Survey Area. Common vegetation around the PUB wetlands included little barley (*Hordeum pusillum*), butterweed (*Packera glabella*), annual bluegrass, hairy buttercup, and Japanese honeysuckle. The substrate was typically silt, and algae was often present within the wetlands.

One 0.03-acre PFO wetland was delineated within the Survey Area. Dominant vegetation in the PFO wetland included black willow (*Salix nigra*), sugarberry (*Celtis laevigata*), slippery elm (*Ulmus rubra*), and boxelder (*Acer negundo*). Wetland hydrology was indicated in the PFO wetland by surface water, a high water table, saturation, water marks, an algal mat or crust, water-stained leaves, oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC neutral test. Soils were grayish brown (10YR 5/2) in color and silt loam in texture, with redoximorphic concentrations. Hydric soil was indicated by a Depleted Matrix.

Table 1: Type and Size of Wetland Delineated

Wetland Number	Wetland Type[a]	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional[b]
W-102	PEM	0.09	0.02	5	No
W-105	PEM	0.11	0.05	5	No
W-121	PUB	1.38	0.63	7	Yes
W-201	PEM	1.48	0.95	1	Yes
W-202	PEM	0.13	0.07	1	Yes
W-203	PEM	0.49	0.36	1	No
W-204	PEM	0.21	0.21	1	No
W-205	PEM	0.03	0.03	2	No
W-206	PEM	0.34	0.25	3	No
W-207	PEM	0.26	0.18	3	Yes
W-208	PEM	0.15	0.10	3	Yes
W-209	PEM	0.14	0.11	3	Yes
W-210	PEM	0.13	0.10	3	Yes
W-211	PEM	0.11	0.08	3	No
W-212	PEM	0.06	0.05	3	Yes
W-213	PEM	0.01	0.01	4	No
W-214	PEM	0.11	0.11	4	No
W-215	PUB	0.04	0.04	4	No
W-216	PUB	0.07	0.05	5	No
W-217	PEM	0.03	0.01	5	No
W-218	PUB	0.05	0.02	5	No
W-219	PUB	0.09	0.01	5	No
W-220	PEM	0.10	0.07	5	No
W-221	PEM	0.04	0.02	6	No
W-222	PEM	0.14	0.08	6	No
W-225	PEM	0.06	0.03	10	No
W-226	PEM	0.15	0.10	10	Yes
W-227	PFO	0.07	0.03	13	Yes
W-228	PUB	0.10	0.08	16	Yes
W-229	PEM	0.09	0.09	16	Yes
W-230	PUB	0.03	0.20	17	No
W-231	PUB	0.23	0.02	17	No
W-232	PEM	0.04	0.03	18	No
W-233	PEM	0.06	0.06	19	No
W-234	PEM	0.10	0.09	19	No
W-235	PEM	0.09	0.06	19	No

Wetland Number	Wetland Type[a]	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional[b]
W-236	PEM	0.32	0.19	20	No
W-237	PEM	0.05	0.04	20	No
W-238	PEM	0.03	0.02	20	No
W-239	PEM	0.05	0.04	20	No
W-240	PEM	0.08	0.04	20	Yes
W-241	PEM	0.03	0.02	22	Yes
W-242	PEM	4.15	2.98	22	Yes
W-243	PEM	0.15	0.16	22	Yes
W-244	PEM	0.05	0.05	22	No
W-245	PEM	0.01	0.01	23	No
W-246	PEM	0.07	0.03	26	No
W-247	PUB	0.05	0.03	26	No
W-248	PEM	0.31	0.14	26	No
W-249	PEM	0.14	0.14	26	No
W-252	PEM	0.36	0.23	3	No
W-253	PEM	0.22	0.12	3	No
W-254	PEM	0.05	0.04	3	No
W-255	PEM	0.04	0.04	3	No
	Total:	**12.97**	**8.72**		

(a) Symbols for wetland type: PEM = palustrine emergent, PUB = palustrine unconsolidated bottom, PFO = palustrine forested
(b) An official Jurisdictional Determination can only be provided by the USACE. All potentially non-jurisdictional wetlands are shaded gray.

Streams

Forty-two streams, consisting of three stream types (perennial, intermittent, and ephemeral) were identified within the Survey Area (Photographs, Appendix C). A total of 17,736 linear feet of stream was delineated, however, only 8,395 linear feet of stream were identified within the Survey Area. The different stream types are summarized below.

Thirteen ephemeral streams, extending for 1,315 linear feet were delineated within the Survey Area. Ephemeral streams were characterized by a defined bed and bank, but they had limited or no flow during the site visit, indicating that these streams largely carry water only during and after precipitation events. Ephemeral streams ranged from approximately 0.75 to 2 feet in width at the ordinary high-water mark (OHWM) with bank heights ranging from 0.25 to 3 feet. At the time of delineation, water was observed at a depth of 1 to 8 inches. The substrates of the ephemeral streams were comprised typically of silt. These streams flowed through upland fields, along roadsides, and within areas manipulated for stormwater runoff. Riparian vegetation included species such as purple deadnettle (*Lamium purpureum*), henbit deadnettle (*Lamium amplexicaule*), curly dock (*Rumex crispus*), Japanese honeysuckle, Canada goldenrod, and beaked cornsalad.

Nineteen intermittent streams, totaling 4,644 feet were delineated within the Survey Area. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit. This is a likely indicator that the stream is partially influenced by groundwater, but it may not flow during dry periods. Intermittent streams ranged from approximately 0.5 to 5 feet in width at the OHWM with bank heights ranging from 1 to 20 feet. At the time of delineation, water was observed at a depth of 0.25 to 1 foot. The substrates of intermittent streams were comprised of silt and/or gravel. These streams flowed through upland fields, along roadsides, and within maintained utility line ROW. Common riparian vegetation included species such as purple deadnettle, henbit deadnettle, Japanese honeysuckle, butterweed, beaked cornsalad, Canada goldenrod, boxelder, multiflora rose (*Rosa multiflora*), stinging nettle (*Urtica dioica*), and pale dock (*Rumex altissimus*).

Ten perennial streams, including Grove Creek, Cane Creek, and North Fork Obion River, extending for 2,663 linear feet were delineated within the Survey Area. Perennial streams were characterized by the presence of a substantial volume of flow at the time of the site visit as well as secondary characteristics such as observance of fish and other aquatic fauna, indicating that water flows year-round. Perennial streams were approximately 3.5 to 140 feet in width at the OHWM with bank heights ranging from 2 to 25 feet. At the time of delineation, water was observed at a depth of 0.5 to 2.5 feet. The depth of S-215 (North Fork Obion River) could not be estimated during field survey due to the size of the stream, flowrate, and turbidity of the water. The substrates of perennial streams were typically comprised of silt, gravel, and cobble, although this could not be confirmed at all streams due to turbidity. These streams typically flowed through clearings of wooded riparian areas. Common riparian vegetation included boxelder, purple deadnettle, henbit deadnettle, Japanese honeysuckle, butterweed, Canada goldenrod, beaked cornsalad, multiflora rose, pale dock, great ragweed (*Ambrosia trifida*), and Virginia wildrye (*Elymus virginicus*).

Table 2: Type and Length of Streams Delineated

Stream Number	Stream Type	Length of Stream (feet)	Length of Stream (feet) in Survey Area	Figure A-4 Page Number	Jurisdictional[a]
S-116	Perennial	2,752	105	5	Yes
S-117	Ephemeral	1,155	201	5	No
S-131	Ephemeral	2,580	134	7	No
S-201	Ephemeral	180	100	1	No
S-202 (Grove Creek)	Perennial	192	104	1	Yes
S-203	Intermittent	287	100	1	Yes
S-204	Intermittent	146	102	1	Yes
S-205	Intermittent	39	12	2	Yes
S-206	Intermittent	141	108	2	Yes

Stream Number	Stream Type	Length of Stream (feet)	Length of Stream (feet) in Survey Area	Figure A-4 Page Number	Jurisdictional[a]
S-207	Intermittent	164	107	3	Yes
S-208	Ephemeral	90	90	3	No
S-209	Ephemeral	76	38	3	No
S-210	Intermittent	152	107	3	Yes
S-211	Intermittent	347	62	3	Yes
S-212	Perennial	165	105	3	Yes
S-213	Ephemeral	28	28	3	No
S-214	Perennial	2,124	1,674	3, 4	Yes
S-215 (North Fork Obion River)	Perennial	184	105	4	Yes
S-217	Perennial	212	108	9	Yes
S-218	Ephemeral	139	103	10	No
S-219	Perennial	224	138	10	Yes
S-220	Perennial	145	106	10	Yes
S-221	Ephemeral	67	52	11	No
S-222	Intermittent	145	114	11	Yes
S-223	Intermittent	131	107	12	Yes
S-224	Ephemeral	217	132	13	No
S-225 (Cane Creek)	Perennial	160	109	16	Yes
S-226	Ephemeral	803	148	16	No
S-227	Ephemeral	143	119	17	No
S-228	Perennial	129	109	20	Yes
S-229	Intermittent	959	905	21, 22	Yes
S-230	Ephemeral	101	76	21	No
S-231	Intermittent	2,015	1,728	23	Yes
S-232	Intermittent	81	72	23	Yes
S-233	Intermittent	179	138	24	Yes
S-234	Intermittent	161	124	24	Yes
S-235	Intermittent	136	108	25	Yes
S-236	Ephemeral	105	94	25	No
S-237	Intermittent	243	172	25	Yes
S-238	Intermittent	208	190	26	Yes
S-239	Intermittent	231	161	26	Yes
S-301	Intermittent	633	227	10	Yes

Stream Number	Stream Type	Length of Stream (feet)	Length of Stream (feet) in Survey Area	Figure A-4 Page Number	Jurisdictional[a]
	Total:	**18,369**	**8,622**		

(a) An official Jurisdictional Determination can only be provided by the USACE. All potentially non-jurisdictional streams are shaded gray.

SUMMARY

Burns & McDonnell conducted a wetland delineation of the Survey Area to identify wetlands and other water bodies. A total of 54 wetlands and 42 streams were identified.

Factors considered to determine jurisdictional waters of the U.S. included criteria defined under the recent April 21, 2020 publication of The Navigable Waters Protection Rule: Definition of "Waters of the United States". Conditions observed during the wetland delineation determined that 16 wetlands and 29 streams meet the current definition of waters of the U.S. (Tables 1 and 2 above). The features indicated as "Yes" in Tables 1 and 2 are presumed to be under the jurisdiction of the USACE; however, an official Jurisdictional Determination can only be made by the USACE.

If permanent impacts to jurisdictional waters of the U.S. cannot be completely avoided, they should be minimized to the extent practicable, and a Section 404 permit from the USACE will be required. If all impacts are temporary in nature, and are not within a Section 10 navigable water, the Project may qualify for authorization under a Nationwide Permit (NWP) 33 for Temporary Construction, Access, and Dewatering. Under NWP 33, a formal Pre-Construction Notification (PCN) to the USACE is not required provided that:

- near normal downstream flows can be maintained during construction
- fill will not be eroded by expected high flows
- fill or dredged materials are removed entirely
- the area is restored to original contours and revegetated as appropriate upon the completion of construction

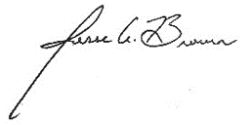
Alternatively, if all impacts are temporary in nature and occur within the existing utility line ROW, the Project may qualify for authorization under a NWP 3 for Maintenance. The NWP 3 authorizes the repair, rehabilitation, or replacement of previously authorized and currently serviceable structures provided that the structure is not put to a use differing from which it was originally permitted. Under NWP 3, a formal PCN to the USACE is not required provided that all general and regional conditions are met.

Nationwide permit 12 for Utility Line Activities may be appropriate provided impacts do not exceed 0.5 acre per crossing. Temporary impacts during construction would also be authorized under the NWP 12. A formal PCN would be required if permanent impacts at each individual water of the U.S. crossing exceeded 0.1 acre, if the project includes a permanent impact within a jurisdictional area that parallels a stream bed within that jurisdictional area, or if mechanized tree

clearing occurs within a forested wetland. Additionally, per Tennessee Regional Condition for NWP 12, a PCN is required for all proposed blasting within waters of the U.S.

If you have any questions or require additional information, feel free to contact Jesse Brown by telephone at (770) 510-4526 or by e-mail at jabrown3@burnsmcd.com.

Sincerely,



Jesse A. Brown
Senior Environmental Scientist
Burns and McDonnell

Attachments:

Appendix A - FIGURES
Appendix B - ROUTINE WETLAND DETERMINATION DATA FORMS, ATLANTIC AND GULF COAST PLAIN REGION
Appendix C - SITE PHOTOGRAPHS

APPENDIX A - FIGURES

Obion County

Weakley County

Union City

Troy

Rives

Martin

Missouri

Kentucky

Tennessee

Arkansas

Project ROW

Project Alignment

County Boundary

Access Road Centerline

NORTH

1.5 0.75 0 1.5

Scale in Miles

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 1B of 27B

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 6/30/2020

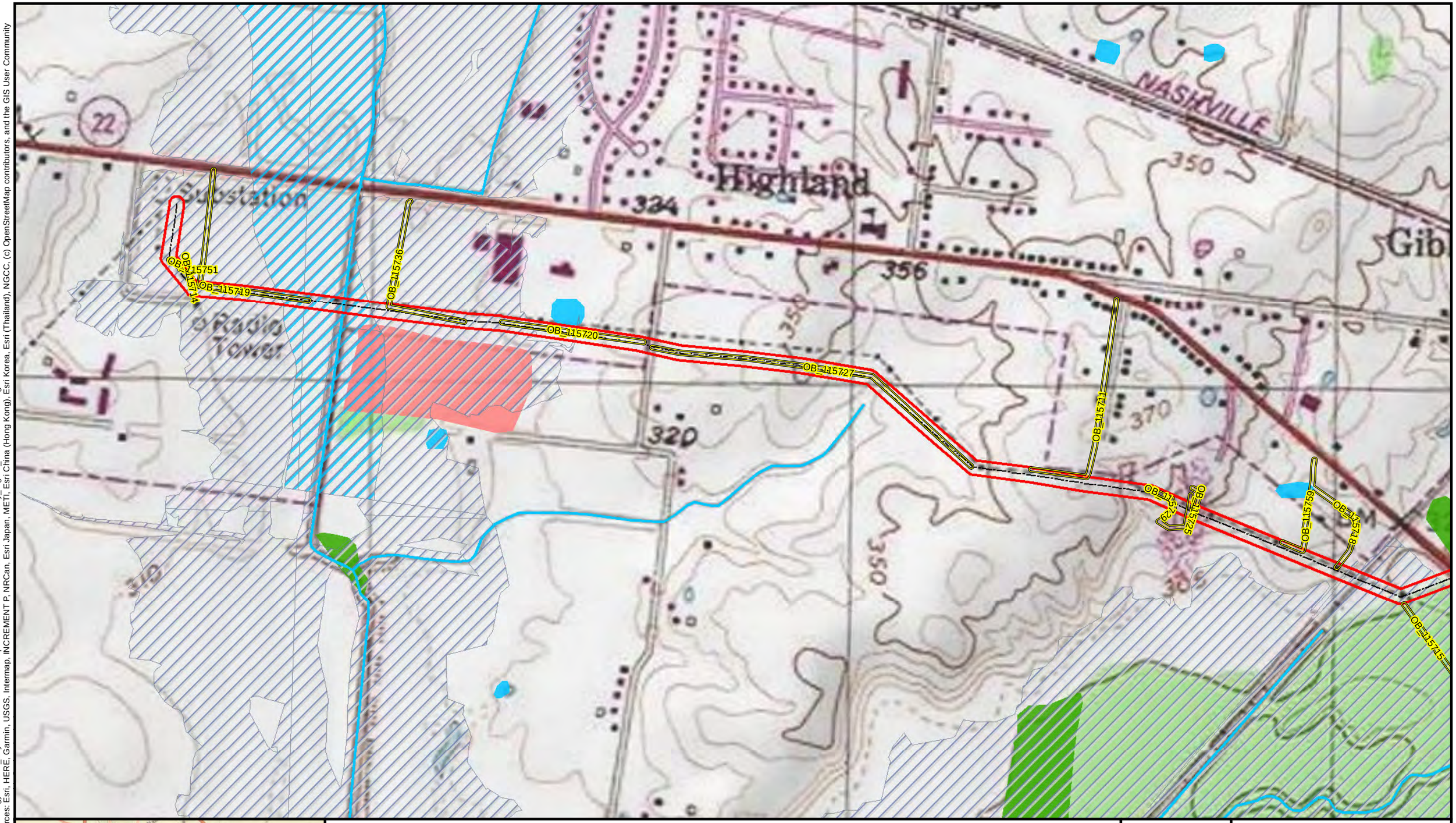


Figure A-2
NWI, NHD, FEMA, and
Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 1 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialData\Files\ArcDocs\WDRTLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRITLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 2 of 11

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020

Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

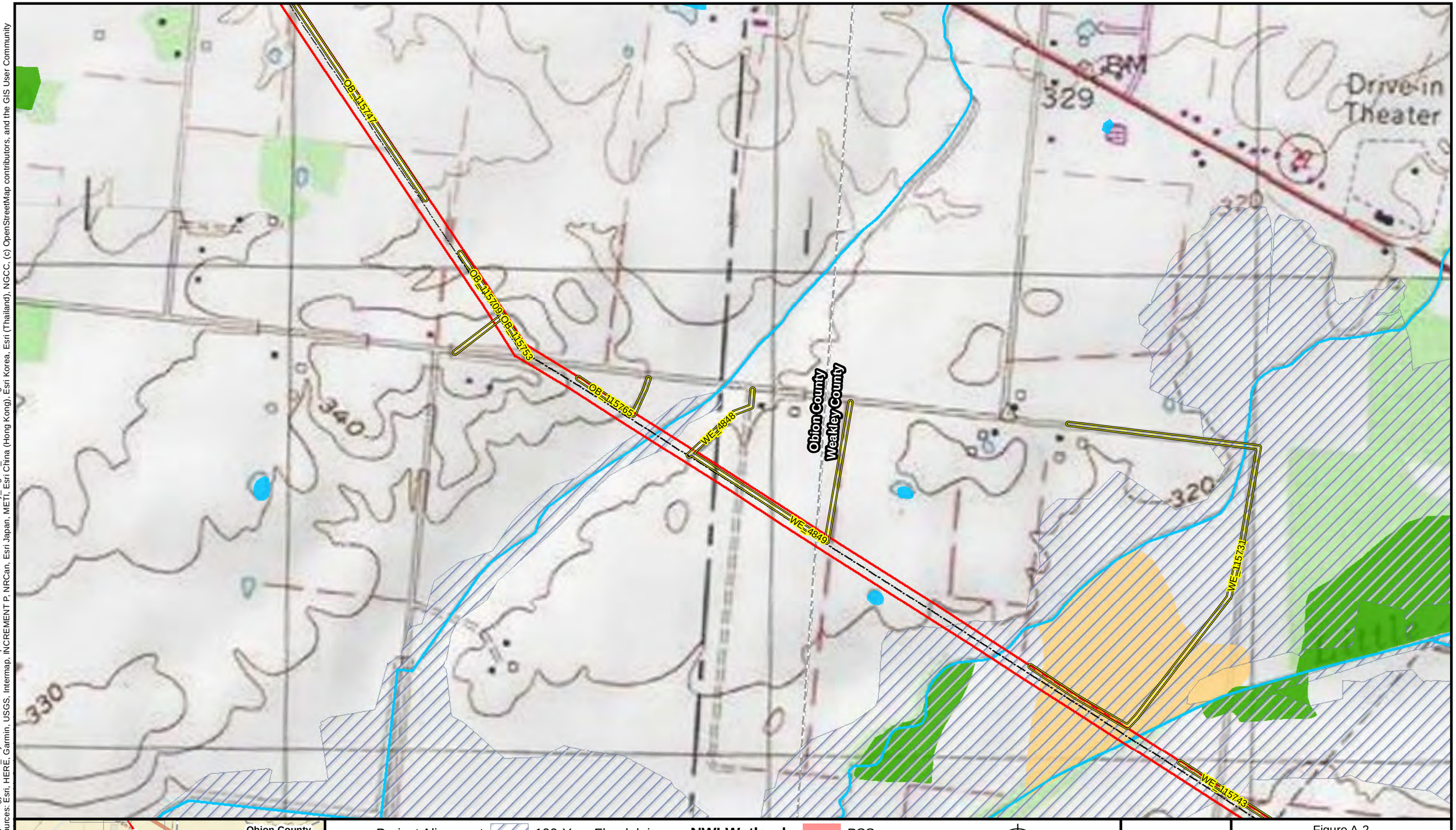
BURNS McDONNELL

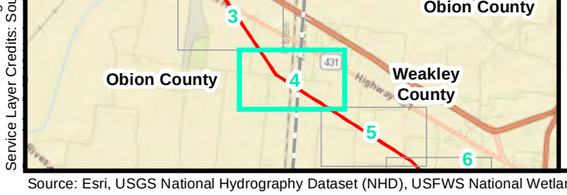
Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 3 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialData\Files\ArcDocs\WDRTLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020





Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

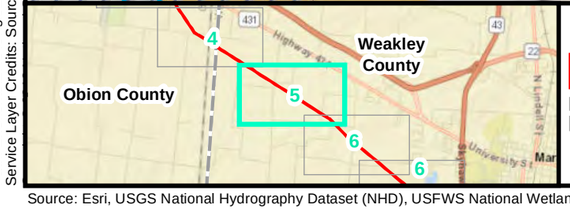
BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and
Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialData\Files\ArcDocs\WDRTLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 5 of 11

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020

WE_115716
WE_115740
WE_115741
WE_115744
WE_115723
WE_115726
WE_115713

Martin
Cane Creek
Obion County
Weakley County
Mt Pelia Rd
E Main St
45E
431
216

Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PSS
PEM
PAB
PFO
PUB
PSS/PEM
Riverine

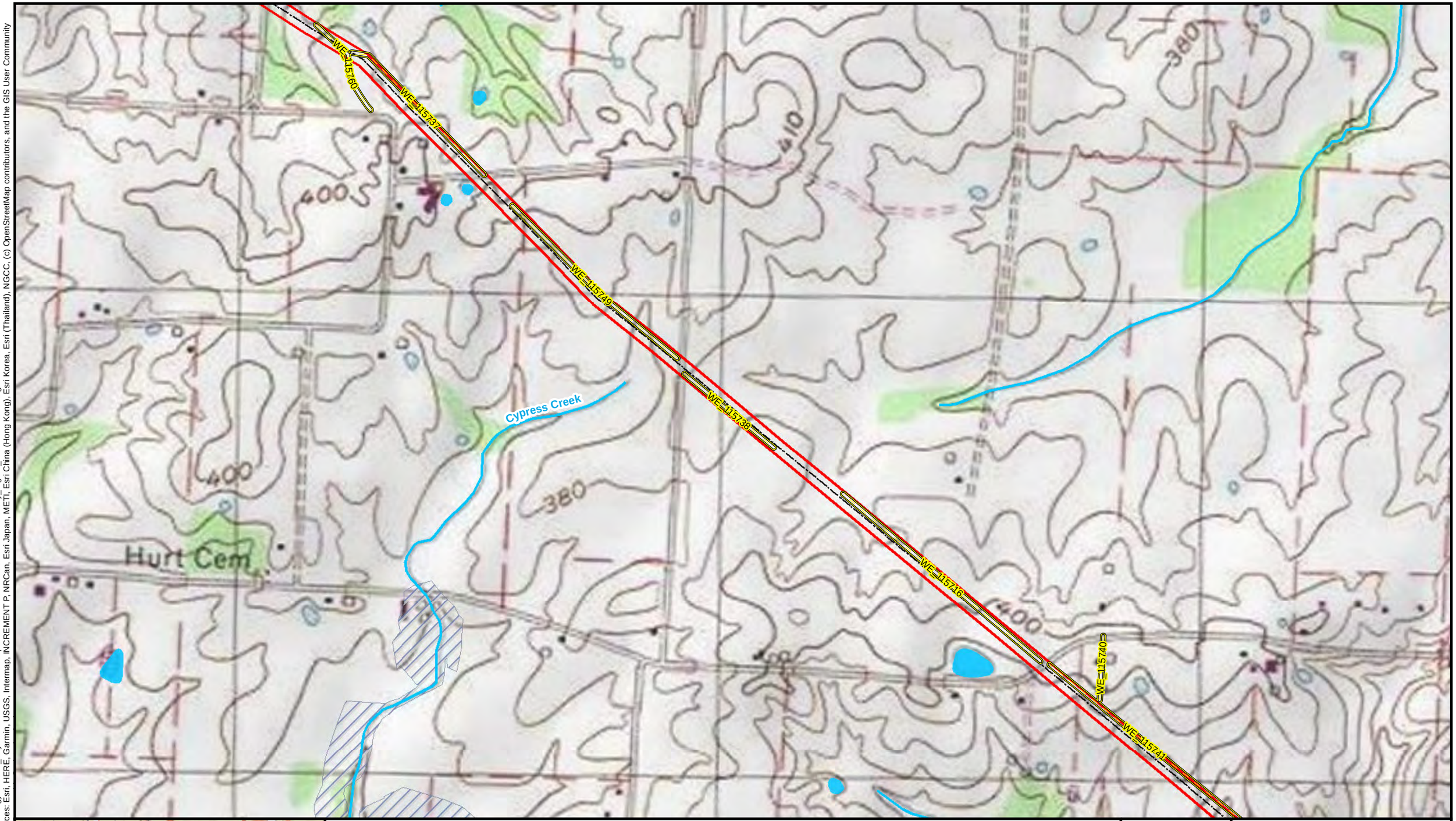
NORTH
600 300 0 600
Scale in Feet

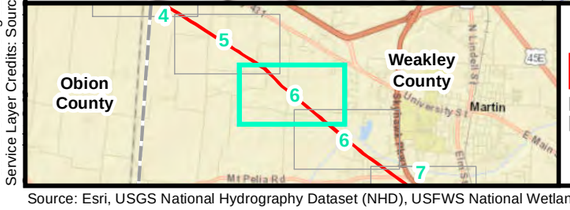
BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and
Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 6 of 11

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020





Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

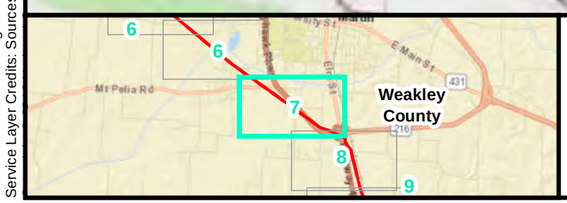
NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and
Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020



Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

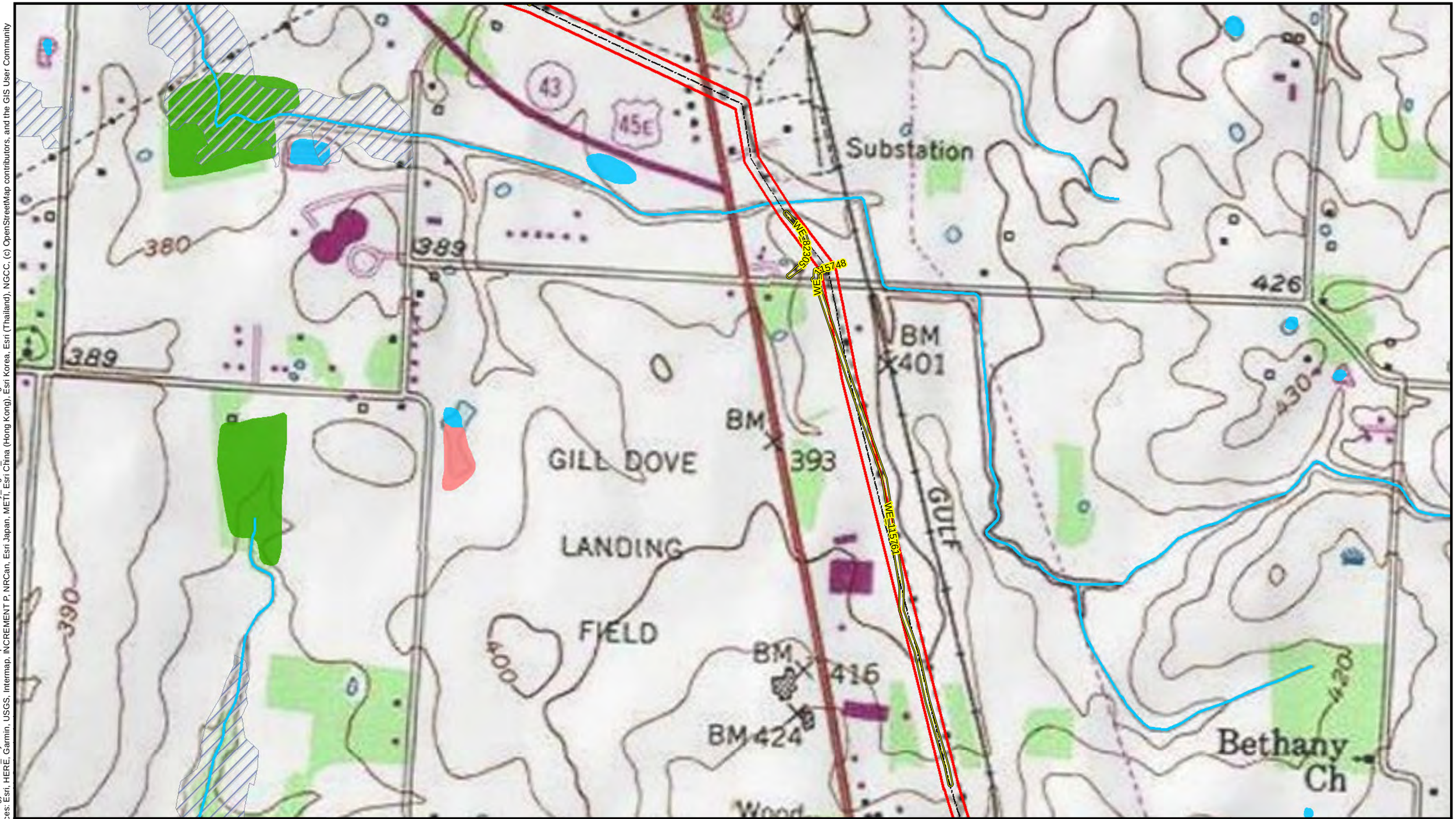
NORTH
600 300 0 600
Scale in Feet

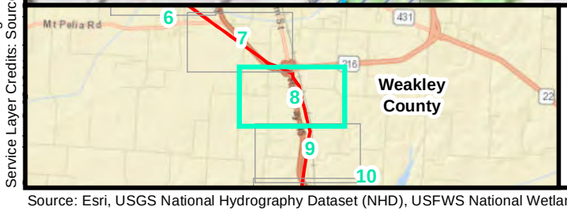
BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 8 of 11

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020





Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

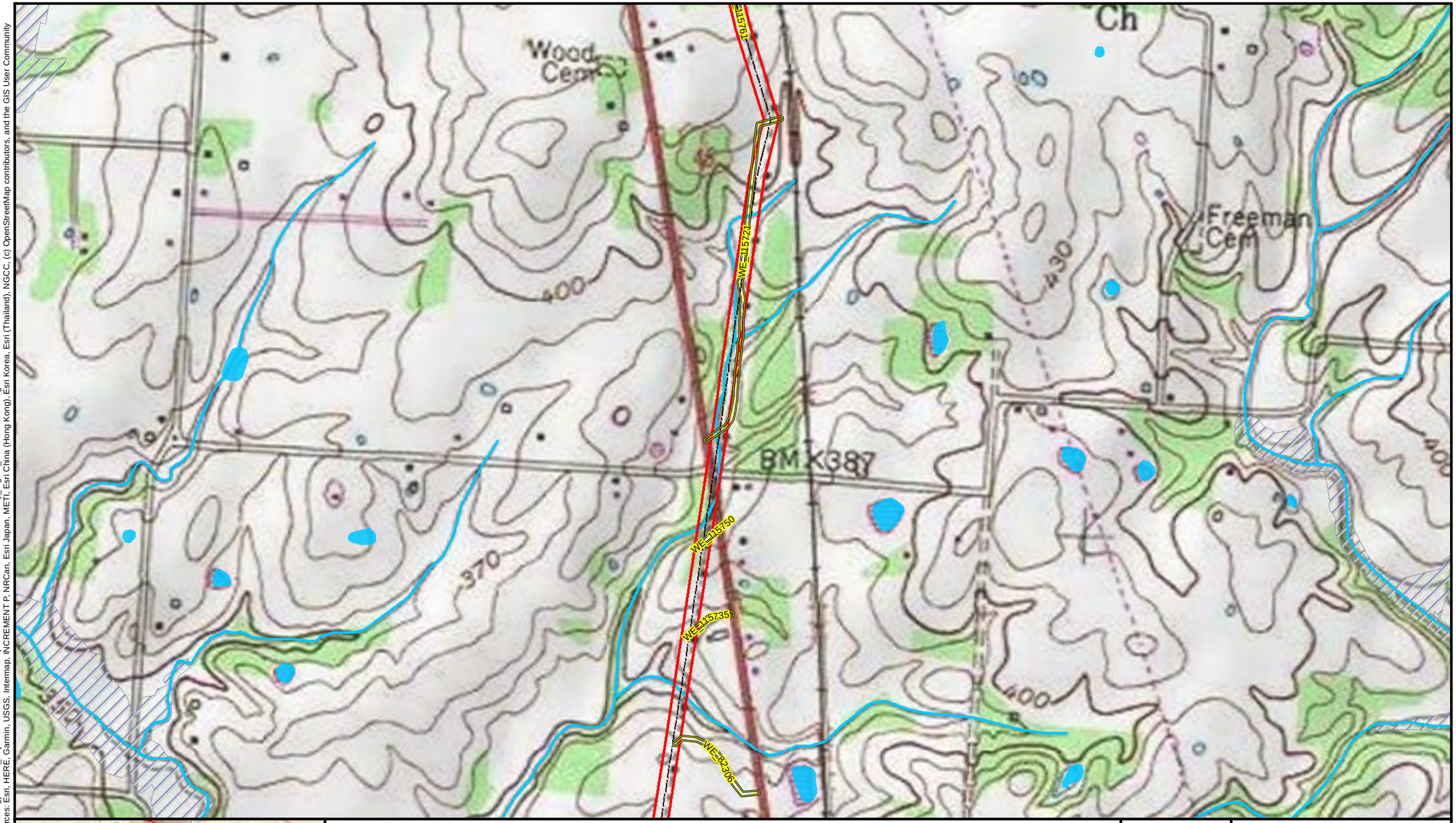
NORTH
600 300 0 600
Scale in Feet

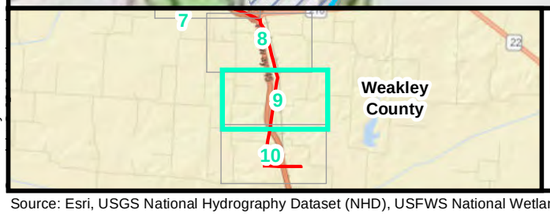
BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 9 of 11

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020





Project Alignment
Project ROW
County Boundary
NHD Flowline

100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM

PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

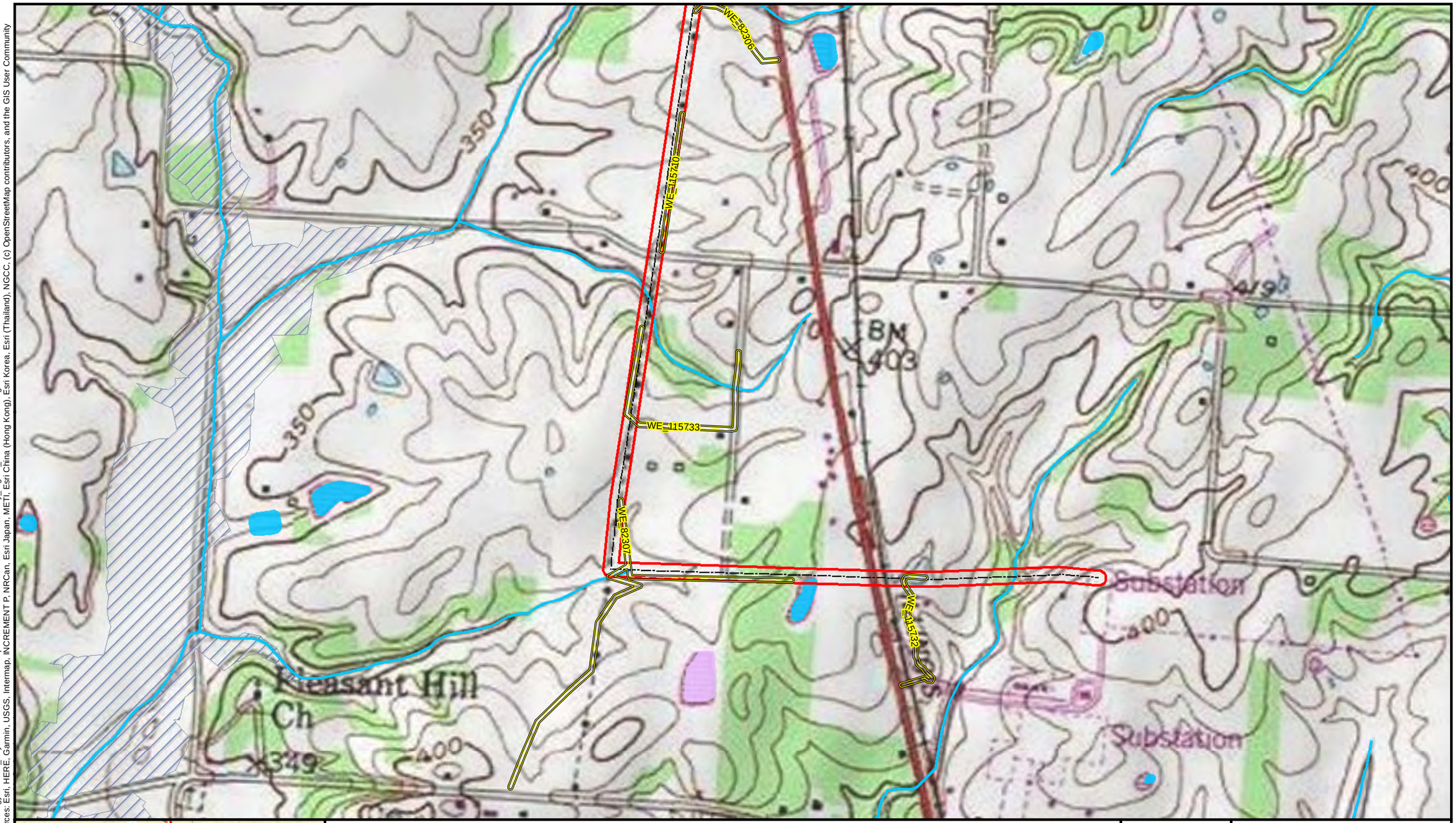
BURNS McDONNELL

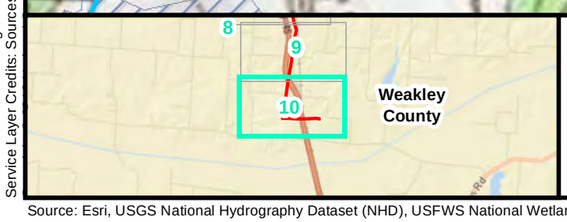
Figure A-2
NWI, NHD, FEMA, and Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 10 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFilesArcDocs\WDR\TLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020





Project Alignment
Project ROW
County Boundary
NHD Flowline
100-Year Floodplain
100-Year Floodway
Access Road Centerline
Access Road Extent

NWI Wetland
PEM
PFO
PSS/PEM
PSS
PAB
PUB
Riverine

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-2
NWI, NHD, FEMA, and
Topographic Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 11 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialIDataFiles\ArcDocs\WDRVTLine\Sky_Figure_A-2.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), Origis, Burns & McDonnell

Issued: 7/2/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRYTLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Grenada silt loam, 5 to 8 percent slopes, eroded

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Center silt loam, 0 to 2 percent slopes

Routon silt loam, 0 to 2 percent slopes

Grenada silt loam, 2 to 5 percent slopes

Grenada silt loam, 5 to 8 percent slopes, eroded

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Grenada silt loam, 2 to 5 percent slopes

Memphis silt loam, 2 to 5 percent slopes, northern phase

Loring silt loam, 8 to 12 percent slopes, eroded

Grenada silt loam, 5 to 8 percent slopes, eroded

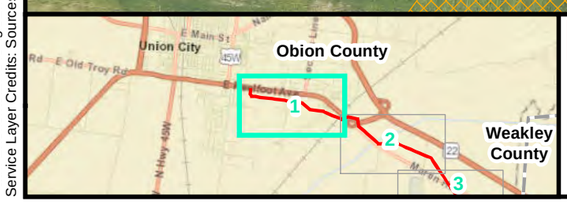
Calloway silt loam

Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Waverly silt loam

Falaya silt loam, 0 to 2 percent slopes



Project ROW
Project Alignment
County Boundary
Hydric Soil
Non-Hydric Soil
Access Road Centerline
Access Road Extent

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 1 of 11

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Waverly silt loam

Routon-Bonn silt loam complex

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Center silt loam, 0 to 2 percent slopes

Waverly silt loam

Center silt loam, 0 to 2 percent slopes

Center silt loam, 0 to 2 percent slopes

Routon-Bonn silt loam complex

Center silt loam, 0 to 2 percent slopes

Routon-Bonn silt loam complex

Water

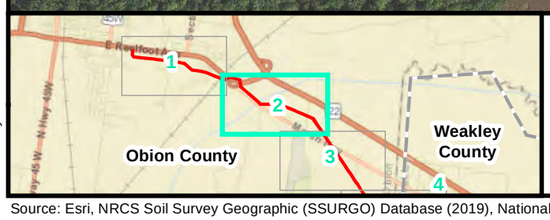
Routon-Bonn silt loam complex

Fountain silt loam

Center silt loam, 0 to 2 percent slopes

Waverly silt loam

Routon-Bonn silt loam complex



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

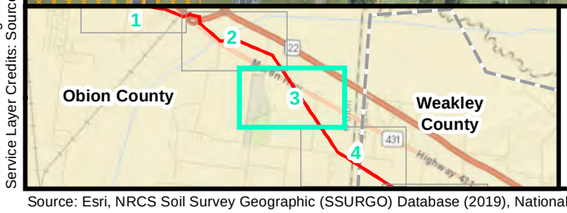
Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 2 of 11

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Path: Z:\Client\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRTLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, iNCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Routon-Bonn silt loam complex
Routon-Bonn silt loam complex
Fountain silt loam
Waverly silt loam
Center silt loam, 0 to 2 percent slopes
Center silt loam, 0 to 2 percent slopes
Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase
Routon-Bonn silt loam complex
Routon-Bonn silt loam complex
Center silt loam, 0 to 2 percent slopes
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Routon-Bonn silt loam complex
Routon silt loam, 0 to 2 percent slopes
Loring silt loam, 2 to 5 percent slopes
Grenada silt loam, 2 to 5 percent slopes, eroded
Loring silt loam, 5 to 8 percent slopes, eroded
Fountain silt loam
Routon-Bonn silt loam complex
Routon-Bonn silt loam complex
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Center silt loam, 0 to 2 percent slopes
Routon-Bonn silt loam complex
Calloway silt loam



Project ROW
Project Alignment
County Boundary
Hydric Soil
Non-Hydric Soil
Access Road Centerline
Access Road Extent

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

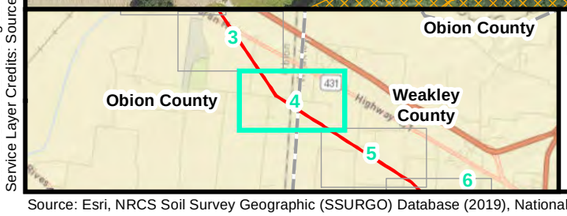
Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 3 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialDataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Center silt loam, 0 to 2 percent slopes
Center silt loam, 0 to 2 percent slopes
Calloway silt loam
Calloway silt loam
Routon-Bonn silt loam complex
Grenada silt loam, 2 to 5 percent slopes
Grenada silt loam, 2 to 5 percent slopes
Obion County
Weakley County
Center silt loam, 0 to 3 percent slopes
Calloway silt loam
Grenada silt loam, 5 to 8 percent slopes, eroded
Routon silt loam, 0 to 2 percent slopes
Routon-Bonn silt loam complex
Calloway silt loam
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Waverly, Rosebloom silt loams and Frequently flooded soils
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Waverly silt loam
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
Grenada silt loam, 5 to 8 percent slopes, severely eroded
Gren Loring silt



Project ROW
Project Alignment
County Boundary
Hydric Soil
Non-Hydric Soil
Access Road Centerline
Access Road Extent

NORTH
600 300 0 600
Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 4 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDRTLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Waverly, Rosebloom silt loams and Frequently flooded soils brief duration

Grenada silt loam, 5 to 8 percent slopes, severely eroded

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 5 to 8 percent slopes, severely eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 5 to 8 percent slopes, severely eroded

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 8 to 12 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 2 to 5 percent slopes, eroded

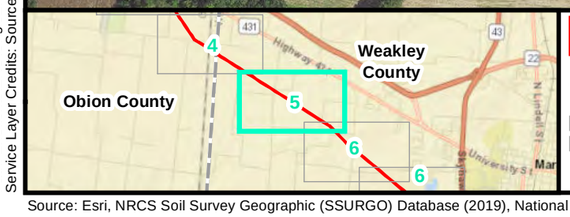
Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 8 to 12 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 5 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRTLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Lexington silt loam, 12 to 20 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Ochlockonee loam, occasionally flooded

Grenada silt loam, 2 to 5 percent slopes, eroded

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Calloway silt loam

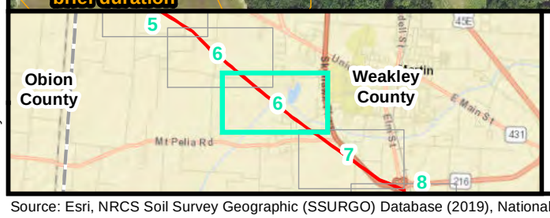
Routon silt loam, 0 to 2 percent slopes

Loring silt loam, 8 to 12 percent slopes, severely eroded

Calloway silt loam

Calloway silt loam

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 6 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRITLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 8 to 12 percent slopes, severely eroded

Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase

Loring silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Calloway silt loam

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded

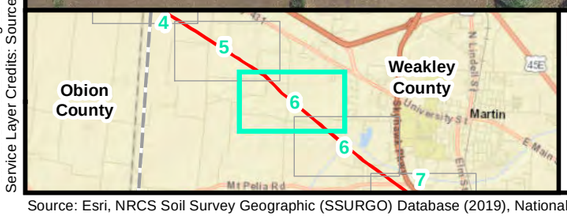
Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Loring silt loam, 5 to 8 percent slopes, severely eroded

Lexington silt loam, 12 to 20 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 7 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDRITLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Calloway silt loam

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 8 to 12 percent slopes, severely eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Routon silt loam, 0 to 2 percent slopes

Routon silt loam, 0 to 2 percent slopes

Grenada silt loam, 2 to 5 percent slopes, eroded

Calloway silt loam

Grenada silt loam, 2 to 5 percent slopes, eroded

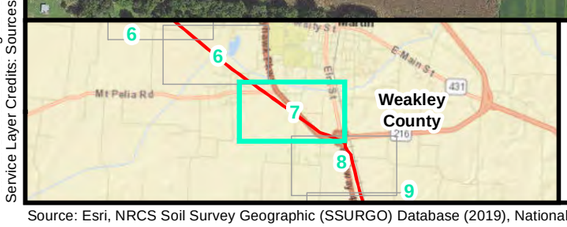
Routon silt loam, 0 to 2 percent slopes

Grenada silt loam, 2 to 5 percent slopes, eroded

Routon silt loam, 0 to 2 percent slopes

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration



Project ROW
Project Alignment
County Boundary
Hydric Soil
Non-Hydric Soil
Access Road Centerline
Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Routon silt loam, 0 to 2 percent slopes

Grenada silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Routon silt loam, 0 to 2 percent slopes

Grenada silt loam, 2 to 5 percent slopes, eroded

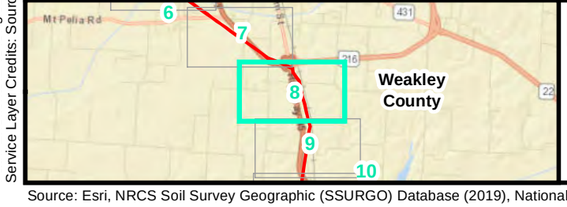
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Routon silt loam, 0 to 2 percent slopes

Loring silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Grenada silt loam, 8 percent slopes, verely eroded



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialDataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Routon silt loam, 0 to 2 percent slopes

Routon silt loam, 0 to 2 percent slopes

silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 8 to 12 percent slopes, severely eroded

Grenada silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 2 to 5 percent slopes, eroded

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Grenada silt loam, 5 to 8 percent slopes, severely eroded

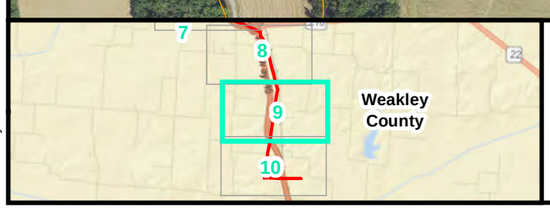
Grenada silt loam, 2 to 5 percent slopes, eroded

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Loring silt loam, 8 to 12 percent slopes, severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded severely eroded

Loring silt loam, 2 to 5 percent slopes, eroded



Project ROW

Project Alignment

County Boundary

Hydric Soil

Non-Hydric Soil

Access Road Centerline

Access Road Extent

NORTH

600 300 0 600

Scale in Feet

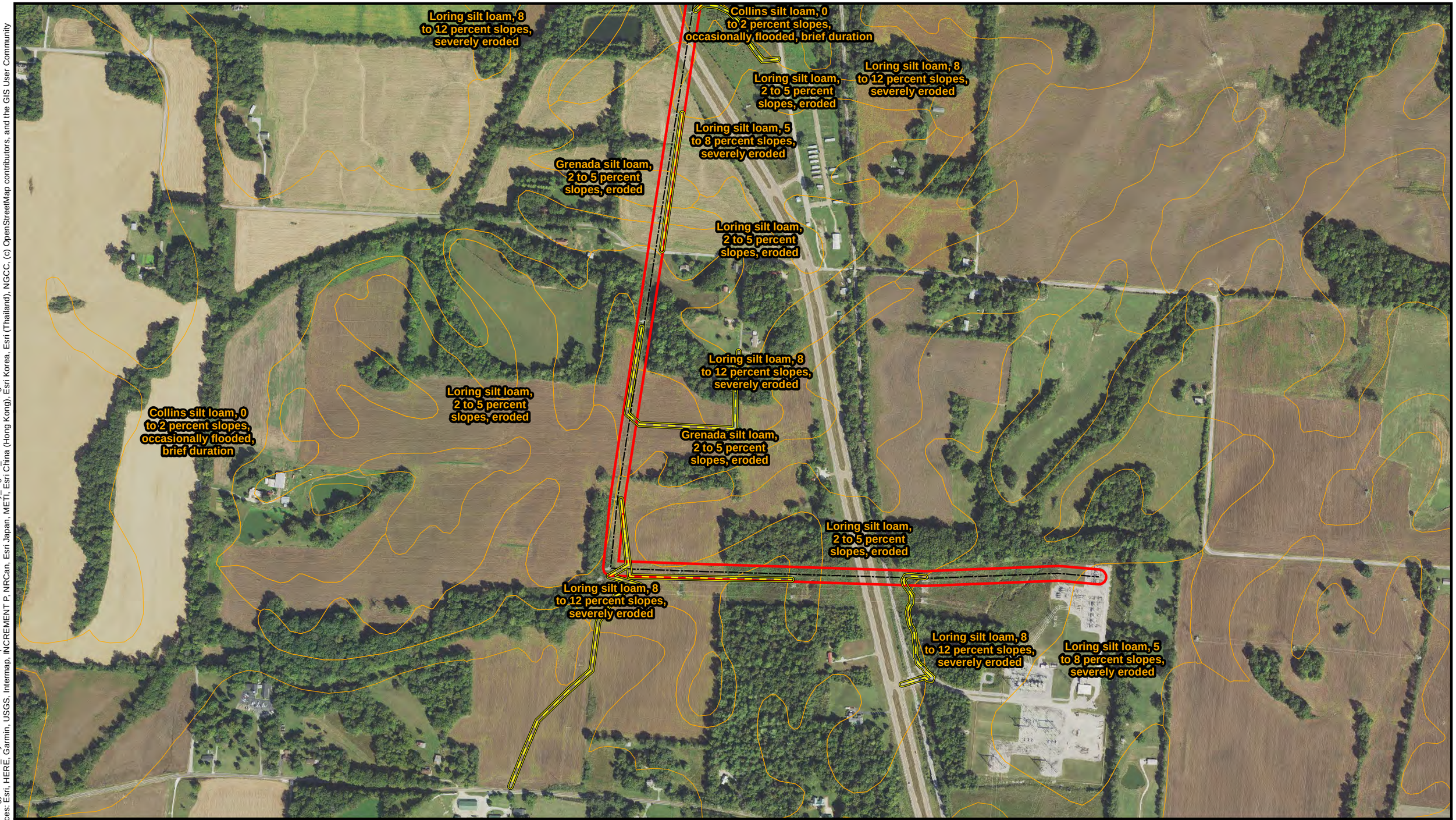
BURNS McDONNELL

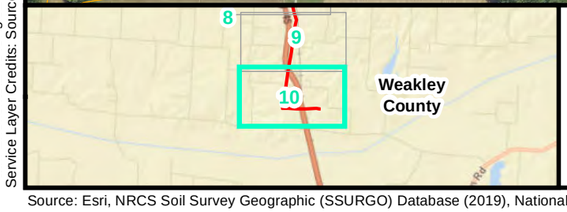
Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 10 of 11

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialData\Files\ArcDocs\WDR\TLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, iNCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020





Project ROW
Project Alignment
County Boundary
Hydric Soil
Non-Hydric Soil
Access Road Centerline
Access Road Extent

NORTH

600 300 0 600

Scale in Feet

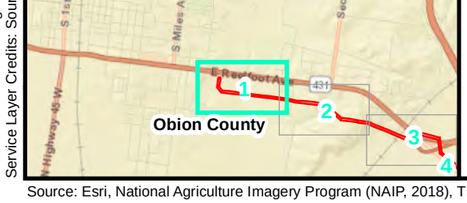
BURNS McDONNELL

Figure A-3
NRCS Soils and Aerial Map
Skyhawk Fiber Line
Origis
Obion and Weakley Counties, TN
Page 11 of 11

Source: Esri, NRCS Soil Survey Geographic (SSURGO) Database (2019), National Agriculture Imagery Program (NAIP, 2018), Origis, Burns & McDonnell

Issued: 7/2/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialDataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-3.mxd kdboatright 7/2/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

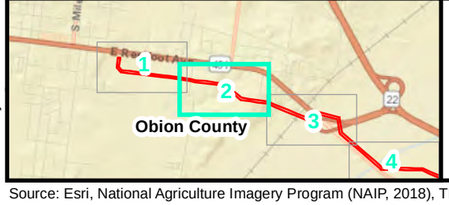
0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 1 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

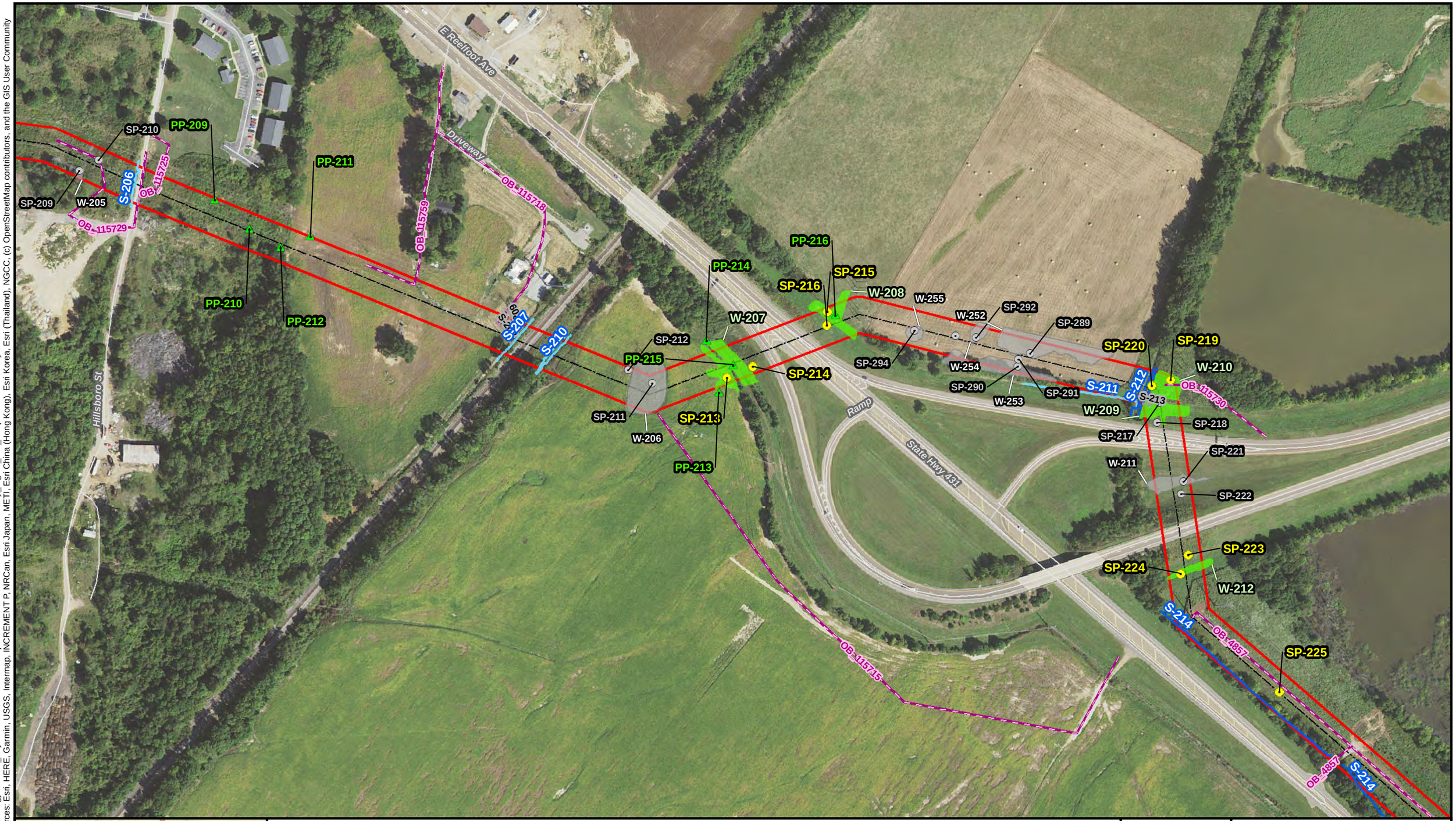
0 125 250
Scale in Feet

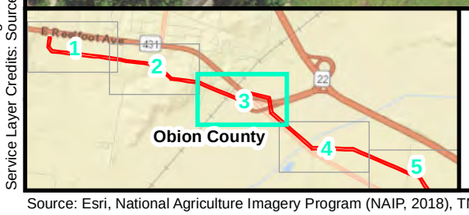
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 2 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

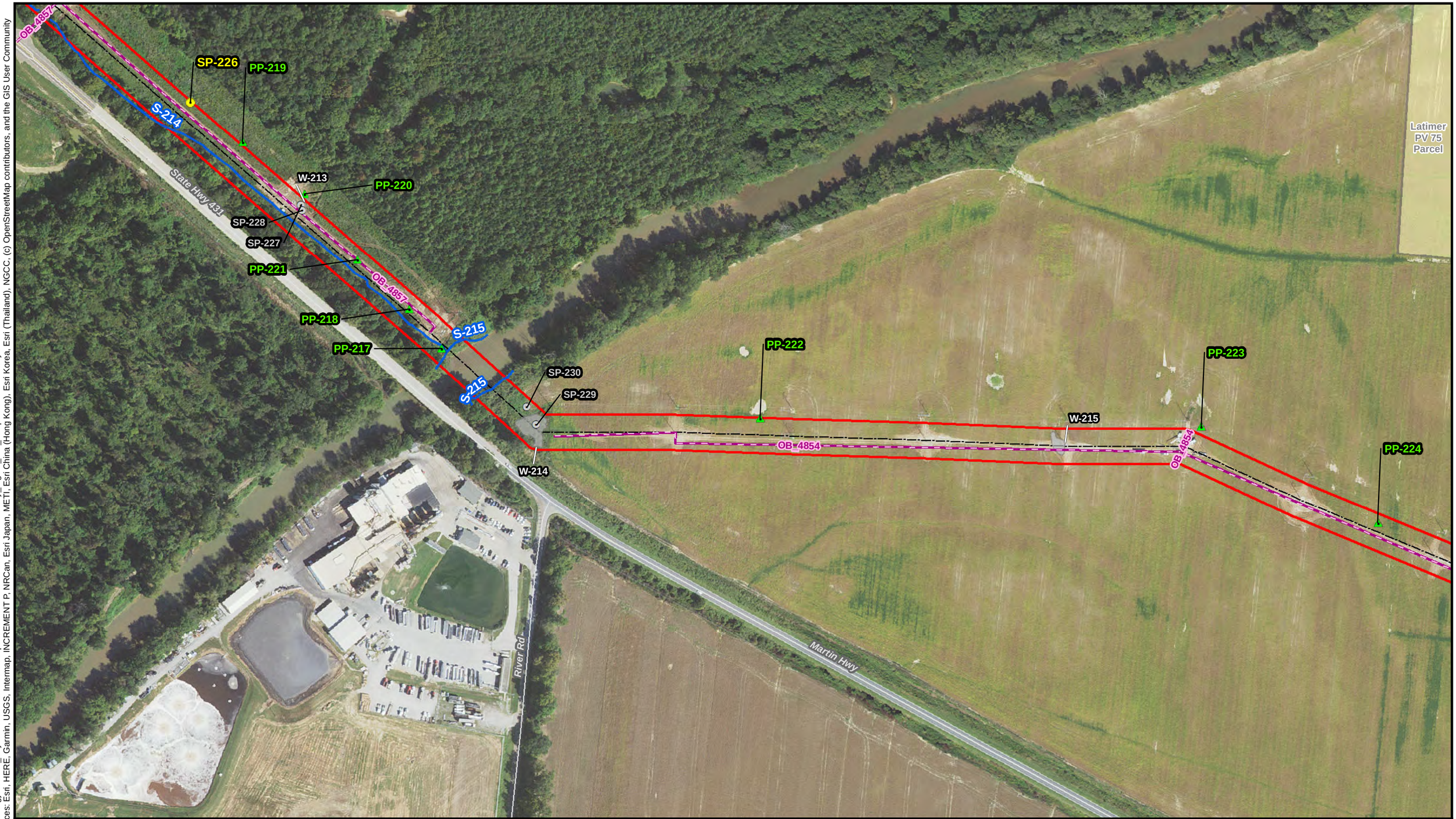
BURNS McDONNELL

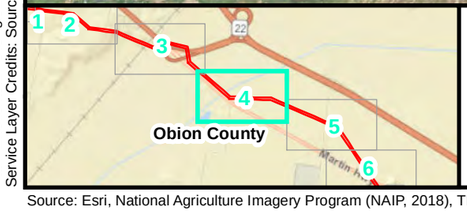
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 3 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\Origis\Energy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 4 of 28

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 5 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 6 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\Origis\Energy\121610_SkyhawkSolar\Studies\GeospatialData\FilesArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

PP-233
OB-115756
W-121
OB-115756
OB-115742
NEPA TVA
Easement Survey
area Parcel
TVA Sub 7
acres Parcel
Felix Winter
133 Parcel
Moore PV
75 Parcel
S-131
Martin Hwy
Blount St
Ellen St
Driveway
Meek Rd

Obion County
Weakley County
5
6
7
8
9

Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline
Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands
and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 7 of 28

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialData\Files\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Felix Winter
133 Parcel

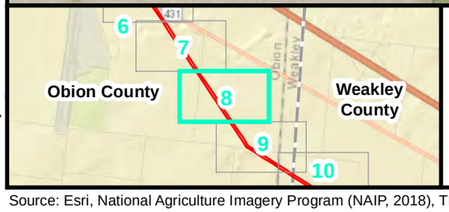
OB-115742

Meek Rd

PP-234

PP-235

OB-115747



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

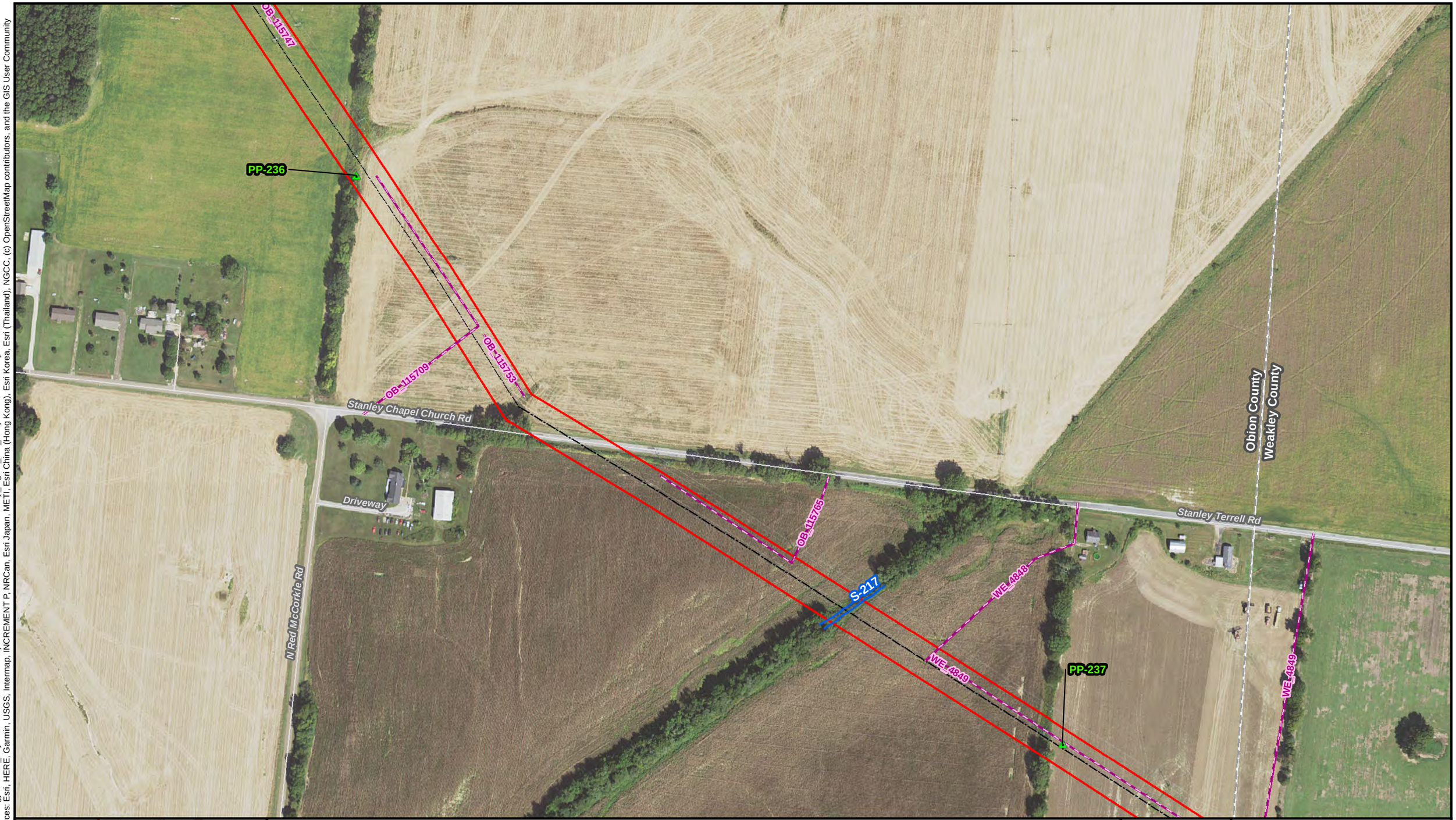
0 125 250
Scale in Feet

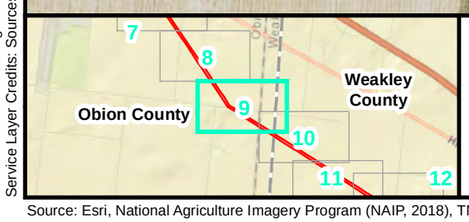
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 8 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

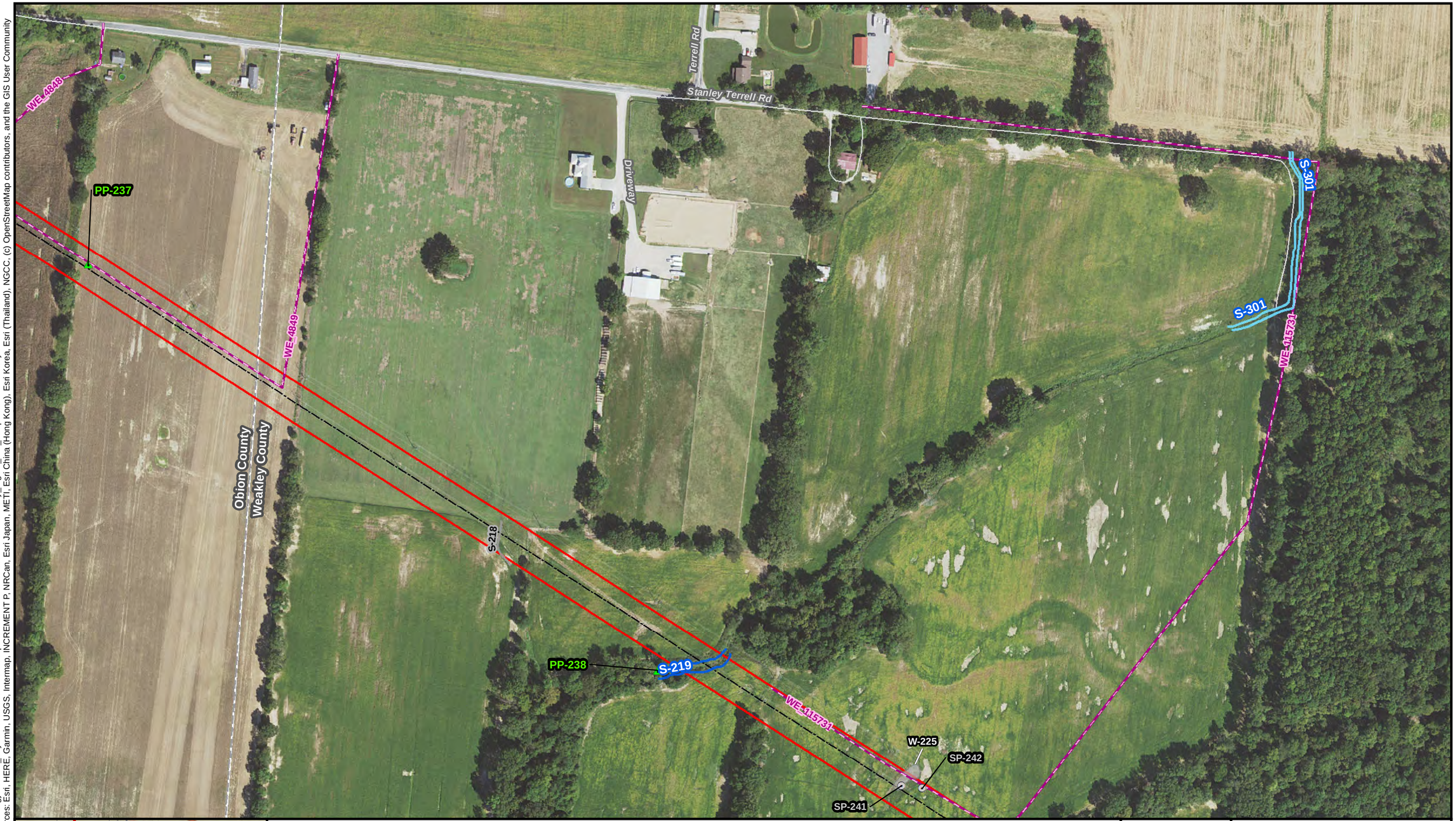
BURNS McDONNELL

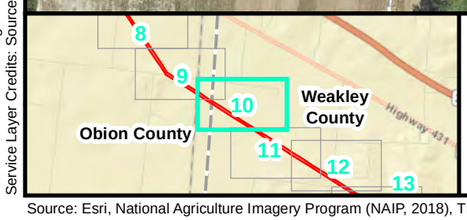
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 9 of 28

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\Geospatial\DataFiles\ArcDocs\WDRTLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

BURNS McDONNELL

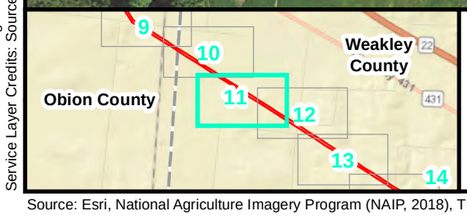
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 10 of 28

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

SP-242
SP-241
W-225
WE_115731
S-220
WE_115743
PP-239
SP-243
W-226
SP-244
PP-240
WE_115722
Shadtown Rd



Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

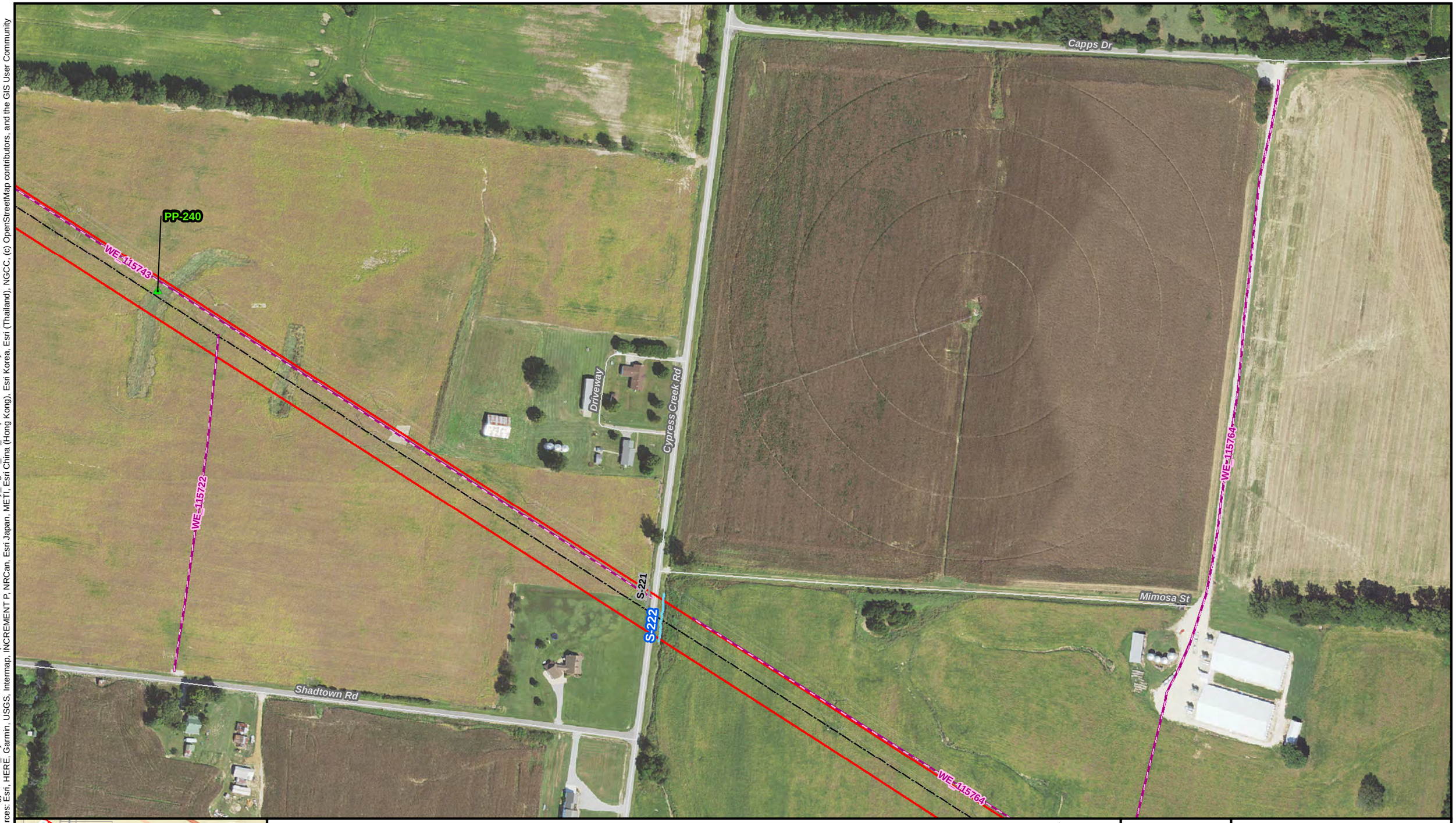
NORTH
0 125 250
Scale in Feet

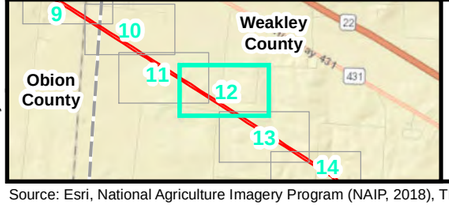
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

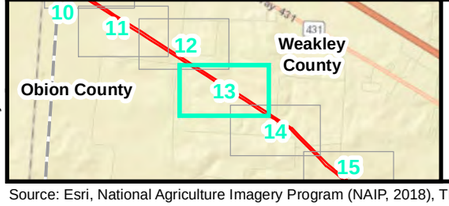
NORTH
0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020



Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

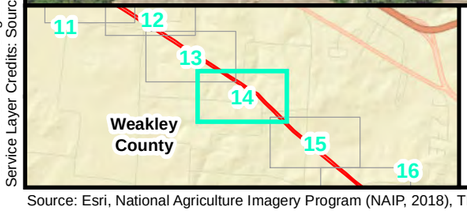
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\GeospatialData Files\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

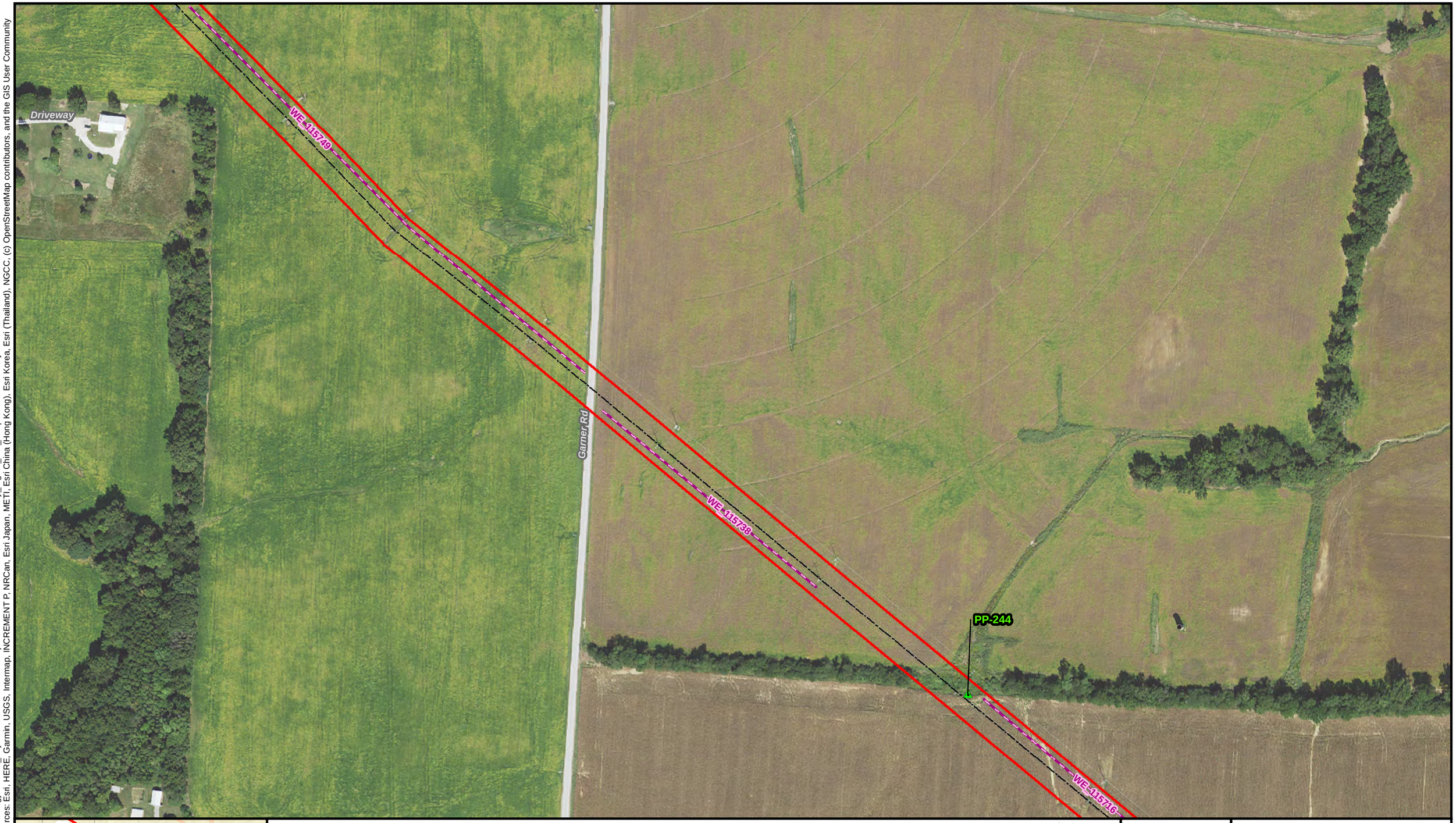
0 125 250
Scale in Feet

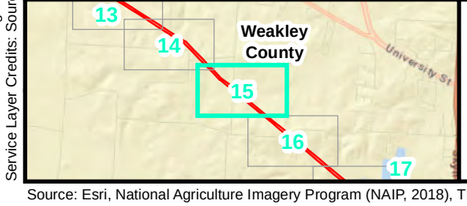
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

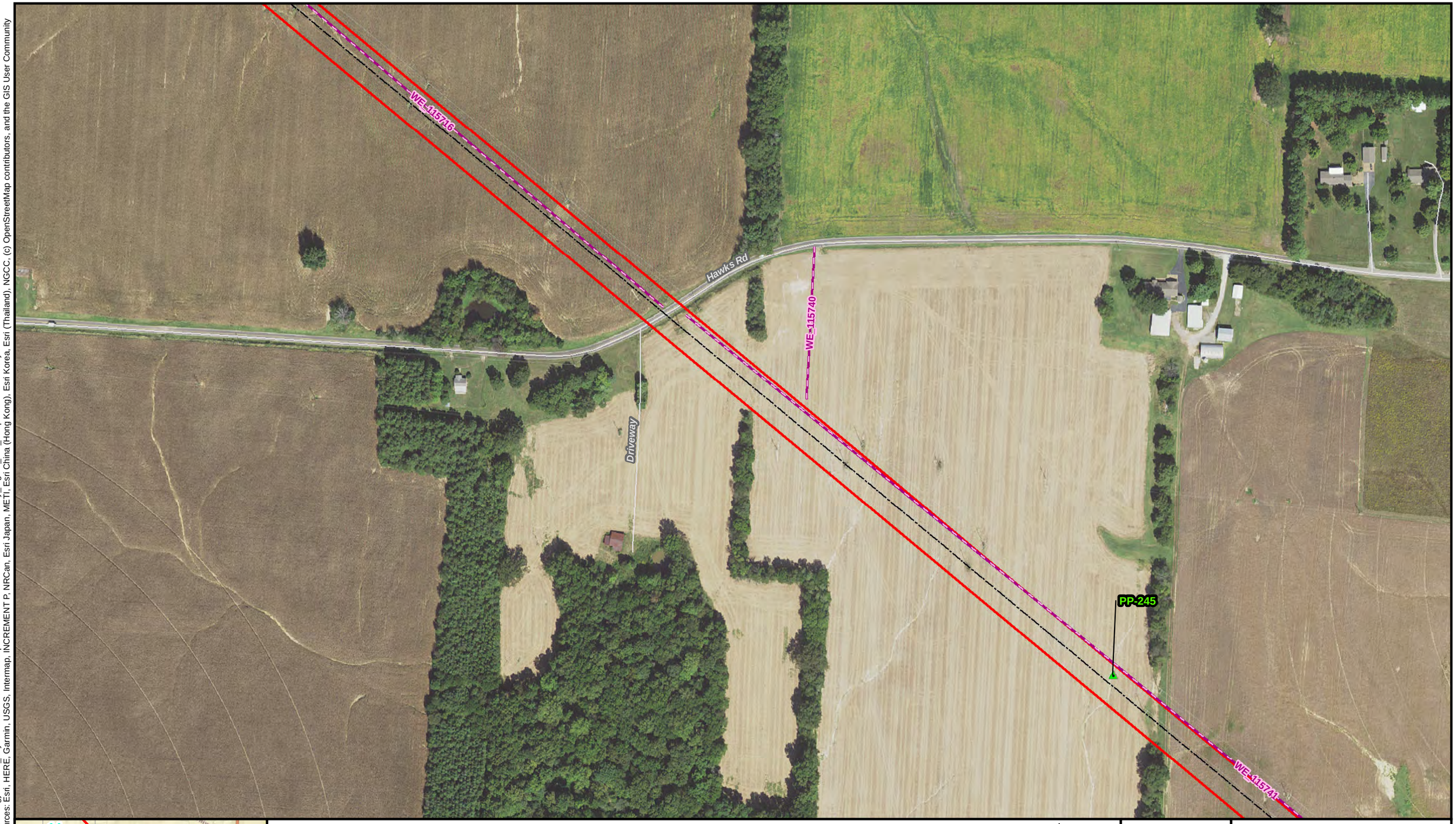
0 125 250
Scale in Feet

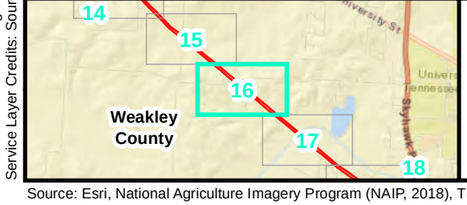
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

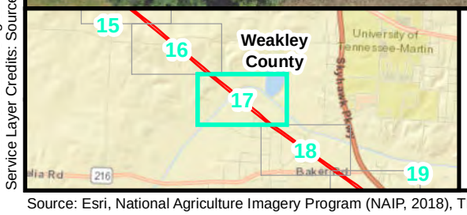
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 16 of 28

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020



Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

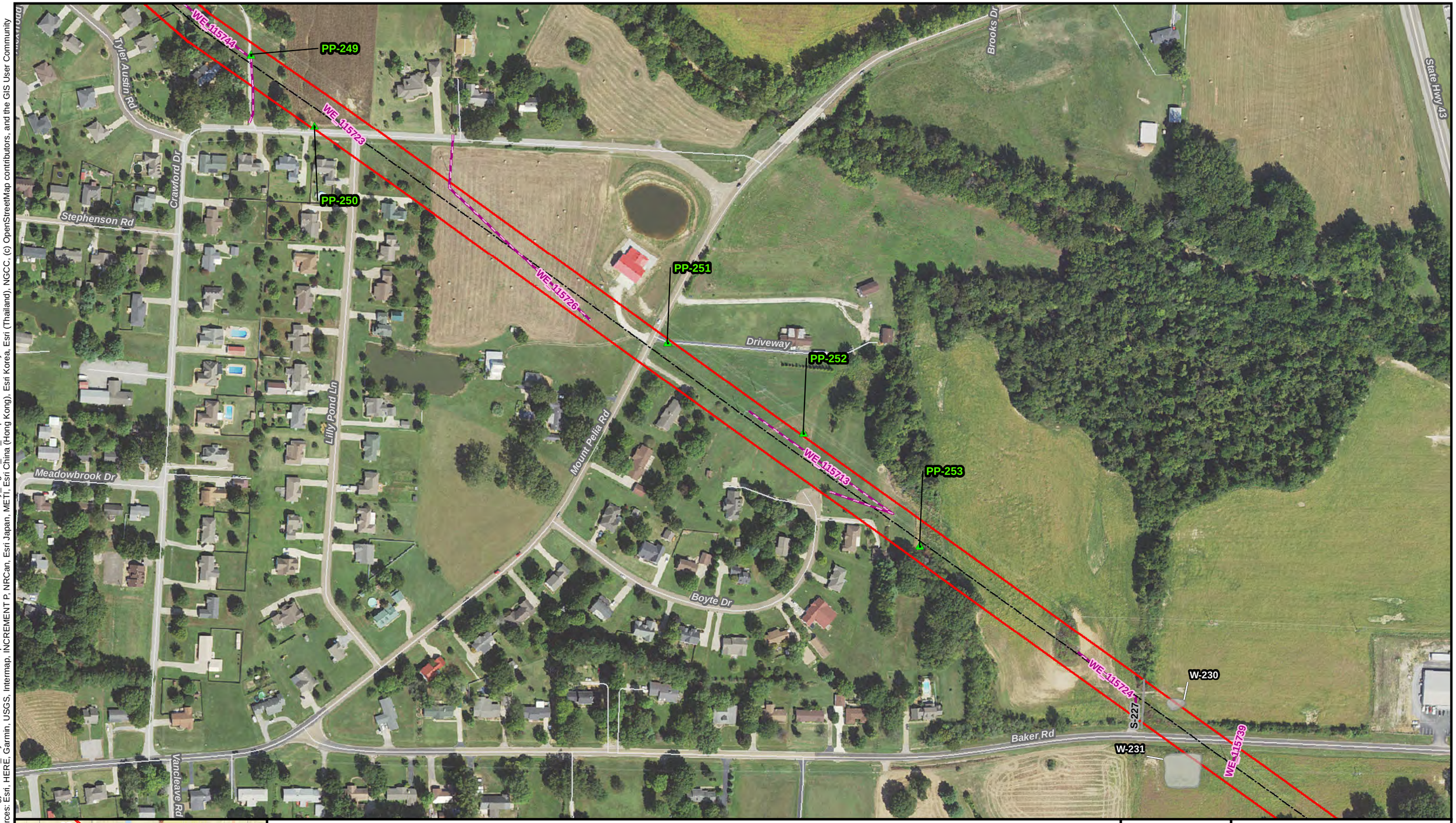
BURNS McDONNELL

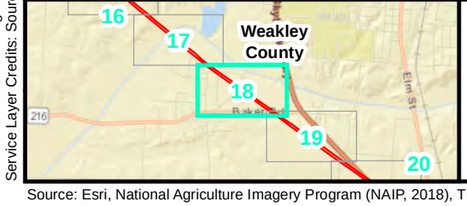
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 17 of 28

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

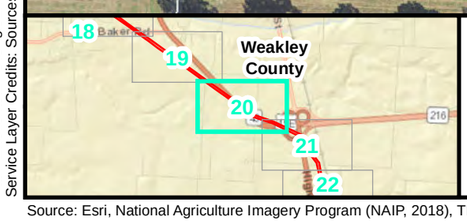
Issued: 7/30/2020

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 19 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\Orig\s\Energy\121610_SkyhawkSolar\Studies\GeospatialData\Files\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

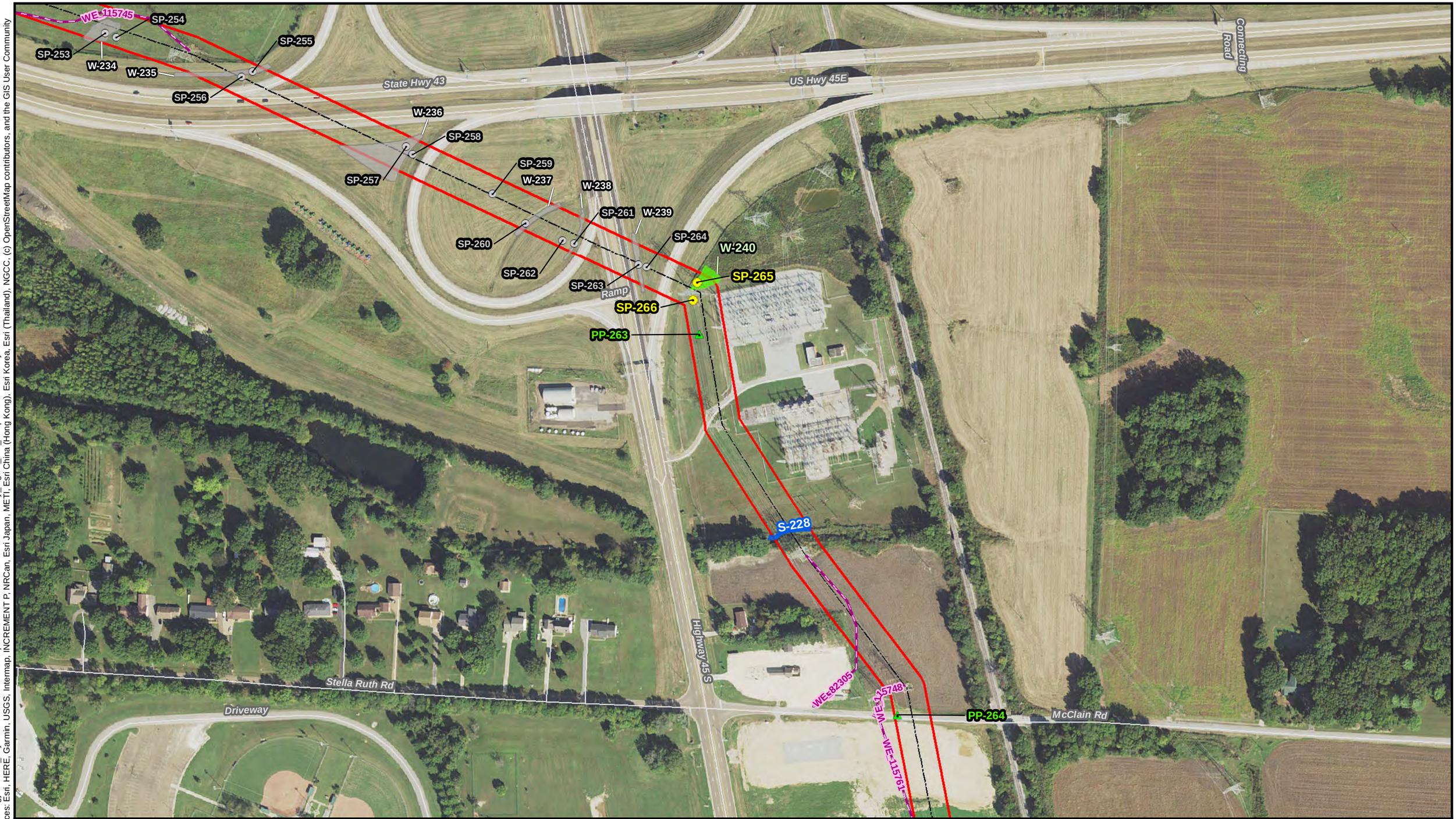
BURNS McDONNELL

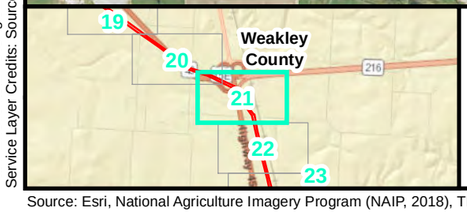
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 20 of 28

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

BURNS McDONNELL

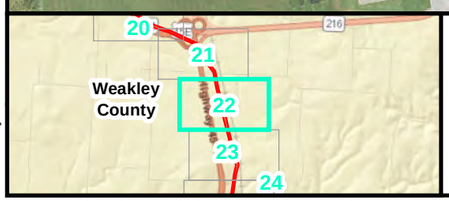
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 21 of 28

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

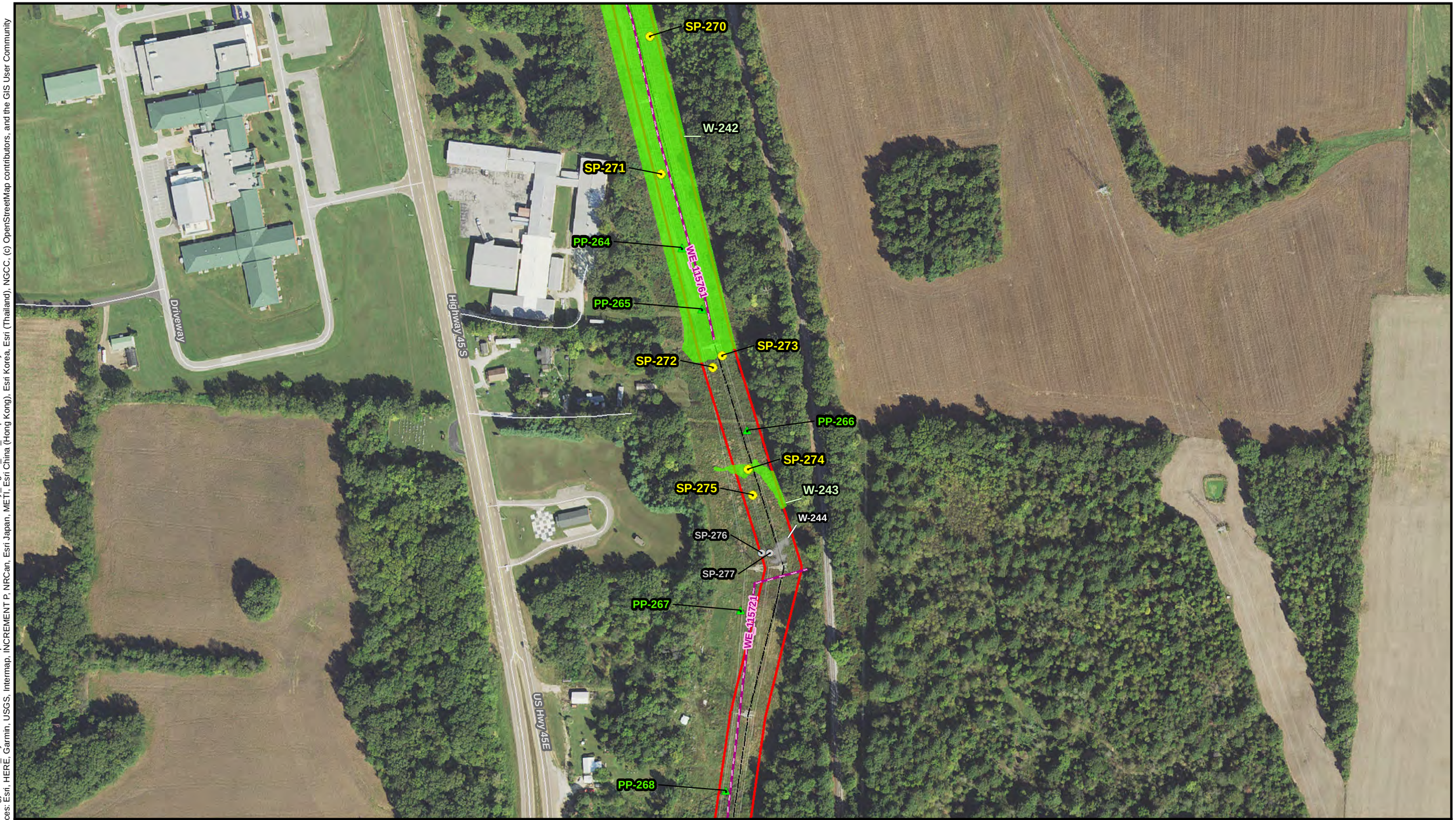
0 125 250
Scale in Feet

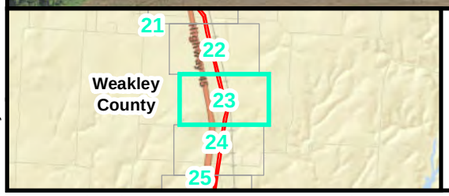
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 22 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

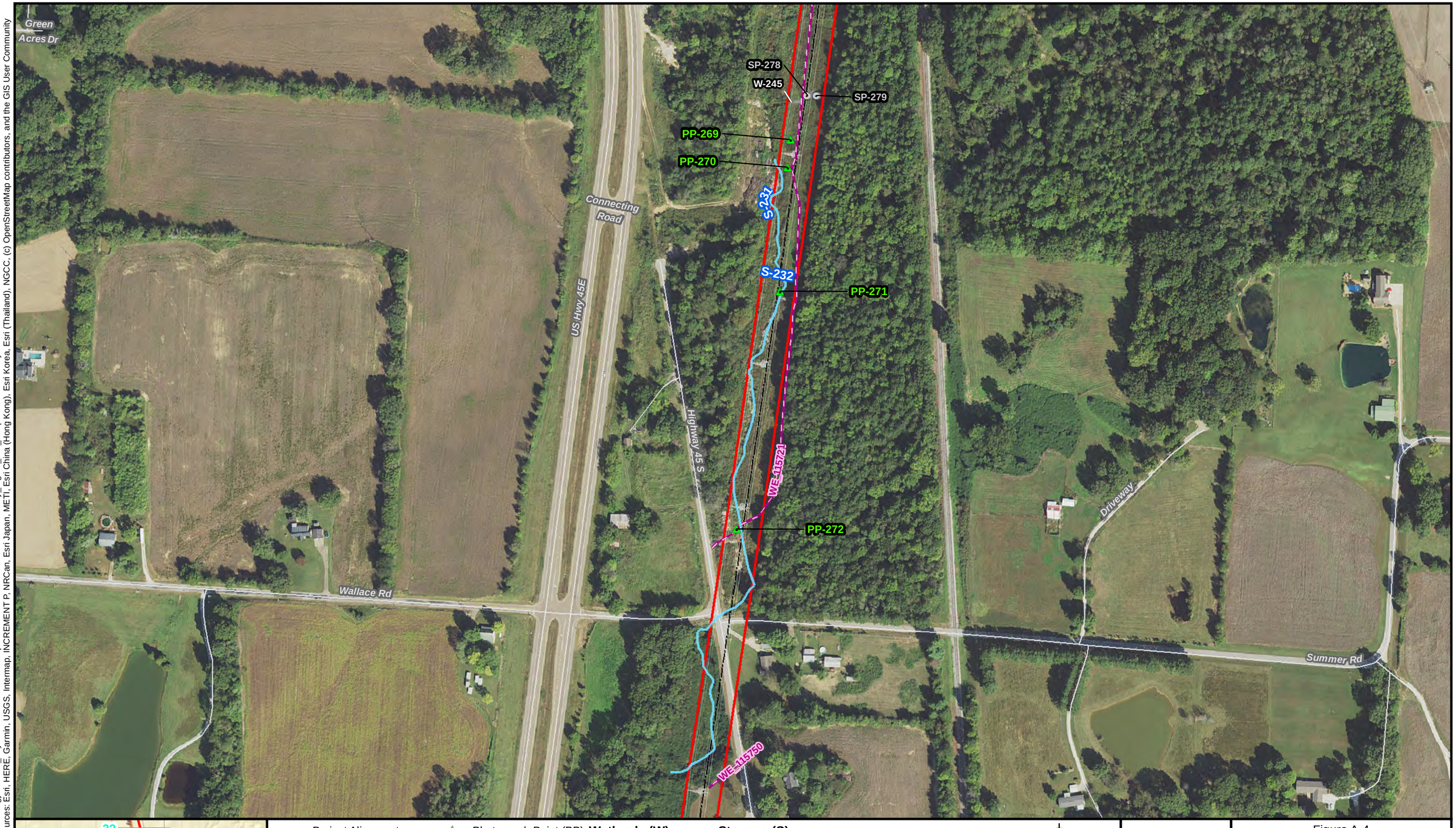
BURNS McDONNELL

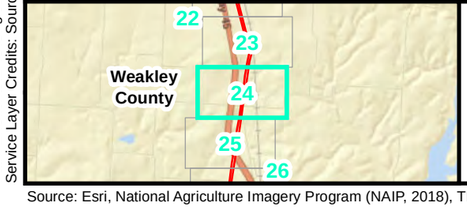
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 23 of 28

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

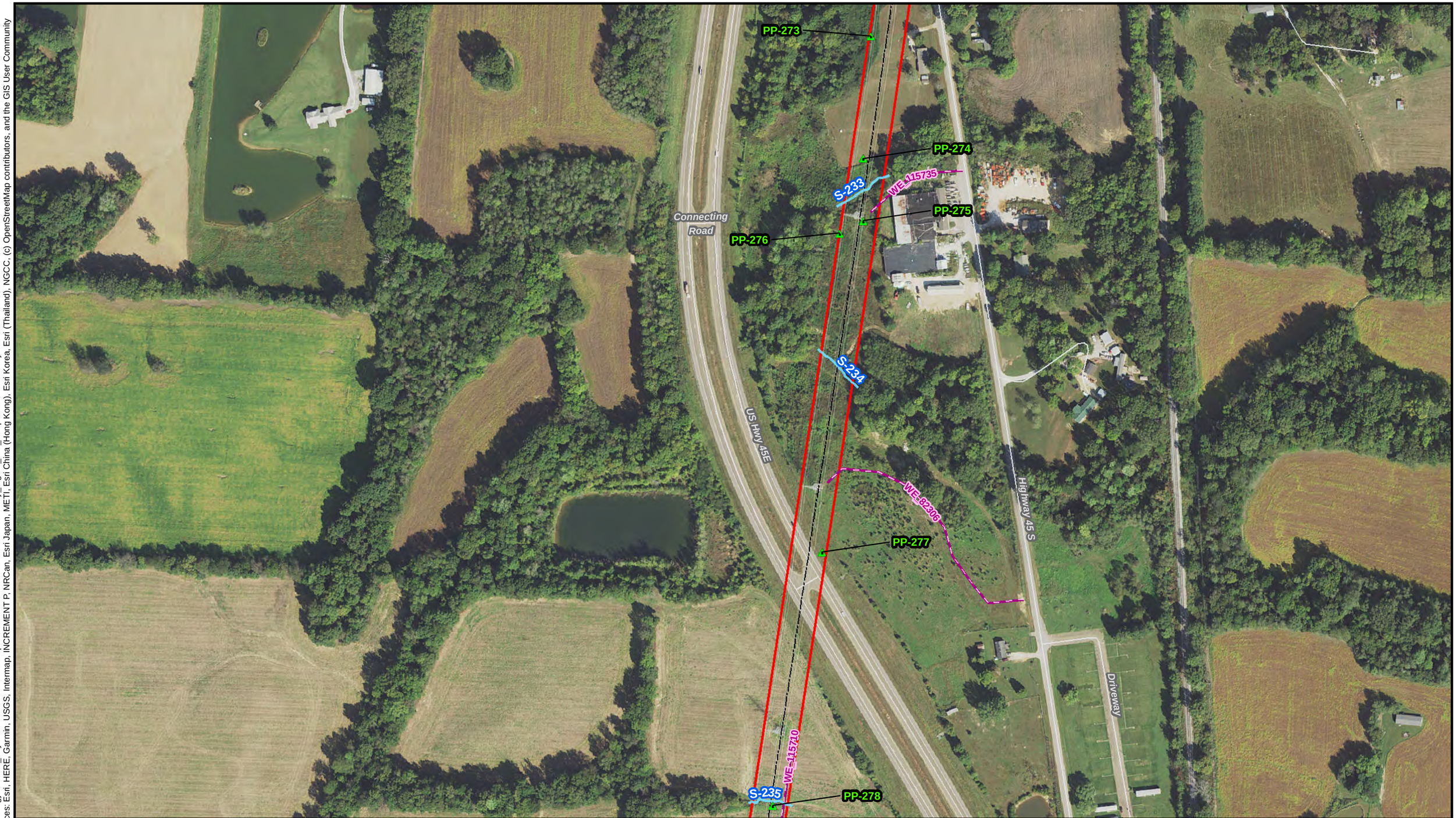
0 125 250
Scale in Feet

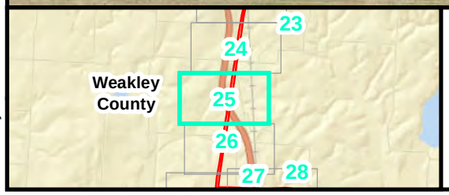
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

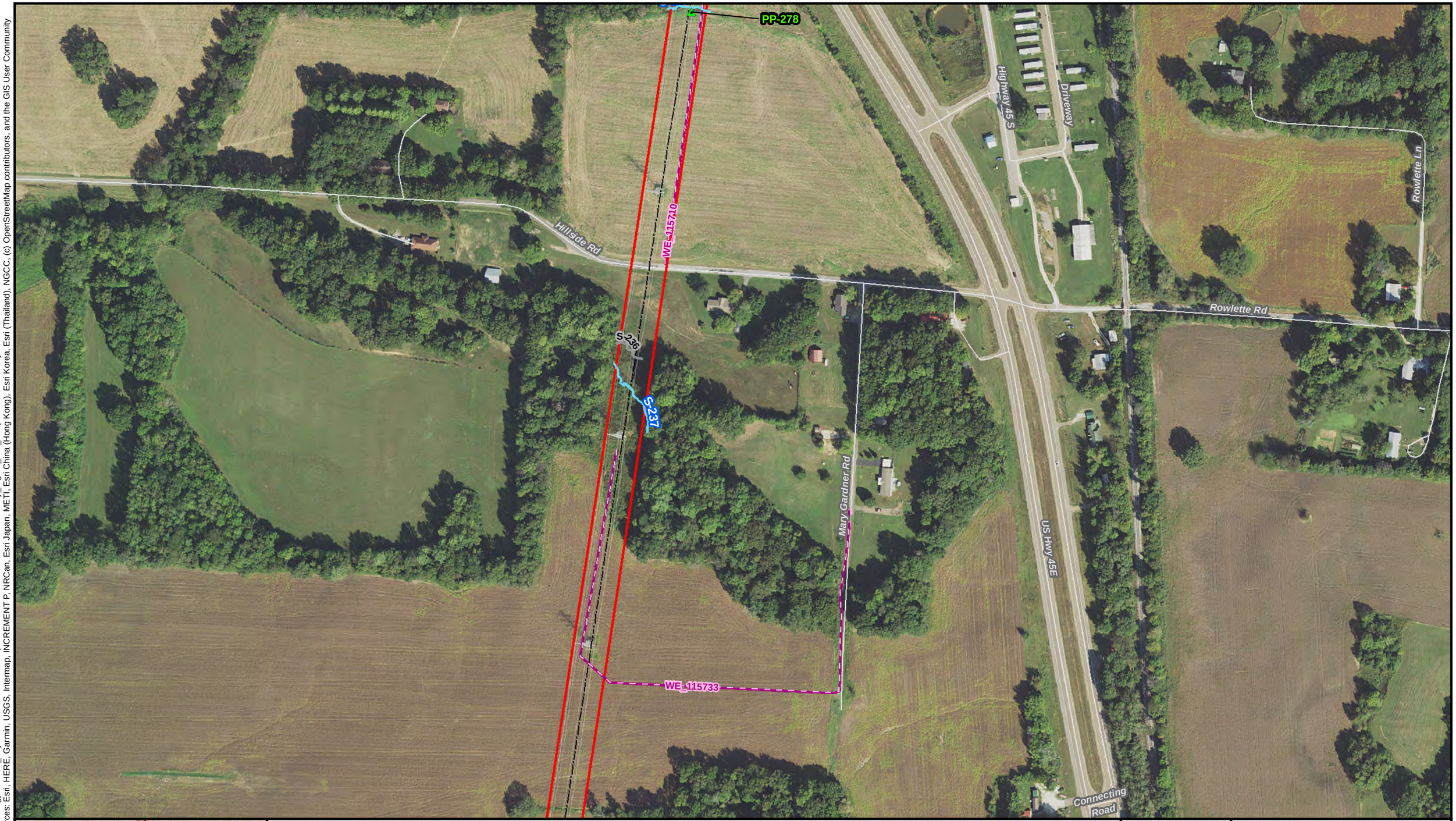
BURNS McDONNELL

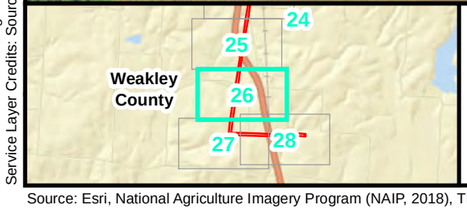
Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 25 of 28

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\Geospatial\DataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0 125 250
Scale in Feet

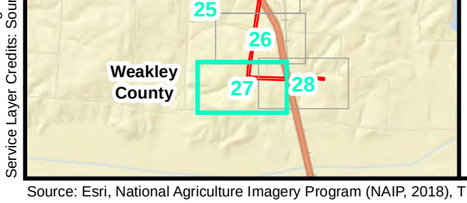
BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 26 of 28

Issued: 7/30/2020

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\Geospatial\DataFiles\ArcDocsWDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary*
- Access Road Centerline
- Photograph Point (PP)
- Sample Plot (SP)
- Non-Jurisdictional SP

Wetlands (W)
- PFO
- PEM
- PUB
- Non-Jurisdictional

Streams (S)
- Perennial
- Intermittent
- Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

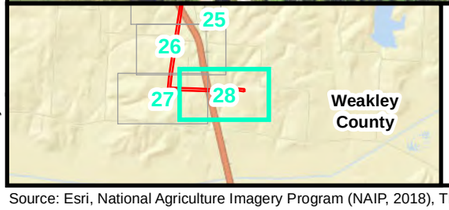
0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020



Project Alignment
Project ROW
County Boundary
Parcel Boundary*
Access Road Centerline

Photograph Point (PP)
Sample Plot (SP)
Non-Jurisdictional SP

Wetlands (W)
PFO
PEM
PUB
Non-Jurisdictional

Streams (S)
Perennial
Intermittent
Non-Jurisdictional

*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH
0 125 250
Scale in Feet

BURNS McDONNELL

Figure A-4
Location Map of Wetlands and Other Water Resources
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolarStudies\GeospatialDataFiles\ArcDocs\WDR\TLine\Sky_Figure_A-4_JDupdate.mxd lnassyia 7/30/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, Burns & McDonnell

Issued: 7/30/2020

APPENDIX B - ROUTINE WETLAND DETERMINATION DATA FORMS, ATLANTIC AND GULF COAST PLAIN REGION

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-201

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.411309 Long: -89.034397 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-201 is in PEM W-201.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 2	
Water Table Present?	Yes ✔	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-201

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	60	✔	FACW
2. Andropogon gerardii	25	✔	FACW
3. Juncus effusus	10		OBL
4. Packera glabella	5		OBL
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	100% = Total Cover		

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

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	60	x 2 =	120
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		210 (B)

Prevalence Index = B/A = 2.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-201

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 - 2	2.5Y 4/2	100					Muck	
2 - 8	2.5Y 4/1	70	10YR 5/6	30	C	M	Clay loam	
8 - 12	2.5Y 4/1	70	10YR 5/6	30	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: compact soil

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 12" prevented by compact soil.

Photograph: View from wetland SP-201, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-202

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.410674 Long: -89.033965 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-202 is an upland sample plot adjacent to PEM W-201.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-202

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Rosa multiflora	20	✔	FACU
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	20% = Total Cover		

50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot size: 30 ft r)			
1. Lonicera japonica	50	✔	FACU
2. Carex vulpinoidea	25	✔	FACW
3. Poa pratensis	20		FACU
4. Rosa multiflora	10		FACU
5. Rumex altissimus	5		FACW
6. Valerianella radiata	5		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	115% = Total Cover		

50% of total cover: 58 20% of total cover: 23

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	135 (A)		475 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-202

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	100					Clay loam	
4 - 10	10YR 4/3	70	10YR 4/4	30	C	M	Clay loam	
10 - 16	10YR 5/3	45	10YR 2/1	10	C	M	Clay loam	mixed matrix with rocks
10 - 16	10YR 5/4	45						
-								
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-202, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-203

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 60

Subregion (LRR or MLRA): P 134 Lat: 36.410277 Long: -89.030421 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-203 is in PEM W-202.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-203

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Phalaris arundinacea	70	✔	OBL
2. Conium maculatum	10		FACW
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	80% = Total Cover		

50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		90 (B)

Prevalence Index = B/A = 1.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-203

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 - 1	10YR 5/4	100					Muck	
2 - 6	10YR 5/4	60	2.5Y 5/1	30	D	M	Loam	
2 - 6			10YR 3/3	10	C	M		
6 - 24	10YR 5/2	80	10YR 5/6	15	C	PL	Loam	
6 - 24			10YR 3/3	5	C	M		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-203, facing southeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-204

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.410261 Long: -89.030646 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-204 is an upland sample plot adjacent to PEM W-202.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-204

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Cerastium fontanum	40	✔	FACW
2. Lamium amplexicaule	40	✔	UPL
3. Poa pratensis	20		FACU
4. Conium maculatum	5		FACW
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		

50% of total cover: 53 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	40	x 5 =	200
Column Totals:	105 (A)		410 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-204

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 - 8	10YR 4/3	100					Clay 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: compact soil

Depth (inches): 8

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 8" prevented by compact soil. Multiple locations were attempted, but refusal at 8" was met consistently.

Photograph: View from upland SP-204, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-205

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.409827 Long: -89.026733 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-205 is in PEM W-203.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

Standing water present within the wetland, but located outside of the sample plot.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-205

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Hordeum pusillum	35	✔	FACU
2. Carex lurida	20	✔	OBL
3. Carex albicans	10		FACW
4. Carex vulpinoidea	10		FACW
5. Packera glabella	10		OBL
6. Phalaris arundinacea	10		OBL
7. Setaria parviflora	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	100% = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	100 (A)		240 (B)

Prevalence Index = B/A = 2.4

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

Remarks: (If observed, list morphological adaptations below).
Prevalence index is met.

SOIL

Sampling Point: SP-205

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	2.5Y 5/2	65	7.5YR 4/6	25	C	PL / M	Silt Loam	
0 - 12			10YR 2/2	10	C	M		
-								
-								
-								
-								
-								

[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: compact soil

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 12" prevented by compact soil.

Photograph: View from wetland SP-205, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-206

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.409766 Long: -89.026998 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-206 is an upland sample plot adjacent to PEM W-203.

The area has been significantly disturbed by the presence of rock fill at the surface.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-206

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Stellaria media	40	✔	FACU
2. Lamium purpureum	20	✔	UPL
3. Setaria parviflora	20	✔	FACW
4. Plantago major	10		FACW
5. Poa pratensis	10		FACU
6. Schedonorus arundinaceus	10		FACW
7. Galium aparine	5		FACU
8. Juncus effusus	2		OBL
9.	0		
10.	0		
11.	0		
12.	0		
	117% = Total Cover		
50% of total cover: 59	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	55	x 4 =	220
UPL species	20	x 5 =	100
Column Totals:	117 (A)		422 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-206

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 - 5	2.5Y 5/2	45	7.5YR 4/6	10	C	M	Silt Loam	Mixed matrix and rock fill present
0 - 5	10YR 5/3	45						
-								
-								
-								
-								
-								

[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: rock fill

Depth (inches): 5

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 5" prevented by rock fill.

Photograph: View from upland SP-206, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-207

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.409832 Long: -89.026211 Datum: NAD 83

Soil Map Unit Name: Center 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:
SP-207 is an upland sample plot adjacent to PEM W-204.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-207

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Valerianella radiata	40	✔	FACW
2. Asclepias syriaca	35	✔	UPL
3. Packera glabella	10		OBL
4. Solidago altissima	10		FACU
5. Lonicera japonica	5		FACU
6. Rumex crispus	5		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	15	x 4 =	60
UPL species	35	x 5 =	175
Column Totals:	105 (A)		380 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-207

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 - 6	10YR 5/3	50	7.5YR 4/6	5	C	M	Silt Loam	Mixed matrix w/ rock fill
0 - 6	10YR 5/2	45						
6 - 24	2.5Y 5/2	65	7.5YR 5/6	25	C	M	Silt Loam	Rock fill
6 - 24			10YR 2/2	10	C	M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-207, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-208

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.409892 Long: -89.025776 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-208 is in PEM W-204.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

Episaturated later from 0-4". Rock layer present at 6".

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

Sampling Point: SP-208

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex stricta	20	✔	OBL
2. Packera glabella	20	✔	OBL
3. Salix nigra	10		OBL
4. Carex lurida	5		OBL
5. Lathyrus latifolius	5		UPL
6. Stellaria media	5		FACU
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	65% = Total Cover		
50% of total cover: 33	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	65 (A)		100 (B)

Prevalence Index = B/A = 1.5

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-208

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 - 6	2.5Y 5/2	70	7.5YR 5/6	20	C	PL / M	Silt Loam	w/ roots and OM
0 - 6			10YR 2/2	10	C	M		
-								
-								
-								
-								
-								

[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: rock

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 6" prevented by rock. Multiple locations were attempted, but refusal at 6" was met consistently.

Photograph: View from wetland SP-208, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-209

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.406927 Long: -89.011238 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-209 is in PEM W-205.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 1	
Water Table Present?	Yes ✔	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-209

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus amomum	5	✔	FACW
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	5% = Total Cover		
50% of total cover: 3	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	45	✔	FACW
2. Carex albicans	25	✔	FACW
3. Hordeum pusillum	20		FACU
4. Schoenoplectus pungens	10		OBL
5. Lamium purpureum	5		UPL
6. Packera glabella	5		OBL
7. Rubus argutus	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	115% = Total Cover		
50% of total cover: 58	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	50	x 2 =	100
FAC species	30	x 3 =	90
FACU species	20	x 4 =	80
UPL species	5	x 5 =	25
Column Totals:	120 (A)		310 (B)

Prevalence Index = B/A = 2.6

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-209

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 - 6	10YR 2/1	98	10YR 5/8	2	C	PL	Mucky Loam/Clay	
6 - 10	10YR 5/1	65	10YR 6/6	25	C	M	Silty clay loam	
6 - 10			10YR 4/6	10	C	M		
10 - 18	7.5YR 5/4	50	10YR 5/2	40	D	M	Sandy loam	
10 - 18			10YR 2/1	10	C	M		
-								
-								

[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: super-saturated soil

Depth (inches): 18

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicators F3 and F6 are met. Excavation below 18" prevented by super-saturated soil.

Photograph: View from wetland SP-209, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-14

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-210

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.407013 Long: -89.011054 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-210 is an upland sample plot adjacent to PEM W-205.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-210

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Setaria pumila	50	✔	FACW
2. Valerianella radiata	30	✔	FACW
3. Lamium purpureum	25		UPL
4. Cerastium fontanum	20		FACW
5. Lonicera japonica	20		FACU
6. Galium aparine	5		FACU
7. Rubus argutus	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	155% = Total Cover		

50% of total cover: 78 20% of total cover: 31

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	25	x 4 =	100
UPL species	25	x 5 =	125
Column Totals:	155 (A)		540 (B)

Prevalence Index = B/A = 3.5

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-210

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 4/4	100					Silt Loam	
4 - 10	10YR 5/4	75	2.5YR 4/8	25	C	M	Silty clay 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: compact soil

Depth (inches): 10

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 10" prevented by compact soil.

Photograph: View from upland SP-210, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-211

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405405 Long: -89.005655 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-211 is in PEM W-206.

The area has been significantly disturbed by the presence of utility line structures.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-211

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Rubus argutus	10	✔	FACW
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	10% = Total Cover		

50% of total cover: 5 20% of total cover: 2

Herb Stratum (Plot size: 30 ft r)			
1. Carex stricta	50	✔	OBL
2. Juncus effusus	20	✔	OBL
3. Carex vulpinoidea	10		FACW
4. Rubus argutus	10		FACW
5. Andropogon gerardii	5		FACW
6. Packera glabella	5		OBL
7. Typha latifolia	5		OBL
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		

50% of total cover: 53 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	10	x 2 =	20
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		175 (B)

Prevalence Index = B/A = 1.5

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

10% cover of Sphagnum sp. was present at the time of sampling.

SOIL

Sampling Point: SP-211

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 3/2	90	10YR 3/6	10	C	M	Silt Loam	
4 - 12	10YR 5/2	65	10YR 4/6	30	C	M	Silt Loam	
4 - 12			10YR 2/2	5	C	M		
-								
-								
-								
-								

[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: compact soil

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 and F6 is met. Excavation below 12" prevented by compact soil.

Photograph: View from wetland SP-211, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-212

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405505 Long: -89.005890 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-212 is an upland sample plot adjacent to PEM W-206.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Indicator C8 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-212

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Ranunculus sardous	75	✔	FACW
2. Elymus virginicus	30	✔	FACW
3. Cerastium fontanum	5		FACW
4. Valerianella radiata	5		FACW
5. Erigeron annuus	2		FACU
6. Juncus effusus	2		OBL
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	119% = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	119 (A)		355 (B)

Prevalence Index = B/A = 3

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-212

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 - 14	10YR 5/3	70	10YR 3/6	25	C	M	Silt Loam	
0 - 14			10YR 2/2	5	C	M		
-								
-								
-								
-								
-								

[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: compact soil

Depth (inches): 14

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 14" prevented by compact soil.

Photograph: View from upland SP-212, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-213

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405468 Long: -89.004939 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-213 is in PEM W-207.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 3
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-213

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Ranunculus sardous	50	✔	FACW
2. Hordeum pusillum	45	✔	FACU
3. Lemna minor	30	✔	OBL
4. Packera glabella	5		OBL
5. Rumex crispus	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	135% = Total Cover		

50% of total cover: 68 20% of total cover: 27

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	135 (A)		380 (B)

Prevalence Index = B/A = 2.8

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-213

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 - 10	10YR 5/2	60	7.5YR 4/6	20	C	M	Clay	
0 - 10			10YR 2/1	15	C	M		
0 - 10			10YR 6/1	5	D	M		
-								
-								
-								
-								

[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: super-saturated

Depth (inches): 10

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 10" prevented by super-saturated soil.

Photograph: View from wetland SP-213, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-214

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 40

Subregion (LRR or MLRA): P 134 Lat: 36.405562 Long: -89.004694 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-214 is an upland sample plot adjacent to PEM W-207.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-214

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Andropogon gerardii	40	✔	FACW
2. Lonicera japonica	20	✔	FACU
3. Valerianella radiata	20	✔	FACW
4. Elymus virginicus	15		FACW
5. Plantago major	10		FACW
6. Cirsium arvense	5		FACU
7. Galium aparine	5		FACU
8. Solidago altissima	5		FACU
9. Stellaria media	5		FACU
10.	0		
11.	0		
12.	0		
	125% = Total Cover		
50% of total cover: 63	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	125 (A)		415 (B)

Prevalence Index = B/A = 3.3

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-214

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 - 6	10YR 3/3	100					Silt Loam	
6 - 24	10YR 3/3	60	10YR 5/1	30	D	M	Silt Loam	
6 - 24			7.5YR 3/4	10	C	M		
-								
-								
-								
-								

[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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-214, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-215

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.406006 Long: -89.003995 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-215 is in PEM W-208.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-215

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Rumex altissimus	40	✔	FACW
2. Carex stricta	15	✔	OBL
3. Elymus virginicus	15	✔	FACW
4. Rumex crispus	5		FACW
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	75% = Total Cover		

50% of total cover: 38 20% of total cover: 15

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
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:	75 (A)		155 (B)

Prevalence Index = B/A = 2.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-215

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	10Y 4/1	75	10YR 4/6	25	C		Mucky Loam/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: super-saturated

Depth (inches): 12

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

Indicators A4 and F2 are met. Excavation below 12" prevented by super-saturated soil.

Photograph: View from wetland SP-215, facing southeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-216

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20

Subregion (LRR or MLRA): P 134 Lat: 36.405899 Long: -89.003993 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-216 is an upland sample plot adjacent to PEM W-208.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-216

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Dactylis glomerata	25	✔	FACU
2. Poa pratensis	20	✔	FACU
3. Carex vulpinoidea	15	✔	FACW
4. Solidago altissima	10		FACU
5. Trifolium repens	10		FACU
6. Viola sororia	10		FACW
7. Carex albicans	5		FACW
8. Juncus dudleyi	5		FACW
9. Rumex altissimus	5		FACW
10. Rumex crispus	5		FACW
11.	0		
12.	0		
	110% = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	20	x 3 =	60
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	110 (A)		370 (B)

Prevalence Index = B/A = 3.4

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-216

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 3/3	45	10YR 5/8	10	C	M	Silty clay loam	mixed matrix
0 - 4	10YR 3/4	45						
4 - 12	10YR 6/2	50	7.5YR 5/6	30	C	M	Silty clay loam	
4 - 12			10YR 6/4	15	C	M		
4 - 12			10YR 2/2	5	C	M		
-								
-								

[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: compact soil

Depth (inches): 12

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 12" prevented by compact soil.

Photograph: View from upland SP-216, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-217

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 25

Subregion (LRR or MLRA): P 134 Lat: 36.405374 Long: -89.000765 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-217 is in PEM W-209.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-217

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Elymus virginicus	50	✔	FACW
2. Carex vulpinoidea	40	✔	FACW
3. Rumex altissimus	10		FACW
4. Rubus argutus	5		FACW
5. Rumex crispus	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	110% = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		280 (B)

Prevalence Index = B/A = 2.5

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 ____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

Photograph C-1.

SOIL

Sampling Point: SP-217

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 3/3	100					Clay loam	
4 - 8	10YR 3/3	45	10YR 5/8	10	C	M	Clay loam	mixed matrix
4 - 8	10YR 6/1	45						mixed matrix
8 - 20	10YR 6/2	60	7.5YR 4/4	35	C	PL / M	Silty clay loam	
8 - 20			10YR 2/1	5	C	M		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-217, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-218

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.405222 Long: -89.000781 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-218 is an upland sample plot adjacent to PEM W-209.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-218

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	60	✔	FACU
2. Plantago lanceolata	25	✔	FACU
3. Poa pratensis	20		FACU
4. Schedonorus arundinaceus	20		FACW
5. Erigeron annuus	10		FACU
6. Valerianella radiata	10		FACW
7. Lonicera japonica	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	150% = Total Cover		
50% of total cover: 75	20% of total cover: 30		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals:	150 (A)		570 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-218

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 - 2	10YR 3/2	100					Silty clay loam	w/ OM
2 - 8	10YR 5/1	80	10YR 5/6	10	C	M	Silty clay loam	
2 - 8			7.5YR 4/6	5	C	M		
2 - 8			10YR 2/2	5	C	M		
8 - 18	10YR 5/6	90	10YR 6/1	10	D	M	Silt Loam	
18 - 24	10YR 6/1	65	10YR 5/6	25	C	M	Silt Loam	
18 - 24			10YR 2/2	10	C	M		

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-218, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-219

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405555 Long: -89.000065 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-219 is in PEM W-210. The wetland continues beyond the ROW.

The area has been significantly disturbed by utility line structures.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-219

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex stricta	65	✔	OBL
2. Rumex altissimus	15		FACW
3. Typha latifolia	10		OBL
4. Eupatorium capillifolium	5		FACU
5. Juncus effusus	5		OBL
6. Packera glabella	5		OBL
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		

50% of total cover: 53 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	105 (A)		135 (B)

Prevalence Index = B/A = 1.3

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-219

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 - 8	10YR 5/1	65	7.5YR 4/4	35	C	M	Silty clay 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: super-saturated

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 8" prevented by super-saturated soil.

Photograph: View from wetland SP-219, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-220

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.405508 Long: -89.000847 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-220 is an upland sample plot adjacent to PEM W-210.

The area has been significantly disturbed by utility line structures.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-220

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Passiflora incarnata	30	✔	UPL
2. Solidago altissima	20	✔	FACU
3. Eupatorium capillifolium	10		FACU
4. Viola sororia	10		FACW
5. Packera glabella	5		OBL
6. Rumex crispus	5		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	80% = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	30	x 4 =	120
UPL species	30	x 5 =	150
Column Totals:	80 (A)		320 (B)

Prevalence Index = B/A = 4

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-220

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 5/4	100					Silt Loam	
4 - 18	10YR 5/4	88	10YR 6/2	10	D	M	Silt Loam	
4 - 18			7.5YR 4/6	2	C	M		
-								
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-220, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-221

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.404767 Long: -89.000505 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-221 is in PEM W-211.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-221

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	70	✔	FACW
2. Juncus dudleyi	10		FACW
3. Rumex altissimus	10		FACW
4. Juncus effusus	5		OBL
5. Rumex crispus	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	100% = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	90	x 2 =	180
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-221

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 - 2	10YR 3/2	90	7.5YR 4/6	10	C	PL	Silt Loam	w/ OM
2 - 8	10YR 6/1	70	7.5YR 4/6	20	C	M	Silt Loam	
2 - 8			10YR 5/8	10	C	PL		
-								
-								
-								
-								

[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: compact soil

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicators F3 and F6 are met. Excavation below 8" prevented by compact soil.

Photograph: View from wetland SP-221, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-222

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.404671 Long: -89.000525 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-222 is an upland sample plot adjacent to PEM W-211.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-222

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	70	✔	FACU
2. Carex vulpinoidea	5		FACW
3. Juncus dudleyi	5		FACW
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	80% = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	80 (A)		300 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-222

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 4/3	100					Silty clay loam	w/ OM
4 - 16	10YR 6/1	45	10YR 2/2	5	C	M	Silt Loam	mixed matrix; rocks present
4 - 16	10YR 4/3	45	10YR 5/3	5	C	M		
-								
-								
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-222, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-223

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 55

Subregion (LRR or MLRA): P 134 Lat: 36.404198 Long: -89.000448 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-223 is an upland sample plot adjacent to PEM W-212.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-223

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Lonicera japonica	45	✔	FACU
2. Valerianella radiata	40	✔	FACW
3. Setaria pumila	20		FACW
4. Carex vulpinoidea	15		FACW
5. Carex stricta	10		OBL
6. Andropogon gerardii	5		FACW
7. Galium aparine	5		FACU
8. Stellaria media	5		FACU
9.	0		
10.	0		
11.	0		
12.	0		
	145% = Total Cover		
50% of total cover: 73	20% of total cover: 29		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	15	x 2 =	30
FAC species	65	x 3 =	195
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	145 (A)		455 (B)

Prevalence Index = B/A = 3.1

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-223

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 - 6	10YR 4/2	100					Silty clay loam	w/ OM
6 - 16	10YR 6/1	40	10YR 4/4	15	C	M	Silty clay loam	mixed matrix
6 - 16	10YR 5/3	40	10YR 2/2	5	C	M		
-								
-								
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-223, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-224

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.404050 Long: -89.000512 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-224 is in PEM W-212.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-224

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Rumex altissimus	60	✔	FACW
2. Lysimachia nummularia	30	✔	FACW
3. Elymus virginicus	15		FACW
4. Carex vulpinoidea	10		FACW
5. Solidago altissima	5		FACU
6. Lemna minor	2		OBL
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	122% = Total Cover		
50% of total cover: 61	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	100	x 2 =	200
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	122 (A)		267 (B)

Prevalence Index = B/A = 2.2

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-224

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	90	10YR 4/6	10	C	M	Silty clay loam	w/ OM
4 - 20	10YR 6/1	60	10YR 4/3	25	C	M	Silty clay loam	
4 - 20			7.5YR 5/8	13	C	PL / M		
4 - 20			10YR 2/2	2	C	M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-224, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-15

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-225

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.403151 Long: -88.999526 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-225 is an upland confirmation sample plot.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-225

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Solidago altissima	50	✔	FACU
2. Carex vulpinoidea	40	✔	FACW
3. Elymus virginicus	10		FACW
4. Viola sororia	10		FACW
5. Acer negundo	5		FACW
6. Rubus argutus	5		FACW
7. Rumex crispus	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		
50% of total cover: 63	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	35	x 3 =	105
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	125 (A)		385 (B)

Prevalence Index = B/A = 3.1

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-225

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 - 8	10YR 4/3	50	10YR 2/1	5	C	M	Silt Loam	mixed matrix
0 - 8	10YR 4/4	45						
8 - 10	10YR 5/3	70	7.5YR 5/6	30	C	PL / M	Silt 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: compact soil

Depth (inches): 10

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 10" prevented by compact soil.

Photograph: View from upland SP-225, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-226

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.401994 Long: -89.997529 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-226 is an upland confirmation sample plot.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-226

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Ambrosia artemisiifolia	40	✔	FACU
2. Carex sp.*	40	✔	FACW
3. Packera glabella	15		OBL
4. Acer negundo	5		FACW
5. Carex vulpinoidea	5		FACW
6. Rosa multiflora	5		FACU
7. Rumex crispus	5		FACW
8. Solidago altissima	5		FACU
9.	0		
10.	0		
11.	0		
12.	0		
	120% = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	120 (A)		375 (B)

Prevalence Index = B/A = 3.1

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-226

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 5/2	40	7.5YR 4/4	15	C	M	Silt Loam	mixed matrix
0 - 12	10YR 5/3	40	10YR 5/8	5	C	PL		
12 - 20	10YR 5/4	70	10YR 6/1	30	D	M	Silt 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): 0

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

Remarks:

No indicators are met.

Photograph: View from upland SP-226, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-227

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.401222 Long: -88.996429 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-227 is in PEM W-213.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-227

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Lemna minor	50	✔	OBL
2. Lysimachia nummularia	15		FACW
3. Carex sp.*	10		FACW
4. Packera glabella	5		OBL
5. Solidago altissima	5		FACU
6. Acer negundo	2		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	87% = Total Cover		
50% of total cover: 44	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	15	x 2 =	30
FAC species	12	x 3 =	36
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	87 (A)		141 (B)

Prevalence Index = B/A = 1.6

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-227

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 - 18	10YR 5/1	80	7.5YR 4/6	20	C	PL / M	Silt 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-227, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-228

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.401179 Long: -88.996416 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-228 is an upland sample plot adjacent to PEM W-213.

Two-tracks from vehicular activity were present at the time of sampling.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-228

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Elymus virginicus	40	✔	FACW
2. Solidago altissima	30	✔	FACU
3. Carex sp.*	25		FACW
4. Rosa multiflora	20		FACU
5. Lathyrus latifolius	5		UPL
6. Ranunculus sardous	5		FACW
7. Setaria faberi	5		UPL
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	130% = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	130 (A)		460 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-228

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 - 6	10YR 5/3	85	10YR 5/8	15	C	M	Silty clay loam	
6 - 14	10YR 6/1	75	10YR 4/6	25	C	PL / M	Silt 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: compact soil

Depth (inches): 14

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 14" prevented by compact soil.

Photograph: View from upland SP-228, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-229

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.399563 Long: -88.994098 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-229 is in PEM W-214.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-229

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Ludwigia palustris	20	✔	OBL
2. Carex sp.*	10	✔	FACW
3. Ambrosia trifida	5		FACW
4. Packera glabella	5		OBL
5. Elymus virginicus	2		FACW
6. Juncus effusus	2		OBL
7. Rumex crispus	2		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	46% = Total Cover		
50% of total cover: 23	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	27	x 1 =	27
FACW species	0	x 2 =	0
FAC species	19	x 3 =	57
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	46 (A)		84 (B)

Prevalence Index = B/A = 1.8

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-229

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 - 16	10YR 4/2	70	10YR 4/4	20	C	PL / M	Silty clay loam	w/ rocks
0 - 16			10YR 2/2	10	C	PL / M		
-								
-								
-								
-								
-								

[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: super-saturated

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by super-saturated soil.

Photograph: View from wetland SP-229, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-230

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.399698 Long: -88.994195 Datum: NAD 83

Soil Map Unit Name: Waverly 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:
SP-230 is an upland sample plot adjacent to PEM W-214.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-230

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Plantago pusilla	45	✔	FACU
2. Poa annua	40	✔	FACU
3. Lamium amplexicaule	5		UPL
4. Ranunculus sardous	5		FACW
5. Stellaria media	5		FACU
6. Juncus effusus	2		OBL
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	102% = Total Cover		
50% of total cover: 51	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	2	x 1 =	2
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	90	x 4 =	360
UPL species	5	x 5 =	25
Column Totals:	102 (A)		402 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-230

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 - 24	10YR 4/4	100					Silty clay 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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-230, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-231

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.398297 Long: -88.983585 Datum: NAD 83

Soil Map Unit Name: Fountain 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:
SP-231 is in PEM W-217.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-231

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Gratiola neglecta	35	✔	OBL
2. Hordeum pusillum	10	✔	FACU
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	45% = Total Cover		

50% of total cover: 23 20% of total cover: 9

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	45 (A)		75 (B)

Prevalence Index = B/A = 1.7

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 _____

Remarks: (If observed, list morphological adaptations below).
Prevalence index is met.

SOIL

Sampling Point: SP-231

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 - 8	10YR 4/2	85	10YR 5/8	15	C	PL / 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: compact soil

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 8" prevented by compact soil.

Photograph: View from wetland SP-231, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-232

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Upland, Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.398289 Long: -88.983522 Datum: NAD 83

Soil Map Unit Name: Fountain 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:
SP-232 is an upland sample plot adjacent to PEM W-217.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-232

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Poa annua	90	✔	FACU
2. Hordeum pusillum	5		FACU
3. Juncus effusus	2		OBL
4. Packera glabella	2		OBL
5. Solidago altissima	2		FACU
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	101% = Total Cover		

50% of total cover: 51 20% of total cover: 20

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	4	x 1 =	4
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	97	x 4 =	388
UPL species	0	x 5 =	0
Column Totals:	101 (A)		392 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-232

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 - 8	10YR 4/2	90	10YR 3/6	10	C	M	Silty clay loam	
8 - 16	10YR 6/1	75	10YR 4/6	15	C	M	Silty clay loam	
8 - 16			10YR 7/4	5	C	M		
8 - 16			10YR 6/8	5	C	PL		
-								
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-232, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-233

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.396780 Long: -88.979428 Datum: NAD 83

Soil Map Unit Name: Center 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:
SP-233 is in PEM W-220.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 6	
Water Table Present?	Yes ✔	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-233

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Ludwigia palustris	20	✔	OBL
2. Juncus effusus	10	✔	OBL
3. Gratiola neglecta	5		OBL
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	35% = Total Cover		

50% of total cover: 18 20% of total cover: 7

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
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:	35 (A)		35 (B)

Prevalence Index = B/A = 1

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-233

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 - 6	10YR 6/1	65	7.5YR 4/6	35	C	PL / M	Silty clay 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: super-saturated

Depth (inches): 6

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 6" prevented by super-saturated soil.

Photograph: View from wetland SP-233, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-234

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.396722 Long: -89.978725 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-234 is an upland sample plot adjacent to PEM W-220.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-234

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa annua	60	✔	FACU
2. Hordeum pusillum	50	✔	FACU
3. Ranunculus sardous	5		FACW
4. Juncus effusus	2		OBL
5. Packera glabella	2		OBL
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	119% = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	4	x 1 =	4
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	119 (A)		459 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-234

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 - 6	10YR 4/3	100					Silty clay loam	
6 - 24	10YR 6/1	40	10YR 5/4	15	C	M	Silty clay loam	mixed matrix
6 - 24	10YR 4/3	40	7.5YR 5/8	5	C	PL / M		
-								
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-234, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-235

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.393485 Long: -88.975333 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-235 is in PEM W-221.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 4
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-235

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Lemna minor	20	✔	OBL
2. Gratiola neglecta	5		OBL
3. Lysimachia nummularia	5		FACW
4. Packera glabella	5		OBL
5. Persicaria amphibia	5		OBL
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	40% = Total Cover		

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	40 (A)		45 (B)

Prevalence Index = B/A = 1.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-235

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 - 8	10YR 6/1	80	7.5YR 4/6	20	C	PL / M	Silty clay	compact
-								
-								
-								
-								
-								
-								

[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: compact soil

Depth (inches): 8

Hydric Soil Present? Yes ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 8" prevented by compact soil. Multiple locations were attempted, but refusal at 8" was met consistently.

Photograph: View from wetland SP-235, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-236

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.393492 Long: -88.975110 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-236 is an upland sample plot adjacent to PEM W-221 and PEM W-222.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Indicator C8 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-236

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa annua	60	✔	FACU
2. Hordeum pusillum	40	✔	FACU
3. Ranunculus sardous	25		FACW
4. Cerastium fontanum	5		FACW
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	130% = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	130 (A)		490 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-236

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 - 16	10YR 5/2	90	10YR 4/4	10	C	M	Silty clay 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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-236, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-237

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.393199 Long: -88.974910 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:

SP-237 is in PEM W-222. There is no upland sample plot associated with this wetland. The boundary was determined by an obvious and significant change in topography as well as a change in wetland hydrology.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 3
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-237

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Ludwigia palustris	3	✔	OBL
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	3% = Total Cover		

50% of total cover: 2 20% of total cover: 1

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
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:	3 (A)		3 (B)

Prevalence Index = B/A = 1

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 _____

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

Rapid test is met. Less than 5% herbaceous vegetation cover was present at the time of sampling within the ROW. The wetland extends to the north beyond the ROW where dominant vegetation includes Typha latifolia (OBL).

SOIL

Sampling Point: SP-237

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 - 8	10YR 5/1	85	10YR 4/6	15	C	PL / M	Silty clay 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: super-saturated

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicators A4 and F3 are met. Excavation below 8" prevented by super saturated soils.

Photograph: View from wetland SP-237, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-238

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.396929 Long: -88.973398 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex NWI classification: PUBHx

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:
SP-238 is an upland confirmation sample plot.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-238

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Hordeum pusillum	60	✔	FACU
2. Poa annua	40	✔	FACU
3. Ranunculus sardous	5		FACW
4. Rumex crispus	5		FACW
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	110% = Total Cover		

50% of total cover: 55 20% of total cover: 22

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	110 (A)		430 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-238

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
-								
-								
-								
-								
-								
-								
-								

[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** ✔

Remarks:

Soil was not taken due to landowner agreement. Hydric soil is not assumed due to the lack of hydrophytic vegetation.

Photograph: View from upland SP-238, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-239

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.393725 Long: -88.969883 Datum: NAD 83

Soil Map Unit Name: Routon-Bonn silt loam complex 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:
SP-239 is in PEM W-224.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-239

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Lemna minor	30	✔	OBL
2. Hordeum pusillum	10	✔	FACU
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	40% = Total Cover		

50% of total cover: 20 20% of total cover: 8

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	40 (A)		70 (B)

Prevalence Index = B/A = 1.8

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 _____

Remarks: (If observed, list morphological adaptations below).
Prevalence index is met.

SOIL

Sampling Point: SP-239

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
-								
-								
-								
-								
-								
-								
-								

[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** _____

Remarks:

Soil sample not taken due to landowner agreement. Hydric soil is assumed due to the prevalence of wetland hydrology indicators and hydrophytic vegetation.

Photograph: View from wetland SP-239, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-16

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-240

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.393367 Long: -88.969945 Datum: NAD 83

Soil Map Unit Name: Center 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:
SP-240 is an upland sample plot adjacent to PEM W-224.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-240

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Hordeum pusillum	60	✔	FACU
2. Poa annua	45	✔	FACU
3. Ranunculus sardous	20		FACW
4. Cerastium fontanum	5		FACW
5. Valerianella radiata	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	135% = Total Cover		

50% of total cover: 68 20% of total cover: 27

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	135 (A)		510 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-240

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
-								
-								
-								
-								
-								
-								
-								

[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** ✔

Remarks:

Soil sample was not taken due to landowner agreement. Hydric soil is not assumed due to the lack of wetland hydrology indicators and hydrophytic vegetation.

Photograph: View from upland SP-240, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-241

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.366229 Long: -88.943332 Datum: NAD 83

Soil Map Unit Name: Waverly, Rosebloom silt loams and frequently flooded soils NWI classification: PSS1/EM1A

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:
SP-241 is in PEM W-225.

The area has been significantly disturbed by tractor tracks and agricultural practices.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ____	Depth (inches): 3	
Water Table Present?	Yes ✔	No ____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

Indicator B13: tadpoles present at the time of sampling.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-241

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Lysimachia nummularia	10	✔	FACW
2. Juncus effusus	5	✔	OBL
3. Ludwigia palustris	5	✔	OBL
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	20% = Total Cover		

50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	20 (A)		30 (B)

Prevalence Index = B/A = 1.5

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-241

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 - 8	10YR 5/2	65	7.5YR 5/8	35	C	PL / M	Silty 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: super-saturated

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 8" prevented by super-saturated soil.

Photograph: View from wetland SP-241, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-242

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.366214 Long: -88.943134 Datum: NAD 83

Soil Map Unit Name: Waverly, Rosebloom silt loams and frequently flooded soils NWI classification: PSS1/EM1A

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:
SP-242 is an upland sample plot adjacent to PEM W-225.

The area has been significantly disturbed by tractor tracks and agricultural practices.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-242

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Ranunculus sardous	60	✔	FACW
2. Poa annua	45	✔	FACU
3. Hordeum pusillum	10		FACU
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	115% = Total Cover		

50% of total cover: 58 20% of total cover: 23

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	115 (A)		400 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-242

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 5/3	100					Silty clay loam	
4 - 16	10YR 5/3	60	7.5YR 4/6	30	C	PL / M	Silty clay loam	
4 - 16			10YR 2/1	10	C	M		
16 - 20	10YR 6/1	55	7.5YR 4/6	35	C	PL / M	Silty clay loam	
16 - 20			10YR 2/1	10	C	M		
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-242, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-243

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.364574 Long: -88.939789 Datum: NAD 83

Soil Map Unit Name: Waverly, Rosebloom silt loams and frequently flooded soils 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:
SP-243 is in PEM W-226.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-243

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex sp.*	30	✔	FACW
2. Ambrosia trifida	20	✔	FACW
3. Juncus effusus	7		OBL
4. Cardamine pensylvanica	5		FACW
5. Hordeum pusillum	5		FACU
6. Rumex crispus	5		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	72% = Total Cover		
50% of total cover: 36	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	x 1 =	7
FACW species	5	x 2 =	10
FAC species	55	x 3 =	165
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	72 (A)		202 (B)

Prevalence Index = B/A = 2.8

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

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

Dominance test is met.

50% cover of sphagnum moss within the sample plot. Sphagnum sp. not counted towards hydrophytic vegetation calculations since it is not a vascular plant.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-243

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 - 6	10YR 5/1	80	10YR 5/6	15	C	M	Silt Loam	
0 - 6			7.5YR 5/8	5	C	PL		
6 - 24	10YR 6/2		10YR 5/6	20	C	M	Silt Loam	
6 - 24			7.5YR 4/4	5	C	M		
6 - 24			10YR 2/2	5	C	PL		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-243, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-244

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.364440 Long: -88.939727 Datum: NAD 83

Soil Map Unit Name: Waverly, Rosebloom silt loams and frequently flooded soils 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:
SP-244 is an upland sample plot adjacent to PEM W-226.

Sample plot was taken within an actively maintained agricultural field. There was evidence of pesticide spray on naturally occurring plants.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-244

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Poa annua	15	✔	FACU
2. Packera glabella	5	✔	OBL
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	20% = Total Cover		

50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
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:	20 (A)		65 (B)

Prevalence Index = B/A = 3.3

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-244

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 - 6	2.5Y 5/1	70	7.5YR 4/4	30	C	M	Silty clay loam	
6 - 20	10YR 5/4	55	10YR 6/1	20	D	M	Silty clay loam	
6 - 20			10YR 4/6	20	C	M		
6 - 20			10YR 2/2	5	C	M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-244, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-245

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.349730 Long: -88.911212 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, eroded 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:
SP-245 is in PFO W-227.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ____	Depth (inches): 4
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-245

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis laevigata	35	✔	FACW
2. Ulmus rubra	25	✔	FACW
3. Salix nigra	10		OBL
4. Acer negundo	5		FACW
5.	0		
6.	0		
7.	0		
8.	0		
	75% = Total Cover		
50% of total cover: 38	20% of total cover: 15		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Acer negundo	15	✔	FACW
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	15% = Total Cover		
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft r)			
1. Salix nigra	5	✔	OBL
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	5% = Total Cover		
50% of total cover: 3	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	15	x 1 =	15
FACW species	35	x 2 =	70
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		220 (B)

Prevalence Index = B/A = 2.3

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-245

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 - 2	10YR 5/2	90	10YR 2/2	8	C	M	Mucky Loam/Clay	
0 - 2			10YR 3/4	2	C	M		
2 - 8	10YR 5/2	60	10YR 5/6	20	C	M	Silt Loam	
2 - 8			7.5YR 4/6	20	C	PL / M		
-								
-								
-								

[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: roots

Depth (inches): 8

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 8" prevented by roots. Multiple locations were attempted, but refusal at 8" was met consistently.

Photograph: View from wetland SP-245, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-246

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.349713 Long: -88.911173 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, eroded 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:
SP-246 is an upland sample plot adjacent to PFO W-227.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-246

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Setaria faberi	60	✔	UPL
2. Lamium amplexicaule	25	✔	UPL
3. Erigeron annuus	5		FACU
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	90% = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	85	x 5 =	425
Column Totals:	90 (A)		445 (B)

Prevalence Index = B/A = 4.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-246

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 - 8	10YR 5/4	95	7.5YR 4/6	5	C	M	Silt Loam	
8 - 16	10YR 5/6	100					Silty clay 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: compact soil

Depth (inches): _____

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

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-246, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-247

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.333589 Long: -88.886147 Datum: NAD 83

Soil Map Unit Name: Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-247 is in PEM W-229.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔ Depth (inches): ____

Water Table Present? Yes ✔ No ____ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-247

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex sp.*	60	✔	FACW
2. Andropogon gerardii	15		FACW
3. Juncus dudleyi	10		FACW
4. Juncus effusus	10		OBL
5. Rubus argutus	10		FACW
6. Liquidambar styraciflua	5		FACW
7. Lonicera japonica	5		FACU
8. Solidago altissima	5		FACU
9.	0		
10.	0		
11.	0		
12.	0		
	120% = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	10	x 2 =	20
FAC species	90	x 3 =	270
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	120 (A)		340 (B)

Prevalence Index = B/A = 2.8

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

15% cover of Sphagnum moss. Sphagnum species were not counted towards hydrophytic vegetation calculation since they are not vascular plants.

SOIL

Sampling Point: SP-247

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 - 10	10YR 5/2	70	10YR 5/6	15	C	M	Silty clay loam	
0 - 10			10YR 6/1	10	D	M		
0 - 10			10YR 2/2	5	C	M		
10 - 24	10YR 6/1	70	5YR 4/6	30	C	PL / M	Silty clay 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-247, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-17

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-248

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.333697 Long: -88.886063 Datum: NAD 83

Soil Map Unit Name: Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-248 is an upland sample plot adjacent to PEM W-229.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Indicator C3 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-248

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	45	✔	FACU
2. Poa annua	35	✔	FACU
3. Cerastium fontanum	15		FACW
4. Solidago altissima	5		FACU
5. Xanthium strumarium	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		

50% of total cover: 53 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	105 (A)		400 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-248

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 - 8	10YR 5/2	80	7.5YR 4/6	20	C	PL / M	Silty clay loam	
8 - 24	10YR 6/1	50	10YR 2/2	20	C	M	Silty clay loam	
8 - 24			5YR 4/6	30	C	PL / M		
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-248, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-249

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.319802 Long: -88.861257 Datum: NAD 83

Soil Map Unit Name: Calloway 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:
SP-249 is in PEM W-232

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-249

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Lysimachia nummularia	85	✔	FACW
2. Carex sp.*	5		FACW
3. Elymus virginicus	5		FACW
4. Hordeum pusillum	5		FACU
5. Ranunculus sardous	5		FACW
6. Rumex crispus	5		FACW
7. Poa pratensis	2		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	112% = Total Cover		
50% of total cover: 56	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	20	x 3 =	60
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	112 (A)		258 (B)

Prevalence Index = B/A = 2.3

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-249

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	98	7.5YR 4/6	2	C	PL	Silt Loam	
4 - 10	10YR 4/2	75	7.5YR 4/4	15	C	M	Silt Loam	
4 - 10			10YR 2/1	10	C	M		
10 - 24	10YR 6/1	70	7.5YR 4/4	30	C	PL / M	Silt 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-249, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-250

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.319780 Long: -88.861219 Datum: NAD 83

Soil Map Unit Name: Calloway 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:
SP-250 is an upland sample plot adjacent to PEM W-232.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-250

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	60	✔	FACU
2. Schedonorus arundinaceus	40	✔	FACW
3. Plantago lanceolata	20		FACU
4. Cerastium fontanum	5		FACW
5. Lamium purpureum	5		UPL
6. Trifolium repens	5		FACU
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	135% = Total Cover		

50% of total cover: 68 20% of total cover: 27

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	85	x 4 =	340
UPL species	5	x 5 =	25
Column Totals:	135 (A)		500 (B)

Prevalence Index = B/A = 3.7

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-250

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 4/4	100					Silt Loam	
4 - 20	10YR 5/3	45	7.5YR 4/6	5	C	M	Silt Loam	mixed matrix
4 - 20	10YR 4/3	50						
-								
-								
-								
-								

[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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-250, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-251

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.317292 Long: -88.856767 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-251 is in PEM W-233. Roadside ditch.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-251

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	60	✔	FACW
2. Carex tribuloides	50	✔	FACW
3. Carex lurida	5		OBL
4. Lonicera japonica	2		FACU
5. Poa pratensis	2		FACU
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	119% = Total Cover		

50% of total cover: 60 20% of total cover: 24

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	60	x 2 =	120
FAC species	50	x 3 =	150
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	119 (A)		291 (B)

Prevalence Index = B/A = 2.4

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-251

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 - 8	10YR 4/2	85	7.5YR 4/6	15	C	PL / M	Silt Loam	w/ sand/rocks in soil
8 - 14	10YR 6/2	60	7.5YR 4/6	30	C	M	Silt Loam	w/ rocks
8 - 14			10YR 2/1	10	C	M		
14 - 24	10YR 6/2	75	7.5YR 4/6	25	C	M	Silty clay loam	w/ rocks
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-251, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-252

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.317693 Long: -88.857266 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-252 is an upland sample plot adjacent to PEM W-233.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-252

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	65	✔	FACU
2. Valerianella radiata	20		FACW
3. Lamium purpureum	15		UPL
4. Vicia sativa	10		FACU
5. Carex albicans	5		FACW
6. Lamium amplexicaule	5		UPL
7. Erigeron annuus	2		FACU
8. Rosa multiflora	2		FACU
9.	0		
10.	0		
11.	0		
12.	0		
	124% = Total Cover		
50% of total cover: 62	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	25	x 3 =	75
FACU species	79	x 4 =	316
UPL species	20	x 5 =	100
Column Totals:	124 (A)		491 (B)

Prevalence Index = B/A = 4

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-252

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 - 8	10YR 3/3	100					Silty clay loam	
8 - 16	10YR 6/1	60	7.5YR 3/4	25	C	M		
8 - 16			10YR 3/3	10	C	M		
8 - 16			10Y 6/8	5	C	M	Silty clay 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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-252, facing southeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-253

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.315572 Long: -88.852751 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-253 is in PEM W-234.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-253

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	30	✔	FACW
2. Andropogon gerardii	5		FACW
3. Rumex crispus	5		FACW
4. Salix nigra	5		OBL
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	45% = Total Cover		

50% of total cover: 23 20% of total cover: 9

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	30	x 2 =	60
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	45 (A)		95 (B)

Prevalence Index = B/A = 2.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-253

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 - 24	10YR 6/1	75	7.5YR 4/6	20	C	PL / M	Silt Loam	
0 - 24			10YR 2/2	5	C	M		
-								
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-253, facing northwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-254

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.315544 Long: -88.852641 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-254 is an upland sample plot adjacent to PEM W-234.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-254

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Digitaria sanguinalis	50	✔	FACU
2. Plantago lanceolata	40	✔	FACU
3. Elymus virginicus	30	✔	FACW
4. Carex vulpinoidea	5		FACW
5. Cerastium fontanum	5		FACW
6. Valerianella radiata	5		FACW
7. Vicia sativa	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	140% = Total Cover		
50% of total cover: 70	20% of total cover: 28		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	40	x 3 =	120
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	140 (A)		510 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-254

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 - 20	10YR 5/3	100					Silt 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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-254, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-255

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.315309 Long: -88.851321 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-255 is in PEM W-235.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 1	
Water Table Present?	Yes ✔	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

Indicator B13: tadpoles present at the time of sampling.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-255

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex lurida	50	✔	OBL
2. Eleocharis compressa	20	✔	FACW
3. Lysimachia nummularia	10		FACW
4. Carex blanda	5		FACW
5. Carex vulpinoidea	5		FACW
6. Ranunculus sardous	2		FACW
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	92% = Total Cover		
50% of total cover: 46	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	35	x 2 =	70
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	92 (A)		141 (B)

Prevalence Index = B/A = 1.5

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-255

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 - 1	2.5Y 4/1	100					Muck	
1 - 8	2.5Y 4/1	95	7.5YR 4/6	5	C	PL	Sandy loam	
8 - 16	2.5Y 4/1	60	7.5YR 4/4	30	C	M	Sandy loam	
8 - 16			7.5YR 5/8	10	C	M		
-								
-								
-								

[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: super-saturated

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by super-saturated soil.

Photograph: View from wetland SP-255, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-256

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 20

Subregion (LRR or MLRA): P 134 Lat: 36.315265 Long: -88.851423 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-256 is an upland sample plot adjacent to PEM W-235.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-256

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Plantago lanceolata	50	✔	FACU
2. Valerianella radiata	20	✔	FACW
3. Ambrosia artemisiifolia	15	✔	FACU
4. Carex albicans	15	✔	FACW
5. Carex blanda	10		FACW
6. Elymus virginicus	10		FACW
7. Schedonorus arundinaceus	10		FACW
8. Carex vulpinoidea	5		FACW
9. Erigeron annuus	5		FACU
10. Lonicera japonica	5		FACU
11. Taraxacum officinale	5		FACU
12. Vicia sativa	5		FACU
	155% = Total Cover		
50% of total cover: 78	20% of total cover: 31		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	65	x 3 =	195
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	155 (A)		545 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-256

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 3/2	100					Silty clay loam	backfill present in soil
4 - 10	10YR 4/3	65	7.5YR 5/4	35	C	PL / M	Silty clay loam	fill present
10 - 20	10YR 4/4	45	10YR 3/2	10	C	M	Silt Loam	mixed matrix
10 - 20	10YR 5/3	45						
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-256, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-257

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.314758 Long: -88.849824 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-257 is in PEM W-236.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-257

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	70	✔	FACW
2. Carex blanda	15		FACW
3. Hordeum jubatum	10		FACW
4. Plantago lanceolata	5		FACU
5. Poa pratensis	5		FACU
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	25	x 3 =	75
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	105 (A)		255 (B)

Prevalence Index = B/A = 2.4

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-257

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 - 6	10YR 4/2	80	7.5YR 5/8	20	C	PL / M	Silt Loam	
6 - 18	10YR 6/1	65	10YR 2/1	20	C	M	Silt Loam	
6 - 18			10YR 5/8	15	C	PL / M		
18 - 24	10YR 6/1	65	5YR 4/6	25	C	PL / M	Silt Loam	
18 - 24			10YR 5/8	10	C	M		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-257, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-258

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 20

Subregion (LRR or MLRA): P 134 Lat: 36.314699 Long: -88.849755 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-258 is an upland sample plot adjacent to PEM W-236.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-258

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Setaria pumila	40	✔	FACW
2. Plantago lanceolata	30	✔	FACU
3. Galium aparine	20		FACU
4. Valerianella radiata	15		FACW
5. Carex blanda	10		FACW
6. Erigeron annuus	5		FACU
7. Stellaria media	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		
50% of total cover: 63	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	125 (A)		435 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-258

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 - 14	10YR 6/1	50	10YR 5/2	25	D	M	Silty clay loam	
0 - 14			10YR 3/6	20	C	M		
0 - 14			10YR 2/1	5	C	M		
14 - 20	10YR 6/1	60	10YR 4/3	25	C	M	Silt Loam	
14 - 20			7.5YR 3/4	15	C	PL / M		
20 - 24	7.5YR 4/6	90	10YR 2/1	10	C	M	Sandy clay	high sand content
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-258, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-259

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.314410 Long: -88.848978 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-259 is an upland confirmation sample plot.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-259

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	45	✔	FACU
2. Lonicera japonica	30	✔	FACU
3. Carex tribuloides	10		FACW
4. Carex vulpinoidea	10		FACW
5. Schedonorus arundinaceus	10		FACW
6. Carex blanda	5		FACW
7. Galium aparine	5		FACU
8. Plantago lanceolata	5		FACU
9. Valerianella radiata	5		FACW
10.	0		
11.	0		
12.	0		
	125% = Total Cover		

50% of total cover: 63 20% of total cover: 25

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	125 (A)		450 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-259

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 5/1	75	7.5YR 4/6	15	C	PL / M	Silt Loam	
0 - 12			10YR 5/8	10	C	M		
12 - 24	10YR 6/1	80	10YR 5/8	15	C	PL / M	Silt	
12 - 24			10YR 2/1	5	C	M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-259, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-260

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.314190 Long: -88.848654 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-260 is in PEM W-237.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-260

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex lurida	80	✔	OBL
2. Carex vulpinoidea	15		FACW
3. Eleocharis compressa	10		FACW
4. Lysimachia nummularia	10		FACW
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	115% = Total Cover		

50% of total cover: 58 20% of total cover: 23

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		150 (B)

Prevalence Index = B/A = 1.3

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-260

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 - 8	10YR 6/1	85	10YR 5/8	15	C	PL / M	Silt Loam	
8 - 16	10YR 6/1	70	5YR 5/8	20	C	PL / M	Silt Loam	
8 - 16			10YR 2/1	10	C	M		
-								
-								
-								
-								

[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: super-saturated

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by super-saturated soil.

Photograph: View from wetland SP-260, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-261

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.314042 Long: -88.848179 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-261 is in PEM W-238.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-261

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	60	✔	FACW
2. Carex blanda	15		FACW
3. Carex lurida	5		OBL
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	80% = Total Cover		

50% of total cover: 40 20% of total cover: 16

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	60	x 2 =	120
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		170 (B)

Prevalence Index = B/A = 2.1

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-261

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 - 18	10YR 5/2	80	10YR 5/8	20	C	PL / M	Silt Loam	w/ OM
18 - 24	10YR 6/1	60	10YR 5/8	35	C	PL / M	Silt Loam	
18 - 24			10YR 2/1	5	C	M		
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-261, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-262

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.314065 Long: -88.848291 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-262 is an upland sample plot adjacent to PEM W-237 and PEM W-238.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicator C3 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-262

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	60	✔	FACU
2. Ambrosia artemisiifolia	25	✔	FACU
3. Valerianella radiata	15		FACW
4. Galium aparine	10		FACU
5. Erigeron annuus	5		FACU
6. Plantago lanceolata	5		FACU
7. Vicia sativa	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		
50% of total cover: 63	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	125 (A)		485 (B)

Prevalence Index = B/A = 3.9

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-262

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 - 10	10YR 4/3	100					Silty clay loam	
10 - 20	10YR 6/2	80	10YR 6/8	20	C	PL / M	Silty clay loam	compact
-								
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-262, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-263

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.313891 Long: -88.847554 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-263 is in PEM W-239.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ____	Depth (inches): 1
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-263

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Eleocharis compressa	50	✔	FACW
2. Lysimachia nummularia	30	✔	FACW
3. Carex sp.*	15		FACW
4. Carex vulpinoidea	10		FACW
5. Hordeum pusillum	5		FACU
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	110% = Total Cover		

50% of total cover: 55 20% of total cover: 22

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	110 (A)		245 (B)

Prevalence Index = B/A = 2.2

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-263

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 - 20	10YR 6/1	65	7.5YR 5/6	35	C	PL / M	Silt 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-263, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-264

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.313874 Long: -88.847476 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-264 is an upland sample plot adjacent to PEM W-239.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-264

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Poa pratensis	50	✔	FACU
2. Valerianella amarella	20	✔	FACU
3. Valerianella radiata	20	✔	FACW
4. Ambrosia artemisiifolia	10		FACU
5. Plantago lanceolata	10		FACU
6. Carex vulpinoidea	5		FACW
7. Cerastium fontanum	5		FACW
8. Erigeron annuus	5		FACU
9. Galium aparine	5		FACU
10. Schedonorus arundinaceus	5		FACW
11.	0		
12.	0		
	135% = Total Cover		
50% of total cover: 68	20% of total cover: 27		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	30	x 3 =	90
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	135 (A)		500 (B)

Prevalence Index = B/A = 3.7

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-264

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 - 8	10YR 3/3	100					Silt Loam	
8 - 16	10YR 6/1	50	10YR 4/4	20	C	M	Silty clay loam	
8 - 16			10YR 4/6	20	C	M		
8 - 16			10YR 5/8	5	C	M		
8 - 16			10YR 2/2	5	C	M		
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-264, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-265

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.313765 Long: -88.846992 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-265 is in PEM W-240.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-265

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex tribuloides	45	✔	FACW
2. Carex vulpinoidea	20	✔	FACW
3. Hordeum pusillum	15		FACU
4. Elymus virginicus	10		FACW
5. Valerianella radiata	10		FACW
6. Carex lurida	5		OBL
7. Juncus dudleyi	5		FACW
8. Rumex crispus	5		FACW
9. Erigeron annuus	2		FACU
10. Solidago altissima	2		FACU
11.	0		
12.	0		
	119% = Total Cover		

50% of total cover: 60 20% of total cover: 24

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	19	x 4 =	76
UPL species	0	x 5 =	0
Column Totals:	119 (A)		341 (B)

Prevalence Index = B/A = 2.9

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-265

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	90	10YR 5/8	10	C	PL / M	Silt Loam	w/ OM
4 - 12	10YR 5/2	65	10YR 5/6	35	C	PL / M	Silt Loam	
12 - 24	10YR 5/1	60	10YR 3/6	20	C	M	Silt Loam	
12 - 24			10YR 2/1	10	C	M		
12 - 24			10YR 5/8	10	C	PL / M		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-265, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-266

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.313629 Long: -88.847027 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-266 is an upland sample plot adjacent to PEM W-240.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-266

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Poa annua	60	✔	FACU
2. Cerastium fontanum	20		FACW
3. Hordeum pusillum	15		FACU
4. Poa pratensis	10		FACU
5. Ranunculus sardous	2		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	107% = Total Cover		

50% of total cover: 54 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	22	x 3 =	66
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	107 (A)		406 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-266

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 4/3	100					Silt Loam	
4 - 24	10YR 6/1	25	7.5YR 5/6	15	C	M	Silt Loam	mixed matrix
4 - 24	10YR 5/2	25	10YR 5/8	10	C	M		
4 - 24			2.5Y 6/4	10	C	M		
4 - 24			10YR 2/2	5	C	M		
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-266, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-267

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.304455 Long: -88.843002 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-267 is in PEM W-241.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

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

Sampling Point: SP-267

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	15	✔	OBL
2. Carex sp.*	5	✔	FACW
3. Elymus virginicus	5	✔	FACW
4. Lysimachia nummularia	5	✔	FACW
5. Rumex crispus	5	✔	FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	35% = Total Cover		

50% of total cover: 18 20% of total cover: 7

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	35 (A)		70 (B)

Prevalence Index = B/A = 2

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-267

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 - 6	10YR 5/1	80	7.5YR 4/6	20	C	PL / M	Silt	
6 - 24	10YR 6/1	90	10YR 6/8	5	C	PL	Silt Loam	
6 - 24			7.5YR 4/6	5	C	M		
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-267, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-268

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.304288 Long: -88.842689 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-268 is in PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-268

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	50	✔	OBL
2. Carex tribuloides	30	✔	FACW
3. Carex vulpinoidea	15		FACW
4. Dichanthelium acuminatum	15		FACW
5. Carex blanda	10		FACW
6. Carex lurida	5		OBL
7. Juncus dudleyi	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	130% = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	20	x 2 =	40
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		260 (B)

Prevalence Index = B/A = 2

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-268

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 - 16	10YR 6/1	65	7.5YR 4/4	25	C	M	Silt	
0 - 16			10YR 5/8	10	C	PL / M		
16 - 24	10YR 6/1	70	10YR 5/4	30	C	M	Silt	
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-268, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-269

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.304357 Long: -88.842961 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-269 is an upland sample plot adjacent to PEM W-241 and PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Indicator C3 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-269

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Rosa multiflora	20	✔	FACU
2. Lonicera japonica	5	✔	FACU
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	25% = Total Cover		

50% of total cover: 13 20% of total cover: 5

Herb Stratum (Plot size: 30 ft r)			
1. Rosa multiflora	40	✔	FACU
2. Carex tribuloides	20	✔	FACW
3. Juncus effusus	20	✔	OBL
4. Bassia scoparia	15		FACU
5. Lonicera japonica	15		FACU
6. Dichanthelium clandestinum	10		FACW
7. Andropogon gerardii	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		

50% of total cover: 63 20% of total cover: 25

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	10	x 2 =	20
FAC species	25	x 3 =	75
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	150 (A)		495 (B)

Prevalence Index = B/A = 3.3

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-269

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 - 20	10YR 5/1	90	7.5YR 5/8	10	C	PL / M	Silt 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-269, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-270

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.303429 Long: -88.842386 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-270 is in PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-270

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Rubus argutus	10	✔	FACW
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	10% = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft r)			
1. Carex tribuloides	40	✔	FACW
2. Eleocharis acicularis	40	✔	OBL
3. Lonicera japonica	30		FACU
4. Carex vulpinoidea	20		FACW
5. Dichanthelium clandestinum	20		FACW
6. Juncus effusus	5		OBL
7. Liquidambar styraciflua	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	160% = Total Cover		
50% of total cover: 80	20% of total cover: 32		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	40	x 2 =	80
FAC species	55	x 3 =	165
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	170 (A)		410 (B)

Prevalence Index = B/A = 2.4

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-270

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 - 24	10YR 6/1	75	7.5YR 5/8	15	C	PL / M	Silt Loam	
0 - 24			7.5YR 4/4	10	C	M		
-								
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-270, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-271

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.302356 Long: -88.842238 Datum: NAD 83

Soil Map Unit Name: Routon 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:
SP-271 is in PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-271

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	45	✔	FACW
2. Carex tribuloides	20	✔	FACW
3. Carex blanda	10		FACW
4. Hordeum jubatum	10		FACW
5. Lonicera japonica	10		FACU
6. Arundo donax	5		FACW
7. Carex lurida	5		OBL
8. Lysimachia nummularia	5		FACW
9. Valerianella radiata	5		FACW
10. Lemna minor	2		OBL
11.	0		
12.	0		
	117% = Total Cover		
50% of total cover: 59	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	x 1 =	7
FACW species	50	x 2 =	100
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	117 (A)		297 (B)

Prevalence Index = B/A = 2.5

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

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

Dominance test is met.

10% cover of sphagnum.

Photograph C-1.

SOIL

Sampling Point: SP-271

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 6/1	75	10YR 5/8	15	C	PL / M	Silt Loam	
0 - 12			10YR 4/6	10	C	M		
12 - 24	10YR 6/1	65	10YR 4/6	25	C	M	Silt Loam	
12 - 24			10YR 2/2	10	C	M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-271, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-272

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.300866 Long: -88.841690 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-272 is an upland sample plot adjacent to PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-272

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Valerianella radiata	45	✔	FACW
2. Valerianella amarella	40	✔	FACU
3. Silphium laciniatum	15		UPL
4. Trifolium repens	15		FACU
5. Lonicera japonica	5		FACU
6. Rosa multiflora	5		FACU
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		
50% of total cover: 63	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	65	x 4 =	260
UPL species	15	x 5 =	75
Column Totals:	125 (A)		470 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-272

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 2	10YR 4/1	100					Silty clay loam	
2 - 20	10YR 4/6	100					Silty clay 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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-272, facing northeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-18

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-273

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.300959 Long: -88.841604 Datum: NAD 83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes, eroded 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:
SP-273 is in PEM W-242.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-273

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Eleocharis tenuis	50	✔	FACW
2. Carex vulpinoidea	30	✔	FACW
3. Carex tribuloides	25		FACW
4. Lonicera japonica	20		FACU
5. Arundo donax	5		FACW
6. Bassia scoparia	5		FACU
7. Cyperus esculentus	5		FACW
8. Dichanthelium clandestinum	5		FACW
9. Rubus argutus	5		FACW
10. Valerianella radiata	5		FACW
11.	0		
12.	0		
	155% = Total Cover		
50% of total cover: 78	20% of total cover: 31		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	45	x 3 =	135
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	155 (A)		405 (B)

Prevalence Index = B/A = 2.6

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-273

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 - 16	10YR 6/1	75	7.5YR 4/6	25	C	PL / M	Silt Loam	
16 - 24	10YR 5/4	85	10YR 6/1	15	D	M	Silty clay 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-273, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-274

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.300008 Long: -88.841321 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-274 is in PEM W-243.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-274

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex tribuloides	60	✔	FACW
2. Setaria pumila	40	✔	FACW
3. Arundo donax	20		FACW
4. Carex lurida	10		OBL
5. Cyperus esculentus	5		FACW
6. Rosa multiflora	5		FACU
7. Solidago altissima	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	145% = Total Cover		
50% of total cover: 73	20% of total cover: 29		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	125	x 3 =	375
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	145 (A)		425 (B)

Prevalence Index = B/A = 2.9

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-274

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 6/1	70	5YR 5/8	30	C	PL / M	Silt Loam	
12 - 24	10YR 5/3		10YR 2/2	15	C	M	Silt Loam	
12 - 24			7.5YR 5/4	10	C	M	Silt Loam	
12 - 24			5YR 5/8	5	C	PL		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-274, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-275

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.299882 Long: -88.841268 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-275 is an upland sample plot adjacent to PEM W-243.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-275

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Valerianella radiata	45	✔	FACW
2. Solidago altissima	35	✔	FACU
3. Toxicodendron radicans	30		FACW
4. Setaria faberi	10		UPL
5. Arundo donax	5		FACW
6. Carex tribuloides	5		FACW
7. Carex blanda	5		FACW
8. Carex vulpinoidea	5		FACW
9. Galium aparine	5		FACU
10. Geranium carolinianum	5		UPL
11. Lonicera japonica	5		FACU
12. Trifolium repens	5		FACU
	160% = Total Cover		
50% of total cover: 80	20% of total cover: 32		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	90	x 3 =	270
FACU species	50	x 4 =	200
UPL species	15	x 5 =	75
Column Totals:	160 (A)		555 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-275

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 - 14	10YR 5/4	100					Silty clay loam	w/ rocks
14 - 24	10YR 5/4	60	10YR 2/2	15	C	M	Silty clay loam	
14 - 24			7.5YR 4/4	15	C	M		
14 - 24			7.5YR 5/6	10	C	M		
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-275, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-276

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.299432 Long: -88.841163 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-276 is an upland sample plot adjacent to PEM W-244.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔ 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:
Indicator C3 is met.

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

Sampling Point: SP-276

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Lonicera japonica	45	✔	FACU
2. Carex tribuloides	35	✔	FACW
3. Andropogon gerardii	10		FACW
4. Rosa multiflora	10		FACU
5. Valerianella radiata	10		FACW
6. Carex vulpinoidea	5		FACW
7. Dichanthelium acuminatum	5		FACW
8. Geranium carolinianum	5		UPL
9. Solidago altissima	5		FACU
10.	0		
11.	0		
12.	0		
	130% = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	60	x 3 =	180
FACU species	60	x 4 =	240
UPL species	5	x 5 =	25
Column Totals:	130 (A)		455 (B)

Prevalence Index = B/A = 3.5

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-276

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 - 8	10YR 6/3	50	7.5YR 6/8	15	C	PL	Silty clay loam	mixed matrix
0 - 8			10YR 6/1	35	D	M		
8 - 20	10YR 6/1	50	10YR 7/3	10	C	M	Silt	mixed matrix
8 - 20	7.5YR 4/6	40						
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-276, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-277

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.299433 Long: -88.841082 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-277 is in PEM W-244.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-277

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex tribuloides	45	✔	FACW
2. Carex vulpinoidea	25	✔	FACW
3. Carex lurida	10		OBL
4. Rosa multiflora	10		FACU
5. Andropogon gerardii	5		FACW
6. Panicum virgatum	5		FACW
7. Solidago altissima	5		FACU
8. Toxicodendron radicans	5		FACW
9. Valerianella radiata	5		FACW
10.	0		
11.	0		
12.	0		
	115% = Total Cover		
50% of total cover: 58	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	115 (A)		315 (B)

Prevalence Index = B/A = 2.7

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-277

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 - 8	10YR 5/2	60	7.5YR 4/6	25	C	PL / M	Silt Loam	
0 - 8			10YR 5/6	15	C	M		
8 - 20	7.5YR 5/6	80	10YR 5/3	20	C	M	Silt	
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-277, facing southeast.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-278

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.296804 Long: -88.841430 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-278 is in PEM W-245.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

Standing water was present outside of the sample plot but within the wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-278

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Carex vulpinoidea	60	✔	FACW
2. Setaria pumila	20	✔	FACW
3. Dichanthelium clandestinum	15		FACW
4. Carex lurida	10		OBL
5. Lonicera japonica	5		FACU
6. Rosa multiflora	5		FACU
7. Toxicodendron radicans	5		FACW
8. Valerianella radiata	5		FACW
9. Solidago altissima	2		FACU
10.	0		
11.	0		
12.	0		
	127% = Total Cover		
50% of total cover: 64	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	75	x 2 =	150
FAC species	30	x 3 =	90
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	127 (A)		298 (B)

Prevalence Index = B/A = 2.3

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 ☐

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-278

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 - 10	10YR 5/1	75	7.5YR 5/8	25	C	PL / M	Silt Loam	
10 - 14	10YR 6/1	80	10YR 4/6	15	C	M	Silt Loam	
10 - 14			10YR 2/1	5	C	PL		
14 - 24	10YR 5/4	85	10YR 6/1	10	D	M	Silt Loam	
14 - 24			10YR 2/1	5	C	M		
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-278, facing southwest.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-19

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-279

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.296806 Long: -88.841340 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-279 is an upland sample plot adjacent to PEM W-245.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-279

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Dichanthelium acuminatum	50	✔	FACW
2. Solidago altissima	20	✔	FACU
3. Cerastium fontanum	10		FACW
4. Elymus virginicus	10		FACW
5. Trifolium repens	10		FACU
6. Valerianella radiata	10		FACW
7. Carex blanda	5		FACW
8. Geranium carolinianum	5		UPL
9. Rosa multiflora	5		FACU
10. Silphium laciniatum	5		UPL
11. Vicia sativa	2		FACU
12.	0		
	132% = Total Cover		

50% of total cover: 66 20% of total cover: 26

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	37	x 4 =	148
UPL species	10	x 5 =	50
Column Totals:	132 (A)		453 (B)

Prevalence Index = B/A = 3.4

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-279

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 - 6	10YR 4/4	100					Silt Loam	
6 - 16	10YR 5/6	100					Silt 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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ____ **No** ✔

Remarks:

No indicators are met. Excavation below 16" prevented by compact soil.

Photograph: View from upland SP-279, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-280

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.277218 Long: -88.841494 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-280 is in PEM W-246.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 3	
Water Table Present?	Yes ✔	No _____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-280

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	40	✔	OBL
2. Carex sp.*	25	✔	FACW
3. Rubus argutus	10		FACW
4. Elymus virginicus	5		FACW
5. Lonicera japonica	5		FACU
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	85% = Total Cover		
50% of total cover: 43	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	85 (A)		180 (B)

Prevalence Index = B/A = 2.1

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

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-280

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 - 3	10YR 5/1	100					Muck	
3 - 10	10YR 5/1	65	7.5YR 4/4	25	C	M	Silt Loam	w/ large sand granules
3 - 10			5YR 4/6	10	C	PL / M		
10 - 20	10YR 6/1	70	7.5YR 4/4	10	C	M	Sandy loam	
10 - 20			10YR 5/4	10	C	M		
-								
-								

[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** _____

Remarks:
Indicators A4 and F3 are met.

Photograph: View from wetland SP-280, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-281

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15

Subregion (LRR or MLRA): P 134 Lat: 36.277104 Long: -88.841341 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-281 is an upland sample plot adjacent to PEM W-246.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-281

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Rubus argutus	40	✔	FACW
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	40% = Total Cover		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 30 ft r)			
1. Geranium carolinianum	30	✔	UPL
2. Lonicera japonica	25	✔	FACU
3. Rubus argutus	20	✔	FACW
4. Verbascum thapsus	20	✔	FACU
5. Carex sp.*	15		FACW
6. Toxicodendron radicans	10		FACW
7. Solidago altissima	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	125% = Total Cover		

50% of total cover: 63 20% of total cover: 25

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	50	x 4 =	200
UPL species	30	x 5 =	150
Column Totals:	165 (A)		605 (B)

Prevalence Index = B/A = 3.7

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-281

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 - 3	10YR 3/4	100					Silt Loam	
3 - 18	10YR 4/6	100					Silty clay 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** ✔

Remarks:
No indicators are met.
Indicator F3 is met.

Photograph: View from upland SP-281, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-282

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 30

Subregion (LRR or MLRA): P 134 Lat: 36.277068 Long: -88.839570 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-282 is an upland sample plot adjacent to PEM W-248 and PUB W-247.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-282

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Valerianella radiata	40	✔	FACW
2. Lamium purpureum	25	✔	UPL
3. Cerastium fontanum	20	✔	FACW
4. Lonicera japonica	20	✔	FACU
5. Solidago altissima	15		FACU
6. Arundo donax	5		FACW
7. Galium aparine	5		FACU
8. Geranium carolinianum	5		UPL
9. Verbascum thapsus	5		FACU
10.	0		
11.	0		
12.	0		
	140% = Total Cover		

50% of total cover: 70 20% of total cover: 28

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	45	x 4 =	180
UPL species	30	x 5 =	150
Column Totals:	140 (A)		525 (B)

Prevalence Index = B/A = 3.8

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-282

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 4/3	100					Silt Loam	
4 - 18	10YR 5/3	50	10YR 5/8	5	C	M	Silt Loam	mixed matrix
4 - 18	10YR 5/2	45						
-								
-								
-								
-								

[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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-282, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-283

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.277190 Long: -88.839555 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-283 is in PEM W-248.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 1
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-283

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	40	✔	OBL
2. Lonicera japonica	15	✔	FACU
3. Dichanthelium acuminatum	10		FACW
4. Ludwigia alternifolia	10		OBL
5. Carex sp.*	5		FACW
6. Elymus virginicus	5		FACW
7. Ulmus rubra	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	90% = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	90 (A)		185 (B)

Prevalence Index = B/A = 2.1

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

Remarks: (If observed, list morphological adaptations below).
Prevalence index is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-283

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 - 6	10YR 5/1	75	10YR 4/6	25	C	M	Silty clay loam	
8 - 24	10YR 5/2	70	10YR 4/6	30	C	M	Silty clay 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-283, facing south.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-284

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.277022 Long: -88.839209 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, eroded 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:
SP-284 is in PEM W-248.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-284

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Carex tribuloides	35	✔	FACW
2. Eleocharis tenuis	25	✔	FACW
3. Dichanthelium acuminatum	15		FACW
4. Andropogon gerardii	5		FACW
5. Arundo donax	5		FACW
6. Carex vulpinoidea	5		FACW
7. Lonicera japonica	5		FACU
8. Setaria pumila	5		FACW
9. Ulmus alata	5		FACU
10.	0		
11.	0		
12.	0		
	105% = Total Cover		

50% of total cover: 53 20% of total cover: 21

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	65	x 3 =	195
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	105 (A)		295 (B)

Prevalence Index = B/A = 2.8

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-284

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 - 8	10YR 5/2	65	10YR 4/6	35	C	M	Silt Loam	
8 - 16	2.5Y 7/1	90	10YR 5/6	10	C	M	Silt	
-								
-								
-								
-								
-								

[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: compact soil

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Indicator F3 is met. Excavation below 16" prevented by compact soil.

Photograph: View from wetland SP-284, facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-285

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.277040 Long: -88.838930 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, eroded 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:
SP-285 is an upland sample plot adjacent to PEM W-248.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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:
Indicators C3 is met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-285

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1. Ulmus alata	20	✔	FACU
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	20% = Total Cover		

50% of total cover: 10 20% of total cover: 4

Herb Stratum (Plot size: 30 ft r)			
1. Lonicera japonica	40	✔	FACU
2. Arundo donax	15	✔	FACW
3. Rumex crispus	10		FACW
4. Rubus argutus	5		FACW
5. Toxicodendron radicans	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	75% = Total Cover		

50% of total cover: 38 20% of total cover: 15

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	95 (A)		345 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-285

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 - 8	10YR 5/2	90	7.5YR 4/6	10	C	PL	Silt Loam	
8 - 20	10YR 5/4	70	7.5YR 4/4	30	C	M	Silt 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** _____

Remarks:
Indicator F3 is met.

Photograph: View from upland SP-285, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-286

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR or MLRA): P 134 Lat: 36.277140 Long: -88.835655 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 15 percent slopes, severely eroded 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:
SP-286 is in PEM W-249.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 _____	Depth (inches): 2
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

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

Sampling Point: SP-286

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Eleocharis tenuis	40	✔	FACW
2. Carex sp.*	30	✔	FACW
3. Dichanthelium acuminatum	20		FACW
4. Carex tribuloides	15		FACW
5. Liquidambar styraciflua	5		FACW
6. Rubus argutus	5		FACW
7. Valerianella radiata	5		FACW
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	120% = Total Cover		

50% of total cover: 60 20% of total cover: 24

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		320 (B)

Prevalence Index = B/A = 2.7

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 _____

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-286

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 - 3	2.5Y 4/2	100					Muck	
3 - 14	10YR 5/2	65	10YR 5/8	35	C	PL / M	Silt	w/ rocks
-								
-								
-								
-								
-								

[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: super-saturated

Depth (inches): _____

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

Remarks:

Indicators A4, A7, and F3 are met. Excavation below 14" prevented by super-saturated soil.

Photograph: View from wetland SP-286, facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Weakley County Sampling Date: 2020-04-20

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-287

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.277160 Long: -88.835600 Datum: NAD 83

Soil Map Unit Name: Loring silt loam, 8 to 12 percent slopes, severely eroded 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:
SP-287 is an upland sample plot adjacent to PEM W-249.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

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

Sampling Point: SP-287

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Lonicera japonica	40	✔	FACU
2. Solidago altissima	30	✔	FACU
3. Geranium carolinianum	20		UPL
4. Rosa multiflora	10		FACU
5. Valerianella radiata	10		FACW
6. Rubus argutus	5		FACW
7. Vicia sativa	5		FACU
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	120% = Total Cover		

50% of total cover: 60 20% of total cover: 24

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	85	x 4 =	340
UPL species	20	x 5 =	100
Column Totals:	120 (A)		485 (B)

Prevalence Index = B/A = 4

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-287

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 - 20	10YR 5/6	100					Silt 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** ✔

Remarks:

No indicators are met.

Photograph: View from upland SP-287, facing west.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-289

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405731 Long: -89.002022 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-289 is in PEM W-252.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

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

Sampling Point: SP-289

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Juncus dudleyi	80	✔	FACW
2. Lysimachia nummularia	20		FACW
3. Carex sp.*	5		FACW
4. Carex vulpinoidea	5		FACW
5. Juncus effusus	5		OBL
6. Ranunculus sardous	5		FACW
7. Rumex crispus	5		FACW
8. Solidago altissima	5		FACU
9.	0		
10.	0		
11.	0		
12.	0		
	130% = Total Cover		

50% of total cover: 65 20% of total cover: 26

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	105	x 2 =	210
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	130 (A)		280 (B)

Prevalence Index = B/A = 2.2

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

*The Carex could not be identified to species. It was assumed to be FAC since most Carex species in the area are FAC or wetter.

SOIL

Sampling Point: SP-289

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 - 10	10YR 5/1	65	7.5YR 4/6	35	C	PL / M	Silty clay loam	
10 - 20	10YR 5/1	60	7.5YR 4/6	40	C	PL / M	Silty clay	very compact
-								
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-289 facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-290

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405626 Long: -89.002135 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-290 is in PEM W-253.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-290

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Ranunculus sardous	75	✔	FACW
2. Juncus dudleyi	40	✔	FACW
3. Rumex crispus	20		FACW
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	135% = Total Cover		
50% of total cover: 68	20% of total cover: 27		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		
50% of total cover:	20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		365 (B)

Prevalence Index = B/A = 2.7

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 ☐

Remarks: (If observed, list morphological adaptations below).
Dominance test is met.

SOIL

Sampling Point: SP-290

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 - 1	2.5Y 5/3	100					Muck	
1 - 20	10YR 5/2	70	7.5YR 5/8	30	C	PL / M	Silt Loam	very compact
-								
-								
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-290 facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-291

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR or MLRA): P 134 Lat: 36.405679 Long: -89.002132 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-291 is an upland sample plot adjacent to PEM W-252 and PEM W-253.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-291

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Ranunculus sardous	40	✔	FACW
2. Solidago altissima	40	✔	FACU
3. Trifolium repens	20		FACU
4. Hordeum pusillum	15		FACU
5. Rumex crispus	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	120% = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	120 (A)		435 (B)

Prevalence Index = B/A = 3.6

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-291

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 - 20	10YR 5/1	50	10YR 4/6	10	C	M	Silt Loam	mixed matrix
0 - 20	10YR 5/3	40						
-								
-								
-								
-								
-								

[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** ✔

Remarks:
No indicators are met.

Photograph: View from upland SP-291 facing north.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-292

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405839 Long: -89.002549 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-292 is in PEM W-254.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ____	Depth (inches): 1	
Water Table Present?	Yes ✔	No ____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-292

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		

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

Herb Stratum (Plot size: 30 ft r)			
1. Eleocharis tenuis	60	✔	FACW
2. Juncus dudleyi	20	✔	FACW
3. Lysimachia nummularia	10		FACW
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	90% = Total Cover		

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= Total Cover		

50% of total cover: _____ 20% of 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
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:	90 (A)		180 (B)

Prevalence Index = B/A = 2

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 _____

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-292

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 - 8	10YR 5/2	80	7.5YR 4/6	20	C	PL / M	Silt Loam	
8 - 20	10YR 5/2	60	7.5YR 4/6	40	C	PL / M	Silt Loam	very compact
-								
-								
-								
-								
-								

[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.

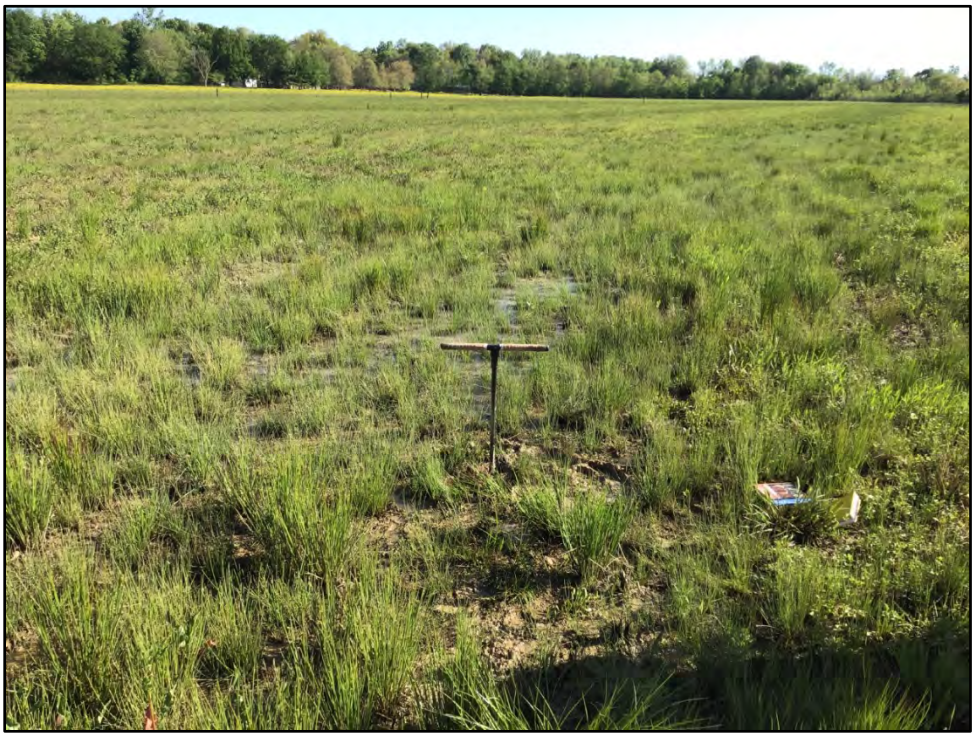
Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:
Indicator F3 is met.



Photograph: View from wetland SP-292 facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-293

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): P 134 Lat: 36.405850 Long: -89.002744 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-293 is an upland sample plot adjacent to PEM W-254 and PEM W-255.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	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 are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-293

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Trifolium repens	50	✔	FACU
2. Ranunculus sardous	20	✔	FACW
3. Solidago altissima	20	✔	FACU
4. Dactylis glomerata	10		FACU
5. Carex vulpinoidea	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	105 (A)		390 (B)

Prevalence Index = B/A = 3.7

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 ✔

Remarks: (If observed, list morphological adaptations below).
No test is met.

SOIL

Sampling Point: SP-293

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 4/3	100					Silty clay loam	
4 - 14	10YR 5/1	50	10YR 5/6	10	C	M	Silt	mixed matrix
4 - 14	10YR 4/3	40						
-								
-								
-								
-								

[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: compact soil

Depth (inches): 14

Hydric Soil Present? **Yes** ☐ **No** ☑

Remarks:

No indicators are met. Excavation below 14" prevented by compact soil.

Photograph: View from upland SP-293 facing east.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Skyhawk Fiber Line City/County: Obion County Sampling Date: 2020-04-21

Applicant/Owner: Origis Energy State: Tennessee Sampling Point: SP-294

Investigator(s): O. Haney, S. Woodland Section, Township, Range: NA

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

Subregion (LRR or MLRA): P 134 Lat: 36.405882 Long: -89.003142 Datum: NAD 83

Soil Map Unit Name: Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration 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:
SP-294 is in PEM W-255.

According to the Palmer Drought Severity Index (PDSI), the area was experiencing very moist conditions at the time of survey.

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 ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Wetland hydrology indicators are met.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-294

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
6.	0		
7.	0		
8.	0		
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft r)			
1. Juncus dudleyi	60	✔	FACW
2. Ludwigia palustris	20		OBL
3. Ranunculus sardous	15		FACW
4. Eleocharis tenuis	5		FACW
5. Rumex crispus	5		FACW
6.	0		
7.	0		
8.	0		
9.	0		
10.	0		
11.	0		
12.	0		
	105% = Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft r)			
1.	0		
2.	0		
3.	0		
4.	0		
5.	0		
	= 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: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	65	x 2 =	130
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		210 (B)

Prevalence Index = B/A = 2

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

Remarks: (If observed, list morphological adaptations below).
Rapid test is met.

SOIL

Sampling Point: SP-294

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 6/1	60	10YR 4/4	25	C	M	Silty clay loam	
0 - 12			10YR 5/8	15	C	PL / M		
12 - 20	10YR 6/1	50	10YR 6/3	30	C	M	Silt Loam	
12 - 20			10YR 4/6	20	C	PL / M		
-								
-								
-								

[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** _____

Remarks:
Indicator F3 is met.

Photograph: View from wetland SP-294 facing east.

APPENDIX C - SITE PHOTOGRAPHS

Photograph C-1: View of palustrine unconsolidated bottom (PUB) Wetland (W)-121, facing west.

Photograph C-2: View of PUB W-215, facing southeast.

Photograph C-3: View of PUB W-216, facing south.

Photograph C-4: View of PUB W-218, facing south.

Photograph C-5: View of PUB W-219, facing north.

Photograph C-6: View of PUB W-228, facing southeast.

Photograph C-7: View of PUB W-230, facing southeast.

Photograph C-8: View of PUB W-231, facing west.

Photograph C-9: View of PUB W-247, facing south.

Photograph C-10: View of perennial Stream (S)-116, facing south.

Photograph C-11: View of ephemeral S-117, facing northwest.

Photograph C-12: View of ephemeral S-131, facing upstream.

Photograph C-13: View of ephemeral S-201, facing north.

Photograph C-14: View of perennial S-202 (Grove Creek), facing north.

Photograph C-15: View of intermittent S-203, facing south.

Photograph C-16: View of intermittent S-204, facing south.

Photograph C-17: View of intermittent S-205, facing north.

Photograph C-18: View of intermittent S-206, facing north.

Photograph C-19: View of intermittent S-207, facing southeast.

Photograph C-20: View of ephemeral S-208, facing south.

Photograph C-21: View of ephemeral S-209, facing east.

Photograph C-22: View of intermittent S-210, facing southwest.

Photograph C-23: View of intermittent S-211, facing east.

Photograph C-24: View of perennial S-212, facing northeast.

Photograph C-25: View of ephemeral S-213, facing south.

Photograph C-26: View of perennial S-214, facing east.

Photograph C-27: View of perennial S-215 (North Fork Obion River), facing northeast.

Photograph C-28: View of perennial S-217, facing northwest.

Photograph C-29: View of ephemeral S-218, facing north.

Photograph C-30: View of perennial S-219, facing east.

Photograph C-31: View of perennial S-220, facing southeast.

Photograph C-32: View of ephemeral S-221, facing south.

Photograph C-33: View of intermittent S-222, facing north.

Photograph C-34: View of intermittent S-223, facing south.

Photograph C-35: View of ephemeral S-224, facing east.

Photograph C-36: View of perennial S-225 (Cane Creek), facing east.

Photograph C-37: View of ephemeral S-226, facing southeast.

Photograph C-38: View of ephemeral S-227, facing south.

Photograph C-39: View of perennial S-228, facing east.

Photograph C-40: View of intermittent S-229, facing north.

Photograph C-41: View of ephemeral S-230, facing west.

Photograph C-42: View of intermittent S-231, facing north.

Photograph C-43: View of intermittent S-232, facing west.

Photograph C-44: View of intermittent S-233, facing west.

Photograph C-45: View of intermittent S-234, facing east.

Photograph C-46: View of intermittent S-235, facing east.

Photograph C-47: View of ephemeral S-236, facing southeast.

Photograph C-48: View of intermittent S-237, facing southwest.

Photograph C-49: View of intermittent S-238, facing west.

Photograph C-50: View of intermittent S-231, facing southwest.

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-109	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

3 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

2 (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)
- [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

26 (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.

- [X] 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.

- [X] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [ ] <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.

- [X] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

9 (max 20 pts. / subtotal)

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)
- [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)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

40

Site: W-109	**Rater(s):** O. Haney	**Date:** 8/10/2020

40
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 1 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [0] 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)]
- [ ] Low (1) [BR/CM (2)]
- [X] 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
- [ ] 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

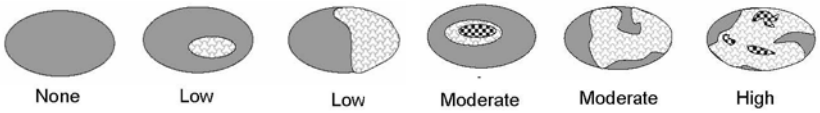
Narrative Description of Vegetation Quality

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

41 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-118	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

2 (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)]
- [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):

Wetland delineation conducted April 2020.

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

19 (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.

- [X] 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)
- [X] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

9 (max 20 pts. / subtotal)

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)
- [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)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

31

Site: W-118	**Rater(s):** O. Haney	**Date:** 8/10/2020

31
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 5 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 _____

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)

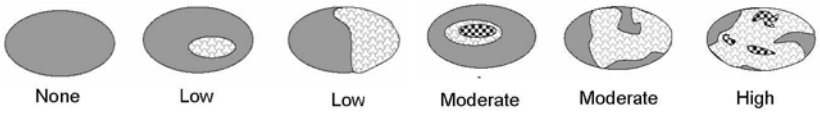
Mudflat and Open Water Class Quality

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
- [ ] 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

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

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-121	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

2 (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)]
- [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):

Wetland delineation conducted April 2020.

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

25 (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)
- [ ] 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.

- [X] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [ ] <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.

- [X] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

9 (max 20 pts. / subtotal)

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)
- [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)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

37

Site: W-121	**Rater(s):** O. Haney	**Date:** 8/10/2020

37
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 1 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [0] 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)

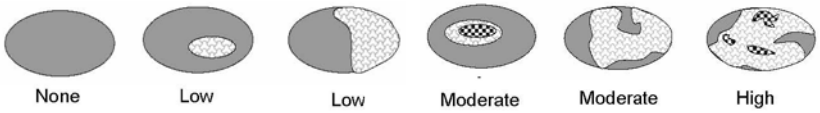
Mudflat and Open Water Class Quality

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

38 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-122	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

1 (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)]
- [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):

Wetland delineation conducted April 2020.

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

16 (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)
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

9 (max 20 pts. / subtotal)

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)
- [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)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

27

Site: W-122	**Rater(s):** O. Haney	**Date:** 8/10/2020

27
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 5 subtotal

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] 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)]
- [X] 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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

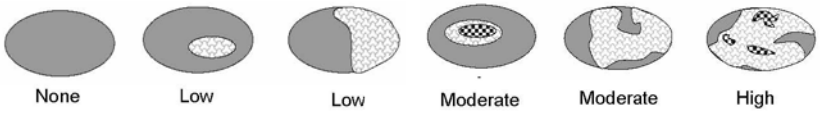
Mudflat and Open Water Class Quality

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

32 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-201	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

2 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

2 (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)
- [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

21 (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)]
- [X] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [X] 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)]
- [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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

13 (max 20 pts. / subtotal)

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

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

38

Site: W-201	**Rater(s):** O. Haney	**Date:** 8/10/2020

38
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 0 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

max 20 pts. 4 subtotal

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)]
- [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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

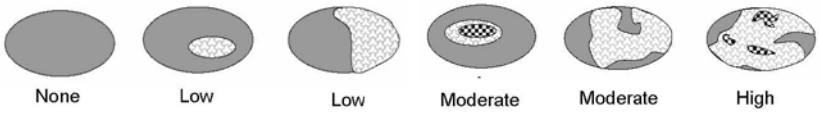
Mudflat and Open Water Class Quality

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

42 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-202	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

1 (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)]
- [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):

Wetland delineation conducted April 2020.

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

21 (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)]
- [X] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [X] 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)]
- [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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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

00

Site: W-202	**Rater(s):** O. Haney	**Date:** 8/10/2020

40
subtotal previous page

max 10 pts. 0 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. 4 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)]
- ☒ 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)
- ☒ X Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

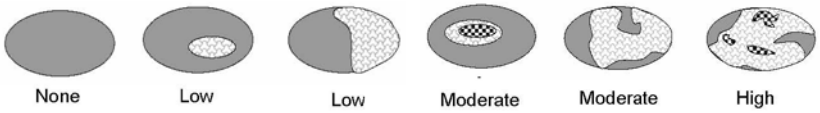
Mudflat and Open Water Class Quality

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

44 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-207	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

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)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [X] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 9

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)
- [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)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [X] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

27

Site: W-207	**Rater(s):** O. Haney	**Date:** 8/10/2020

27
subtotal previous page

max 10 pts. 0 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. 1 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)]
- 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)
- X Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

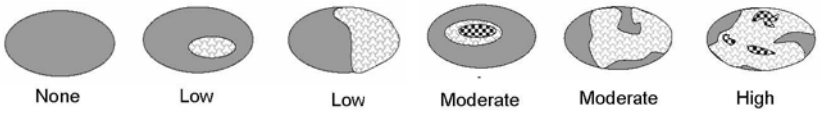
Mudflat and Open Water Class Quality

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

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

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-208	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

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)]
- [X] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [X] 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)
- [X] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [X] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

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
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

31

Site: W-208	**Rater(s):** O. Haney	**Date:** 8/10/2020

31
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 4 subtotal

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)]
- [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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

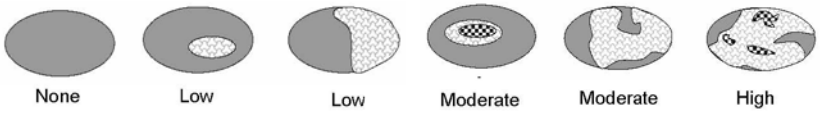
Mudflat and Open Water Class Quality

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

35 **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: W-209	**Rater(s):** O. Haney	**Date:** 8/10/2020

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):

Wetland delineation conducted April 2020.

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: 17

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.

- [x] 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.

- [x] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 9

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)
- [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)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

28

Site: W-209	**Rater(s):** O. Haney	**Date:** 8/10/2020

28
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 2 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 _____

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)
- [X] Sparse 5-25% cover (-1)
- [ ] 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

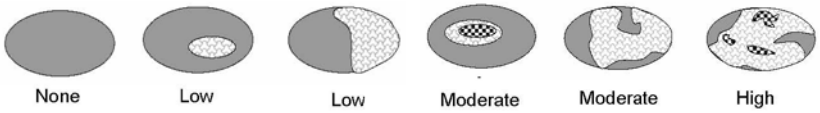
Narrative Description of Vegetation Quality

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

30 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-210	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

1 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

3 (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)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

17 (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.

- [X] 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.

- [X] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile (including culvert)
- [ ] dike
- [ ] weir
- [X] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development

9 (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)
- [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)
- [ ] Recovered (6)
- [X] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

30

Site: W-210	**Rater(s):** O. Haney	**Date:** 8/10/2020

30
subtotal previous page

max 10 pts. 0 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. 2 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)]
- X 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)
- X Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

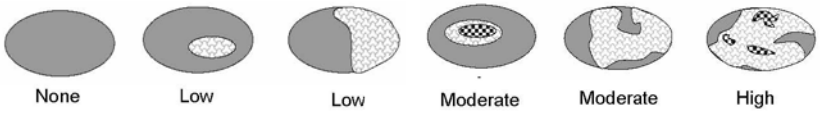
Mudflat and Open Water Class Quality

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

32 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-212	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

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

17 (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.

- [X] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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: W-212	**Rater(s):** O. Haney	**Date:** 8/10/2020

35
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 0 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

max 20 pts. 4 subtotal

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)]
- [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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

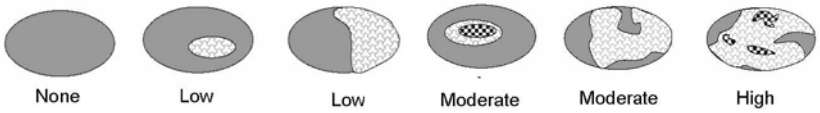
Mudflat and Open Water Class Quality

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

39 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-226	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

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: 17

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)
- [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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

max 20 pts. | subtotal: 9

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)
- [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)
- [ ] Recovered (6)
- [X] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

28

Site: W-226	**Rater(s):** O. Haney	**Date:** 8/10/2020

28
subtotal previous page

max 10 pts. 0 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. 1 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)]
- 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)
- X Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

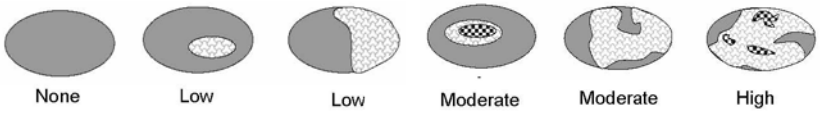
Mudflat and Open Water Class Quality

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

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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-227	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

2 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

4 (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)
- [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)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

20 (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)]
- [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)
- [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)]
- [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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

33

Site: W-227	**Rater(s):** O. Haney	**Date:** 8/10/2020

33
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 4 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 _____

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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

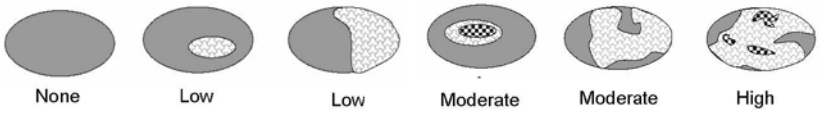
Mudflat and Open Water Class Quality

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

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

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-228	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

1 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

6 (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)
- [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)
- [X] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

26 (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.

- [X] >0.7 m (27.6 in.) (3)
- [ ] 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
- [ ] <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.

- [X] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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
- [X] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

50

Site: W-228	**Rater(s):** O. Haney	**Date:** 8/10/2020

50
subtotal previous page

max 10 pts. | 0 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. | 1 subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [0] 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)

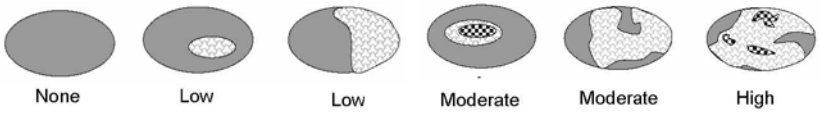
Mudflat and Open Water Class Quality

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

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

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-229	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

6 (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)
- [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)
- [X] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

21 (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)]
- [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)
- [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)
- [X] Regularly inundated/saturated (3) [BR/CM (4)]
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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

44

Site: W-229	**Rater(s):** O. Haney	**Date:** 8/10/2020

44
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 0 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

max 20 pts. 4 subtotal

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)]
- ☒ 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)
- ☒ X Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

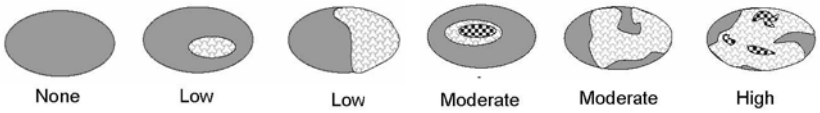
Mudflat and Open Water Class Quality

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

48 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-240	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

2 (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)]
- [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):

Wetland delineation conducted April 2020.

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

16 (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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

9 (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)
- [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)
- [ ] Recovered (6)
- [X] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

28

Site: W-240	**Rater(s):** O. Haney	**Date:** 8/10/2020

28
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 3 subtotal

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)]
- [X] 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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

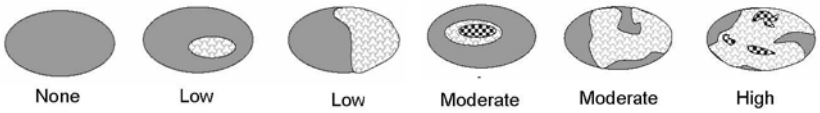
Mudflat and Open Water Class Quality

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

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

TENNESSEE VALLEY AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-241	Rater(s): O. Haney	Date: 8/10/2020

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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

4 (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)
- [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)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

11 (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)
- [X] Recovered (7)
- [ ] Recovering (3)
- [ ] 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
- [ ] other _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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

32

Site: W-241	**Rater(s):** O. Haney	**Date:** 8/10/2020

32
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. 0 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

max 20 pts. 2 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)]
- [X] 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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

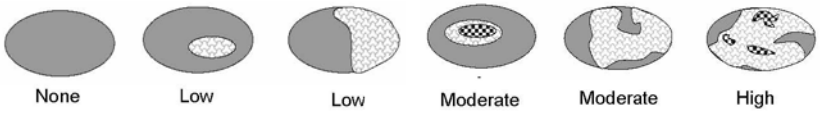
Mudflat and Open Water Class Quality

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

34 **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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-242	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

3 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

6 (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)
- [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)
- [X] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

20 (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)]
- [X] 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)
- [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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

15 (max 20 pts. / subtotal)

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)
- [X] Very good (6)
- [ ] 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

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

44

Site: W-242	**Rater(s):** O. Haney	**Date:** 8/10/2020

44
subtotal previous page

Metric 5. Special Wetlands

	0
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

	5
max 20 pts.	subtotal

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)]
- ☐ 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)
- ☐ Absent (1)

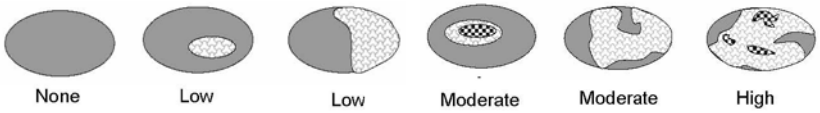
Mudflat and Open Water Class Quality

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

49	**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 AUTHORITY RAPID ASSESSMENT METHOD: Assessing Wetland Condition, Functional Capacity, and Quality
TVARAM FIELD FORM

Site: W-243	Rater(s): O. Haney	Date: 8/10/2020

Metric 1. Wetland Area (size)

1 (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)]
- [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):

Wetland delineation conducted April 2020.

Metric 2. Upland Buffers and Surrounding Land Use

9 (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)
- [X] 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)
- [X] LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
- [ ] High. Urban, industrial, open pasture, row cropping, mining, construction (1)

Metric 3. Hydrology

16 (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)
- [ ] 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.

- [X] None or none apparent (12)
- [ ] 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 _____

Metric 4. Habitat Alteration and Development

17 (max 20 pts. / subtotal)

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)
- [X] Moderately good (4)
- [ ] Fair (3)
- [ ] 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

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] farming
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] woody debris removal
- [ ] sedimentation
- [ ] dredging
- [ ] nutrient enrichment

43

Site: W-243	**Rater(s):** O. Haney	**Date:** 8/10/2020

43
subtotal previous page

Metric 5. Special Wetlands

max 10 pts. | 0 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

max 20 pts. | 3 subtotal

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)]
- [X] 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)
- [X] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

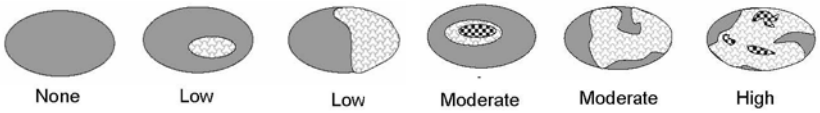
Mudflat and Open Water Class Quality

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

46 **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

APPENDIX E – SKYHAWK THREATENED AND ENDANGERED SPECIES REPORT

Threatened and Endangered Species Report

TN SOLAR 1, LLC

Skyhawk Solar Project
Project No. 121610

May 2020

Threatened and Endangered Species Report

prepared for

TN SOLAR 1, LLC
Skyhawk Solar Project
Obion and Weakley Counties, Tennessee

Project No. 121610

May 2020

prepared by

Burns & McDonnell Engineering Company, Inc.
Atlanta, Georgia

TABLE OF CONTENTS

Page No.

LIST OF TABLES

Page No.

LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
BGEPA	Bald and Golden Eagle Protection Act
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
DGPS	differentially corrected global positioning system
ESA	Endangered Species Act
IPAC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
PEM	palustrine emergent
PFO	palustrine forested
Project	Skyhawk Solar Project
PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
ROW	right-of-way
TDEC	Tennessee Department of Environment and Conservation
TVA	Tennessee Valley Authority
USFWS	U.S. Fish and Wildlife Service

1.0 PROJECT OVERVIEW

1.1 Project Description

TN Solar 1, LLC plans to construct a new 100-megawatt utility scale solar farm and associated infrastructure on certain parcels in Obion County, Tennessee. The Project is bounded by Tennessee State Route (SR-) 22 to the north, the Obion-Weakley county line to the east, Stanley Chapel Church Road and Stone Road to the south, and the North Fork Obion River to the west, approximately 4.1 miles southeast of Union City, Tennessee. The survey was conducted within numerous parcels being considered for the proposed Project (Survey Area) as identified by TN Solar 1, LLC totaling approximately 894 acres. The proposed solar facility will connect to an existing Tennessee Valley Authority (TVA) operated overhead transmission line. Upgrades to the exiting transmission line may be required at points along the line to support the new solar facility. The northern terminus of the transmission line is in Union City, TN, approximately 1.5 miles southeast of city center, and extends southeast for 16.2 miles to Martin, TN, approximately 4.5 miles south of city center (Appendix A)

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was contracted by TN Solar 1, LLC to evaluate the Skyhawk Project Area for the possible presence of or preferred habitat for species protected under the Endangered Species Act (ESA) of 1973.

A survey area was established to cover the proposed Project footprint including the potential solar array facility sites; access roads; and contractor staging areas. Additionally, approximately 16 miles of existing TVA overhead transmission line corridor was surveyed. TVA intends to hang new fiberoptic cable along approximately 16 miles of its existing system in order to accommodate the additional capacity generated from the proposed Project. Due to the additional weight of the new wire, certain existing poles may require upgrading or replacement along the 16-mile-long corridor in Obion and Weakley Counties, Tennessee. The existing easement for the TVA transmission line is approximately 50 feet wide. At the time of the field surveys, TVA had not yet identified which poles would be replaced; therefore, the entire 16 miles of right-of-way (ROW) was surveyed for protected species and habitat that could support protected species. The Survey Area was expanded to include facility sites and contractor staging areas where appropriate. Please refer to the Vicinity and Site Maps located in Appendix A and Appendix B for the location of each Project component and their respective Survey Area.

1.2 Project Area and Setting

The Project is in the Mississippi Valley Loess Plains, Level III Ecoregions (U.S. Environmental Protection Agency, 2013). The sections below provide a description the ecoregion as well as the current vegetation communities within the Survey Area.

1.2.1 Mississippi Valley Loess Plains Ecoregion

The Mississippi Valley Loess Plains spans from the Ohio River in western Kentucky to Louisiana. It predominately consists of irregular plains, some gently rolling hills, and bluffs near the Mississippi River. The distinguishing characteristic of this ecoregion are the thick loess soils. Soils in the bluff hills in the western portion of the ecoregion are deep, steep, silty, and erosive. Topography in the eastern portion of the ecoregion is typically flatter with streams that tend to have less gradient and higher levels of silty substrates than streams in the southeastern plains portion of the ecoregion. Historically, the ecoregion consisted of oak-hickory, oak-hickory-pine, and some mixed mesophytic forests. A large portion of the land cover in the Kentucky and Tennessee part of the ecoregion has been converted to agriculture, while mosaic forest and cropland dominate the Mississippi and Louisiana part of the ecoregion (Natural Resources Conservation Service, *n.d.*).

1.2.2 Project Area Conditions

1.2.2.1 Solar Array Parcels

The Survey Area was largely composed of upland field, fallow agricultural field, and limited woodland. Typical vegetation in the upland portions of the Surveyed Area included henbit deadnettle (*Lamium amplexicaule*), purple deadnettle *(Lamium purpureum*), Kentucky bluegrass (*Poa pratensis*), fowl bluegrass (*Poa palustris*), spreading bent (*Agrostis stolonifera*), common chickweed (*Stellaria media*), Japanese honeysuckle (*Lonicera japonica*), Carolina cranesbill (*Geranium carolinianum*), American pokeweed (*Phytolacca americana*), red maple (*Acer rubrum*), green ash (*Fraxinus pensylvanica*), and sweetgum (*Liquidambar styraciflua*).

A total of 32 wetlands, comprised of 4 wetland types (palustrine emergent [PEM], palustrine forested [PFO], palustrine unconsolidated bottom [PUB], and palustrine aquatic bed [PAB]) and totaling approximately 10.66 acres, were delineated within the proposed solar array parcels (Appendix B).

Dominant vegetation in the PEM wetlands included rough barnyard grass (*Echinochloa muricata*), Quaker bittercress (*Cardamine pensylvanica*), fowl bluegrass (*Poa palustris*), spreading bent (*Agrostis stolonifera*), kidney-leaf buttercup (*Ranunculus abortivus*), fall panic grass (*Panicum dichotomiflorum*), tufted meadow-foxtail (*Alopecurus carolinianus*), wand panic grass (*Panicum virgatum*), golden

groundsel (*Packera aurea*), Eurasian buttercup (*Ficaria verna*), common chickweed, bog chickweed (*Stellaria alsine*). Common vegetation around the PUB and PAB wetlands included crow garlic (*Allium vineale*), eastern daisy fleabane (*Erigeron annuus*), and Kentucky bluegrass, rough cocklebur (*Xanthium strumarium*), rough barnyard grass, and Japanese bristle grass (*Setaria faberi*). Two PFO wetlands, totaling approximately 0.88 acres, were delineated. Vegetation in the PFO wetlands was dominated by willow oak (*Quercus phellos*), green ash, red maple, rough barnyard grass, fall panic grass, lamp rush (*Juncus effusus*), horsebriar (*Smilax rotundifolia*), and muscadine (*Vitis rotundifolia*).

1.2.2.2 Tennessee Valley Authority Transmission Line

The Survey Area was primarily composed of upland fallow field, wooded riparian areas, and maintained utility line ROW. Typical vegetation in the upland portions of the Survey Area included Japanese honeysuckle, annual bluegrass (*Poa annua*), Kentucky bluegrass, Canada goldenrod (*Solidago altissima*), narrowleaf plantain (*Plantago lanceolata*), hairy buttercup (*Ranunculus sardous*), and beaked cornsalad (*Valerianella radiata*).

A total of 54 wetlands, comprised of three wetland types (PEM, PFO, and PUB) totaling 8.72 acres, were delineated within the 16.5-mile existing transmission line easement (Appendix B).

Dominant vegetation in the PEM wetlands generally included fox sedge (*Carex vulpinoidea*), blunt broom sedge (*Carex tribuloides*), upright sedge (*Carex stricta*), shallow sedge (*Carex lurida*), creeping jenny (*Lysimachia nummularia*), slender spikerush (*Eleocharis tenuis*), marsh seedbox (*Ludwigia palustris*), and lamp rush. Common vegetation around the approximately 0.90-acre PUB wetlands included little barley (*Hordeum pusillum*), butterweed (*Packera glabella*), annual bluegrass, hairy buttercup, and Japanese honeysuckle. Dominant vegetation in the PFO wetland included black willow (*Salix nigra*), sugarberry (*Celtis laevigata*), slippery elm (*Ulmus rubra*), and boxelder (*Acer negundo*).

1.3 Consultation History

Prior to conducting field work, Burns & McDonnell biologists reviewed U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) result letters (Appendix C) sent to BMCD on September 9, 2019 and April 29, 2020 in regard to special status species that my occur within the Project area (Consultation Code: 04ET1000-2019-SLI-0908, Event Code: 04ET1000-2019-E-01786; Consultation Code: 04ET1000-2020-SLI-1077, Event Code: 04ET1000-2020-E-01492 and assessed whether the proposed Project had potential to affect ESA species (i.e., ESA listed, proposed and candidate species), bald eagles (*Haliaeetus leucocephalus*), golden eagles (*Aquila chrysaetos*), and migratory birds (including raptor species), and associated habitat within the Project area.). Additionally, Tennessee

Department of Environment and Conservation (TDEC) data was reviewed to determine potential protected species that may occur within Obion and Weakley, Counties.

2.0 METHODS

Prior to field surveys, Burns & McDonnell biologists reviewed the following publicly available information:

- USFWS list of threatened, endangered, and candidate species for the Project area in Obion and Weakley Counties.
- the USFWS designated critical habitat for federally listed species data;
- the data available from the TDEC, which provides county lists of rare and protected species; and
- the USFWS's Range Wide Indiana Bat Survey Guidelines (USFWS, 2019).

This information was thoroughly reviewed to determine which protected species could occur within the Survey Area. In addition to federal and state agency sources, a literature review was conducted on each species for pertinent information regarding species' distinct physical characteristics and coloring, vegetative preferences, diet, motility, home range requirements, reproductive needs, and sensitivity to anthropogenic disturbances.

Upon completion of the baseline data reviews, pedestrian field surveys were conducted in March and April 2020, to evaluate the absence/presence of suitable habitat and potential presence of listed species within the Survey Area. If the presence of potential habitat was determined, the habitat boundary was recorded utilizing sub-meter accurate digitally corrected global positioning system (DGPS). Individual species occurrences, if positively identified, were documented and the location recorded with the DGPS.

Based on the data collected during the field survey, Burns & McDonnell biologists evaluated the potential for each species to occur within the Survey Area into one of the following categories:

- Known to occur—the species has been documented in the Survey Area or was observed during the field survey.
- May occur—the Survey Area is within the species' currently known range, and vegetation communities, soils, etc., resemble those known to be used by the species.
- Unlikely to occur—the Survey Area is within the species' currently known range, but vegetation communities, soils, etc., do not resemble those known to be used by the species, or the Survey Area is clearly outside the species' currently known range.
- Does not occur—the species does not occur in the Survey Area.

Once the species' potential to occur within the Survey Areas was categorized, Burns & McDonnell evaluated the proposed Project's potential effect on the protected species. The effects determination of Burns & McDonnell follows effects determinations as put forth by the USFWS and include:

- May affect, is likely to adversely affect—adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial.
- May affect, is not likely to adversely affect—the proposed action may affect listed species and/or critical habitat; however, the effects are expected to be negligible, insignificant, or completely beneficial.
- No effect—the proposed action will not affect federally listed species or critical habitat.

3.0 RESULTS

3.1 Federally Listed Species

A review of the USFWS threatened and endangered species list identified one threatened, one endangered, and three candidate species that have the potential to occur within the Survey Area (U.S. Fish and Wildlife Service, 2020a; U.S. Fish and Wildlife Service, 2020b). While candidate species receive no statutory protection under the ESA, they are evaluated in this report, as their listing status may be elevated to threatened or endangered and therefore be protected under the ESA.

Refer to Table 3-1 for the list of species, their protection classification, their listing status, a summary of their habitat requirements, their potential for occurrence within the Survey Area, and the effects determination for each species.

Table 3-1: Federally Listed Species Potentially Occurring in the Project area in Obion and Weakley Counties, Tennessee.

Common Name (Scientific Name)	Protection Classification[a]	Status[b]	County	Range and/or Habitat Requirements	Potential to Occur within Survey Area	Effects Determination
Indiana Bat (*Myotis sodalis*)	ESA	E	Obion, Weakley	Hibernation/winter habitat includes cool, humid caves where temperatures are consistently between 50- and 32-degrees Fahrenheit. Roosting and foraging habitat includes wooded areas with dead trees or trees containing exfoliating bark.	Unlikely to Occur	No effect
Northern Long-eared Bat (*Myotis septentrionalis*)	ESA	T	Obion, Weakley	Hibernation/winter habitat includes cool, humid caves. Roosting and foraging habitat includes wooded areas with dead trees or trees containing exfoliating bark. Rarely, NLEB can roost in man-made structures.	Unlikely to Occur	No effect

Source: USFWS 2020a and USFWS 2020b.
(a) Federal Act that provides species protection. ESA = Endangered Species Act, BGEPA = Bald and Golden Eagle Protection Act, MBTA = Migratory Bird Treaty Act
(b) Status as designated by the Endangered Species Act: E – Endangered, T – Threatened

3.1.1 Indiana Bat and Northern Long-eared Bat

These species hibernate during winters in cool, humid caves where temperatures are consistently between 50- and 32-degrees Fahrenheit. After hibernation, Indiana bats and northern long-eared bats typically inhabit wooded areas and roost under exfoliating bark of dead or dying trees.

Indiana bat roosting habitat is defined as forest patches with trees of 5-inch (12.7 cm) dbh or larger. However, early successional habitat with small diameter trees (3 – 5 inch dbh) may be used as foraging habitat by Indiana bats (USFWS, 2019).

Suitable summer habitat for NLEBs consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors (USFWS, 2019). Rarely, northern long-eared bats roost in man-made structures such as barns or sheds. Forested edges provide foraging habitat for these species (U.S. Fish and Wildlife Service 2020a; U.S. Fish and Wildlife Service 2020b). Forested edges and riparian areas along wetland and waterbodies that could potentially provide foraging habitat was observed during surveys.

Examples of unsuitable habitat:

- Individual trees that are greater than 1,000 feet from forested/wooded areas;
- Trees found in highly developed urban areas (e.g., street trees, downtown areas); and
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees."

Due to lack of suitable hibernacula and roosting habitat, and only marginal foraging habitat along the edges of agricultural fields, no adverse effects on protected bats is anticipated. Additionally, the nearest designated critical habitat for Indiana bat is more than 125 miles to the northeast of the Project area. USFWS determined that designating critical habitat for northern long-eared bat not prudent. Two small PFOs within the TVA utility row may provide marginal roosting habitat for these bat species. However, the PFO areas are not immediately near a power pole avoiding the potential for impacts those areas. Tree clearing is not anticipated to be required for this project. Due to lack of critical habitat within or near the Project area, no adverse effects to habitat for these species are expected.

3.1.2 Critical Habitat

No designated critical habitat for federally listed threatened and endangered species was identified within the Survey Area (USFWS, 2020c).

3.2 State Listed Species

Table 3-2: State Listed Species Potentially Occurring in the Project Area in Obion and Weakley Counties, Tennessee.

Common Name (Scientific Name)	Status[a][b]	County	Range and/or Habitat Requirements	Potential to Occur within Survey Area	Effects Determination
Lake Cress (*Neobeckia aquatica)*	S	Obion,	Gum of cypress swamps	Does Not Occur	No effect
Harbison's Hawthorn (*Crataegus harbisonii*)	E	Obion, Weakley	Dry rocky calcareous woods	Does Not Occur	No effect
Copper Iris (*Iris fulva*)	T	Obion	Bottomlands	Does Not Occur	No effect
Featherfoil (*Hottonia inflata*)	S	Obion	Wet sloughs and ditches	Unlikely to Occur	No effect
Ovate-leaved Arrowhead (*Sagittaria platyphylla*)	S	Obion	Swamps, emergent	Unlikely to Occur	No effect
Water-purslane (Didiplis diandra)	T	Obion	Swamps	Unlikely to Occur	No effect
Choke Cherry (*Prunus virginiana*)	S	Obion	Moist coves and slopes	Unlikely to Occur	No effect
Sweetscent Ladies'-tresses (*Spiranthes odorata*)	E	Obion	Swamp or pond margins	Unlikely to Occur	No effect
Nuttall's Waterweed (*Elodea nuttallii*)	S	Obion	Aquatic; streams and ponds	Unlikely to Occur	No effect
Yellow Water-crowfoot (*Ranunculus flabellaris*)	T	Obion	Ponds and Marshes	Unlikely to Occur	No effect
Bristly Sedge (*Carex comosa*)	T	Obion	Swamps	Unlikely to Occur	No effect
American Ginseng (*Panax quinquefolius*)	S-CE	Obion	Rich woods	Does Not Occur	No effect
Spinulose Shield Fern (*Dryopteris carthusiana*)	T	Weakley	Bogs	Does Not Occur	No effect
Naked-stem Sunflower (*Helianthus occidentalis*)	S	Weakley	Limestone glades and barrens	Does Not Occur	No effect

Common Name (Scientific Name)	Status[(a)(b)]	County	Range and/or Habitat Requirements	Potential to Occur within Survey Area	Effects Determination
Red Turtlehead (*Chelone obliqua*)	S	Weakley	Alluvial swamps and wet woods	Does Not Occur	No effect
Hatchie Burrowing Crayfish (*Creaserinus hortoni*)	E	Weakley	Saturated or seasonally saturated soils associated with perennial bodies of water such as Mississippi River tributaries.	Unlikely to Occur	No effect
Bachman's Sparrow (*Peucaea aestivalis*)	E	Obion	Dry open pine or oak woods	Unlikely to Occur	No effect
Eastern Woodrat (Neotoma floridana illinoensis)	T	Obion	Ponds and Marshes	Unlikely to Occur	No effect

Source: Tennessee Department of Environment and Conservation, 2020
(a) State Agency or State Act that provides species protection: TDEC – Tennessee Department of Environment and Conservation.
(b)State Status Key: E – Endangered, T-Threatened, S – Special Concern,

3.3 Bald Eagles and Migratory Birds

In Tennessee, the bald eagle is protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Protection Act (MBTA). No bald eagles or nests were observed during the environmental field surveys within the Survey Area or along public roadways near the Project. There are certain birds that are protected under the MBTA. In the USFWS IPaC Report for the Project Area, two Birds of Conservation Concern (BCC) were identified. Table 3-3 provides additional details regarding the BCCs identified as having a potential to occur within the Project Area.

Table 3-3: Birds of Conservation Concern Potentially Occurring within the Survey Area

Common Name	Scientific Name	Probability of Presence probability of presence breeding season survey effort no data JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	Breeding Season
American Kestrel	*Falco sparverius paulus*		April 1 – August 31
Rusty Blackbird	*Euphagus carolinus*		Breeds elsewhere

Source: USFWS, 2020

If tree clearing activities associated with construction of the Project overlap with the primary nesting season (April 1 – September 1), short-term inadvertent impacts could occur on bird species that nest in or near the construction areas. The Project will likely be designed to minimizes potential effects to bird species by avoiding forested areas identified within the Survey Area. Other mitigation measures TN Solar 1, LLC plans to implement include:

- Having at least one environmental inspector onsite during construction.
- Designing Project facilities to avoid sensitive resources where possible.
- Maximizing locations where the Project utilizes agricultural areas.
- Limiting the construction and operation workspaces to the minimum necessary.
- Conducting mitigation for effects to sensitive resources (e.g., wetlands) through agency permit conditions where required.
- Avoiding forested areas, to the extent possible.
- Limiting routine mowing/maintenance during the bird nesting season (generally April 1st through September 1st in the Project area).

On Dec. 22, 2017, the U.S. Department of the Interior (DOI) revised its guidance on incidental take of migratory birds in Memorandum M-370501, which specifies that incidental take prohibitions apply only to actions that have *as their purpose* the taking or killing of migratory birds. Because TN Solar 1, LLC's purpose is the lawful construction of a clean energy facility, and not the intentional take of migratory birds, TN Solar 1, LLC does not anticipate further coordination with USFWS regarding migratory birds.

4.0 SUMMARY AND CONCLUSIONS

Burns & McDonnell conducted a protected species review for the proposed Project and determined that 2 federally listed species had potential to occur within the Project boundary and 18 state protected, or species of concern are listed in Obion and Weakley counties, Tennessee.

Based on field surveys conducted on March 2 through March 4 and April 13 through April 21, 2020, habitat requirements of the protected species, distances from known species occurrences or critical habitat, and the lack of species observed during the field survey, and existing land uses of actively cultivated agriculture and maintained utility ROW, it is Burns & McDonnell's opinion that the Project will have no effect on federally protected species; Indiana bat and Northern long-eared bat. Additionally, there will be no effect on Tennessee state protected species; lake cress, Harbison's hawthorn, copper iris, featherfoil, ovate-leaved arrowhead, water-purslane, choke cherry, sweetsecent ladies' tresses, Nuttall's waterweed, yellow water-crowfoot, bristly sedge, American ginseng, spinulose shield fern, naked stem sunflower, red turtlehead, Hatchie burrowing crayfish, Bachman's sparrow, and Eastern woodrat.

It should be noted the information, conclusions, and, opinions presented are based on the species' listing status and species' legal protection status in effect at the time this report was prepared.

5.0 LITERATURE CITED

Burns & McDonnell. 2020. *Draft Wetland Delineation Report – Skyhawk Solar Array Project - Parcels*. Atlanta, Georgia: Burns & McDonnell Engineering Company, Inc.

Burns & McDonnell. 2020. *Draft Wetland Delineation Report – Skyhawk Solar Array Project – TVA Transmission Line*. Atlanta, Georgia: Burns & McDonnell Engineering Company, Inc.

Environmental Protection Agency, 2013. Level III Ecoregions of the Continental United States: Corvallis, Oregon, U.S. EPA – National Health and Environmental Effects Research Laboratory, map scale 1:7,500,000. http://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/us/Eco_Level_III_US.pdf. Website accessed: May 7, 2020.

Natural Resources Conservation Service. Tickfaw Watershed – 08070203 Ecoregion Description. *Mississippi Valley Loess Plains.* https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_015510.pdf. Website accessed: May 7, 2020.

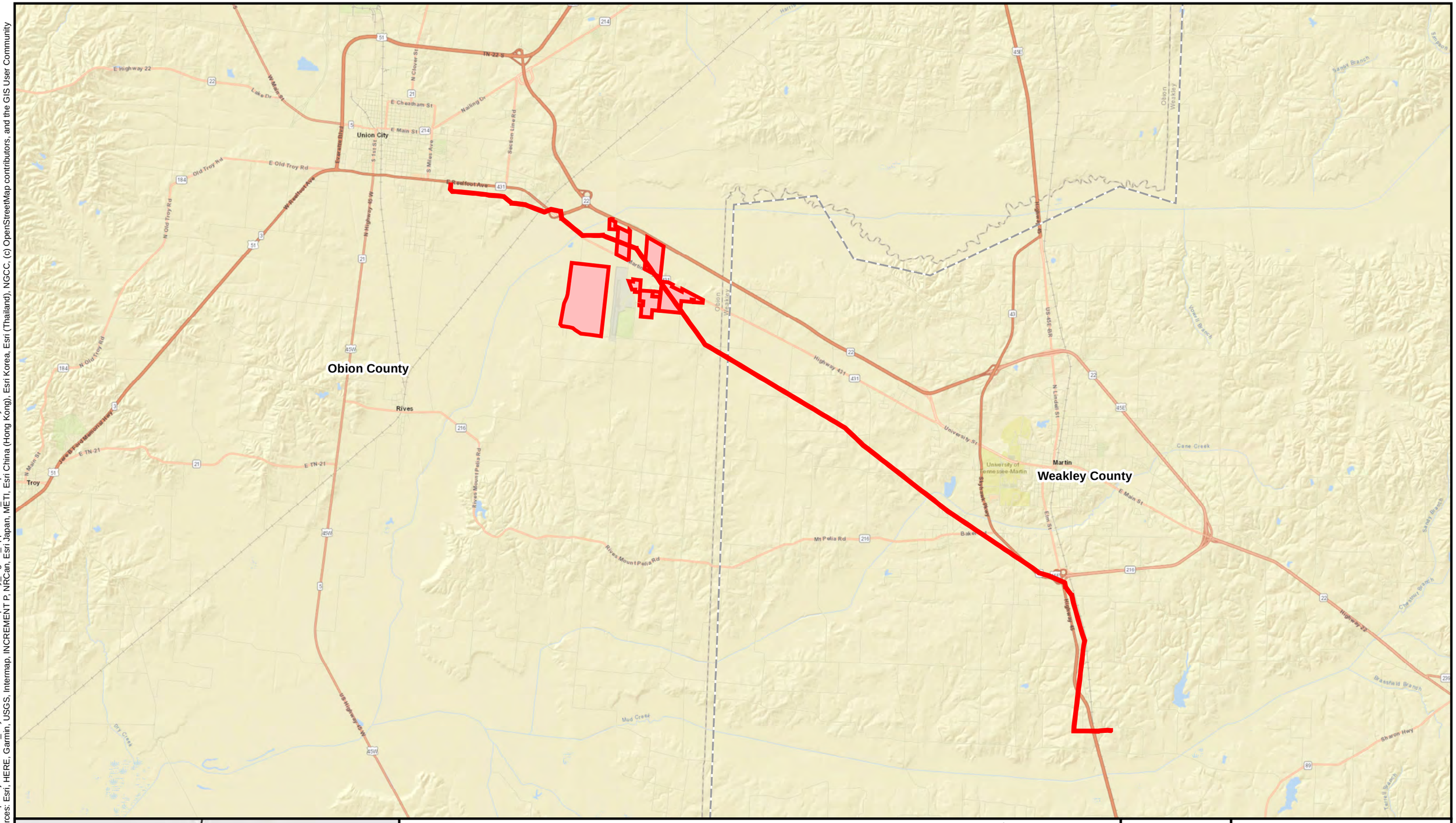
Tennessee Department of Environment and Conservation (TDEC). 2020. Rare Species By County; Obion County, TN; Weakly County, TN. http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9014:3:2313249362960. Website accessed May 12, 2020.

U.S. Fish and Wildlife Service (USFWS). 2019. Range-wide Indiana Bat Survey Guidelines. April 2019. Available via the internet at: https://www.fws.gov/arkansas-es/docs/FINAL%202019%20Range-wide%20IBat%20Survey%20Guidelines%204.10.19.pdf

U.S. Fish and Wildlife. 2020a. Indiana Bat (Myotis sodalis) Fact Sheet. https://www.fws.gov/midwest/endangered/mammals/inba/inbafctsht.html. Website accessed: January 27, 2020.

U.S. Fish and Wildlife. 2020b. Northern Long-eared Bat (*Myotis septentrionalis*) Fact Sheet. Website accessed: January 27, 2020. https://www.fws.gov/midwest/endangered/mammals/nleb/nlebfactsheet.html. Website accessed: January 27, 2020.

APPENDIX A - SITE VICINITY FIGURE

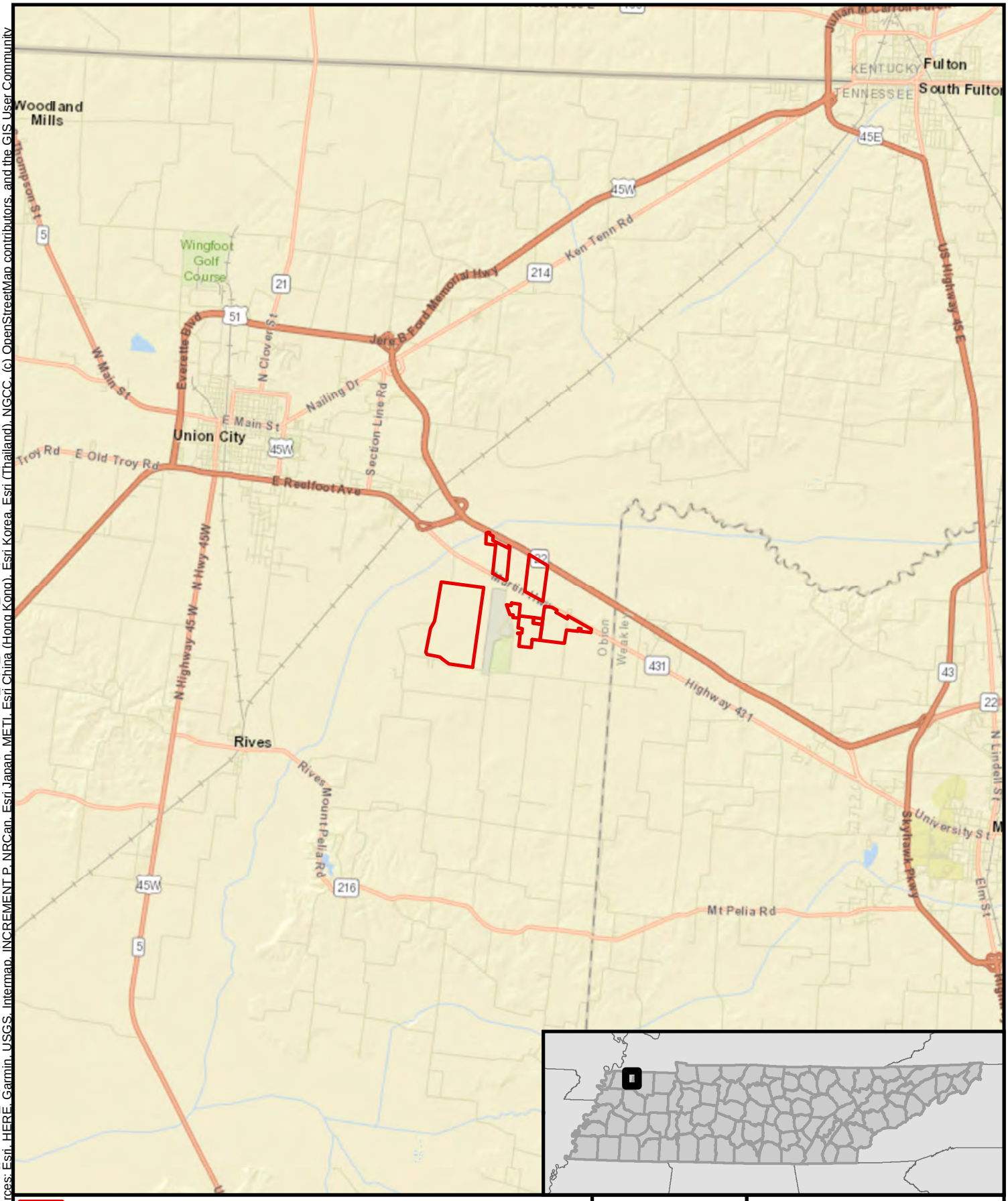


Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_AppendixA_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Appendix A: Site Vicinity Figure
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Issued: 5/15/2020



Parcels

NORTH

0 5,000 10,000

Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figure
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 1A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig1_Overview_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

APPENDIX B – WATER RESOURCES FIGURES

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 2A of 16A

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 3A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

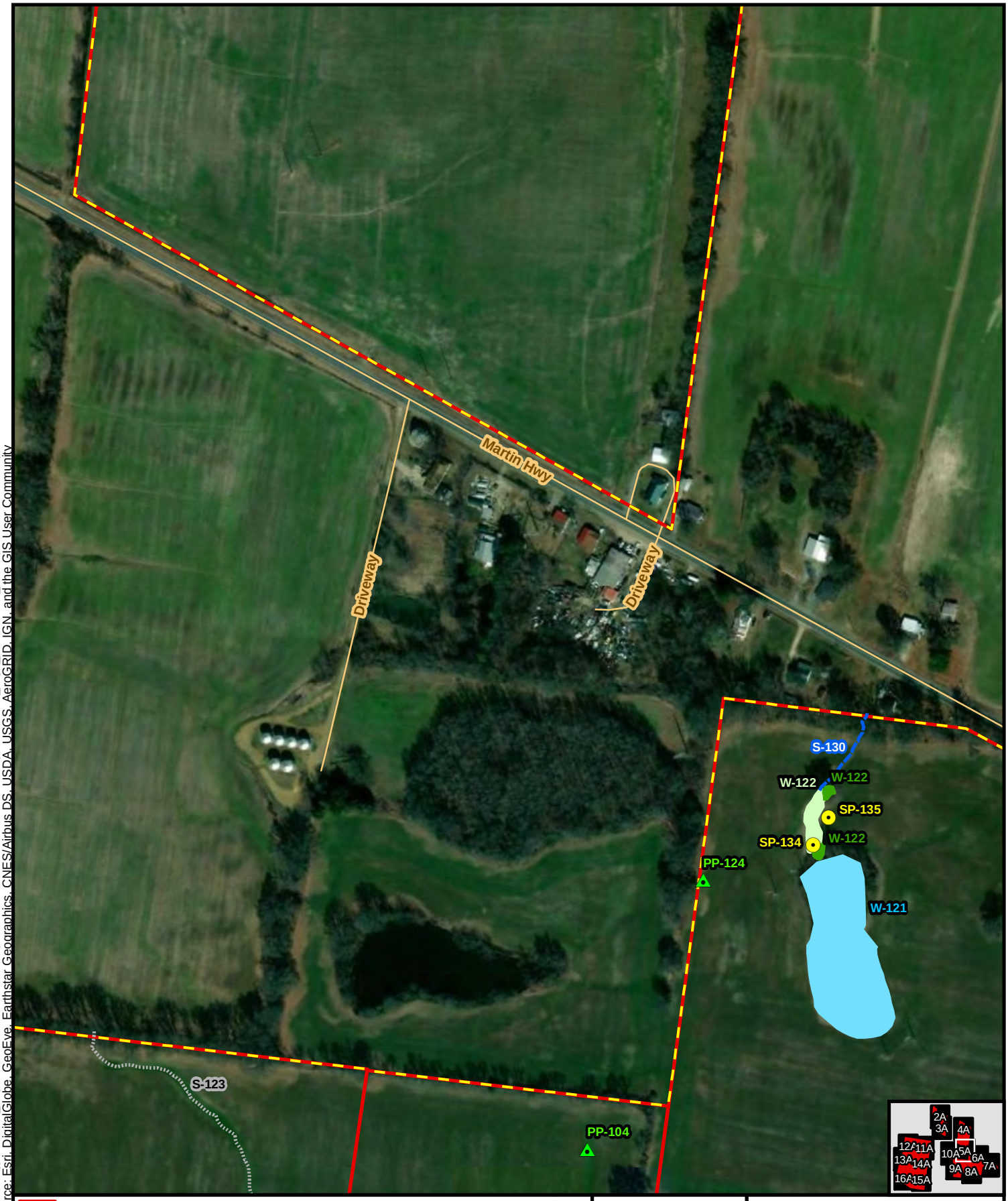
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 4A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TERReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

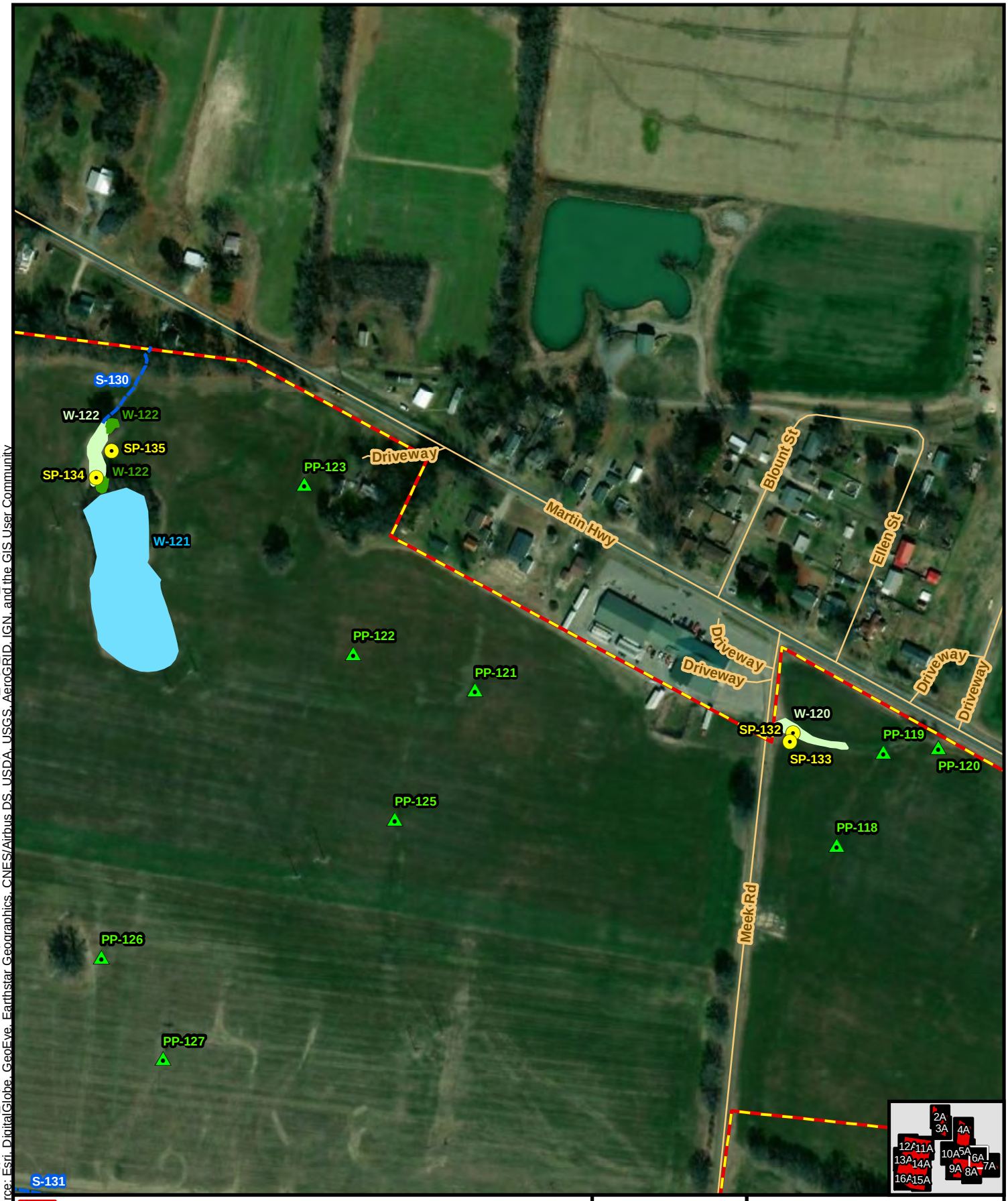
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 5A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 6A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

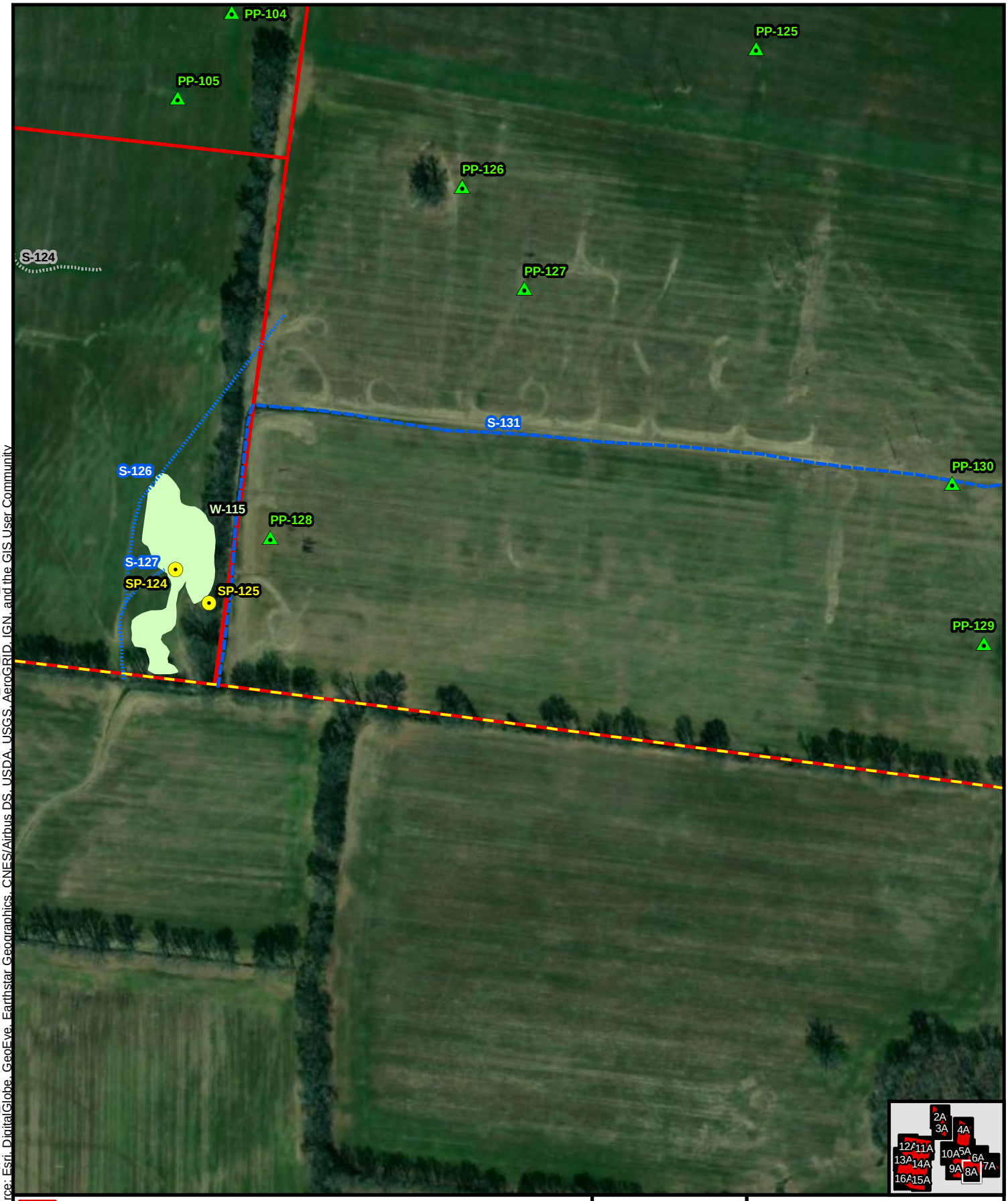
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 7A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 8A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 9A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

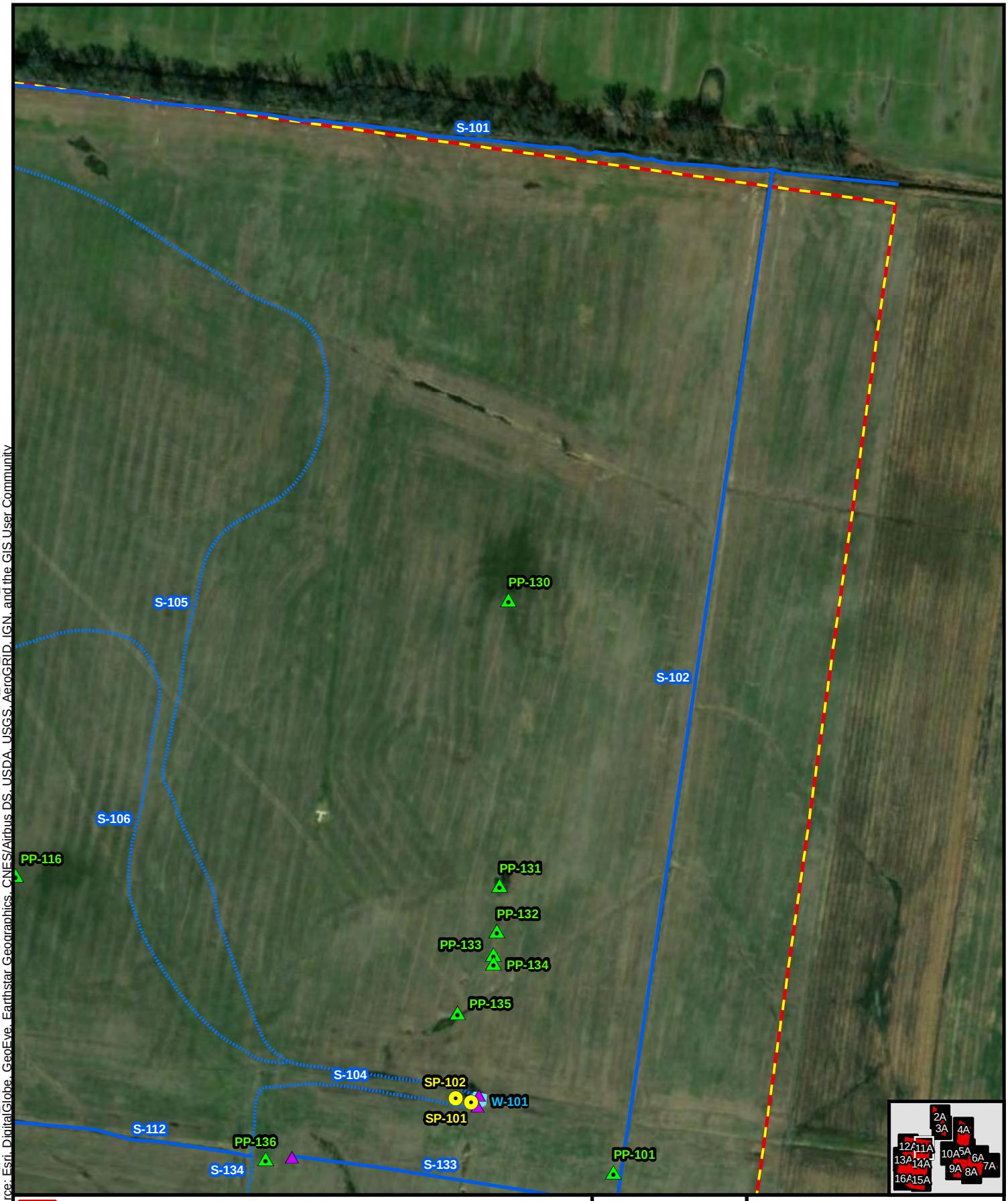
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 10A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TERReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 11A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

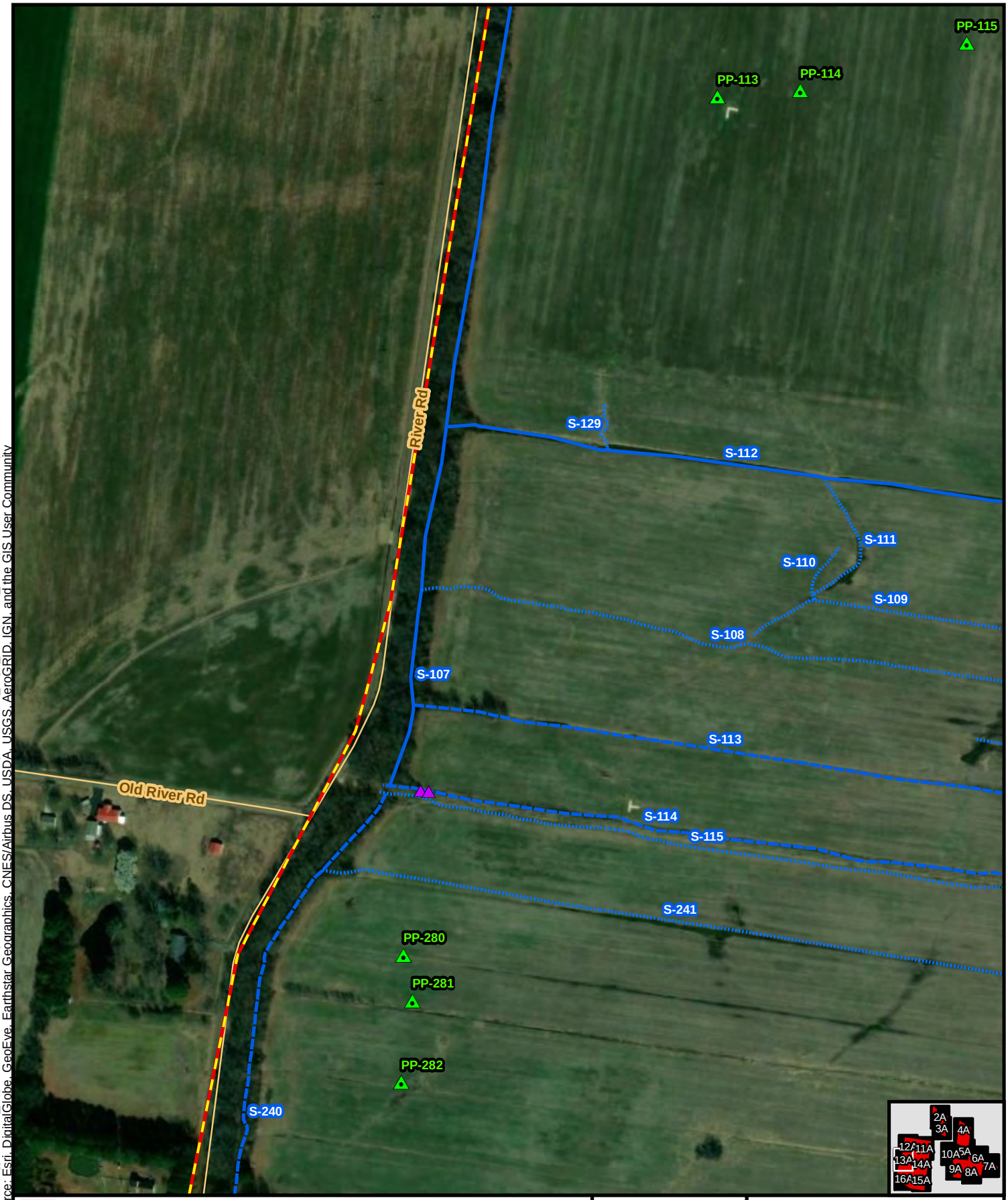
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 12A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TERReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

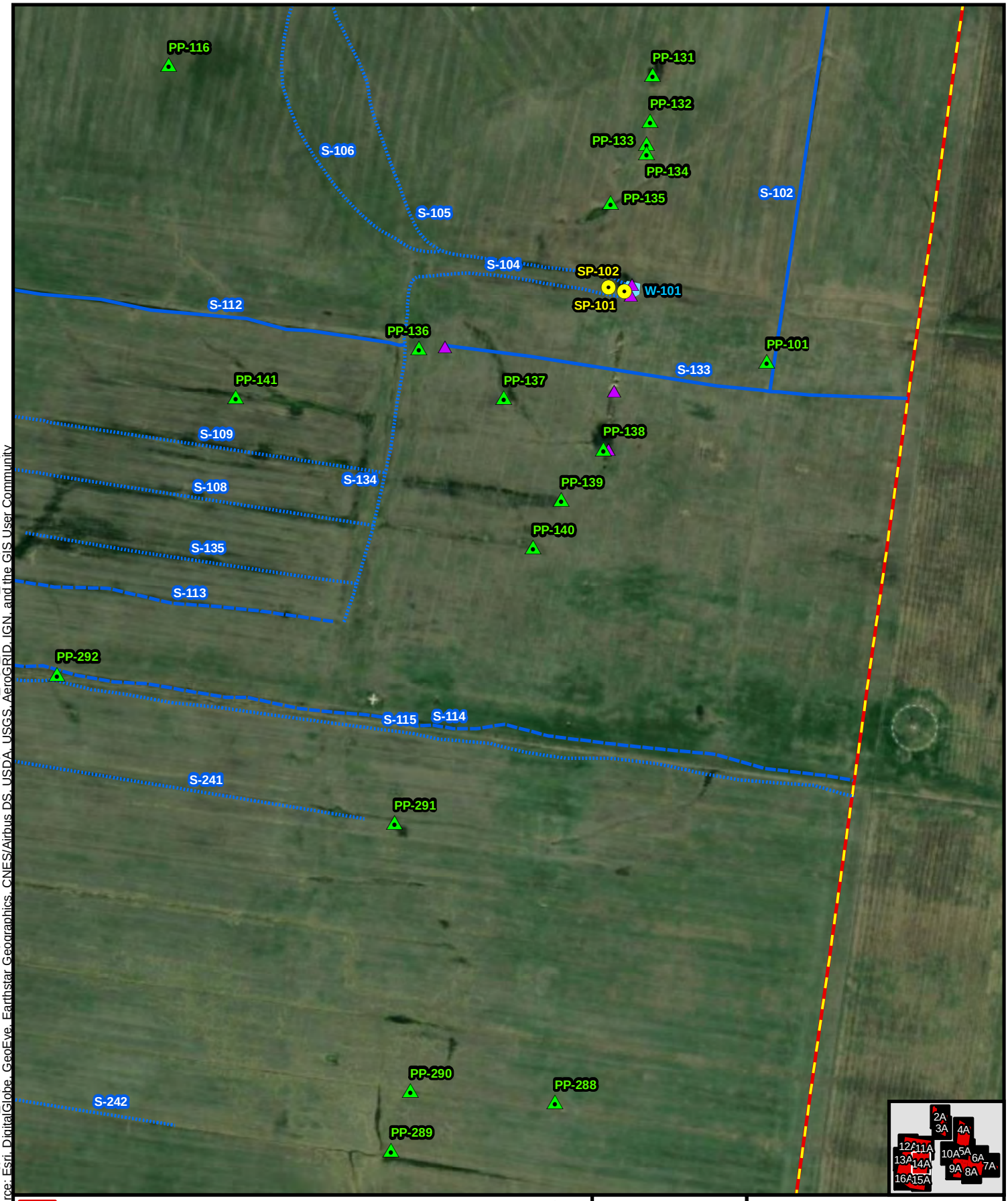
BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 13A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TERReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 14A of 16A

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 15A of 16A

Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Parcels
Survey Area
Wetland (W)
PEM
PFO
PUB
Culvert
Stream (S)
Ephemeral (Jurisdictional)
Ephemeral (Non-Jurisdictional)
Intermittent
Perennial
Sample Plot (SP)
Photograph Plot (PP)

NORTH

0 150 300
Scale in Feet

BURNS McDONNELL

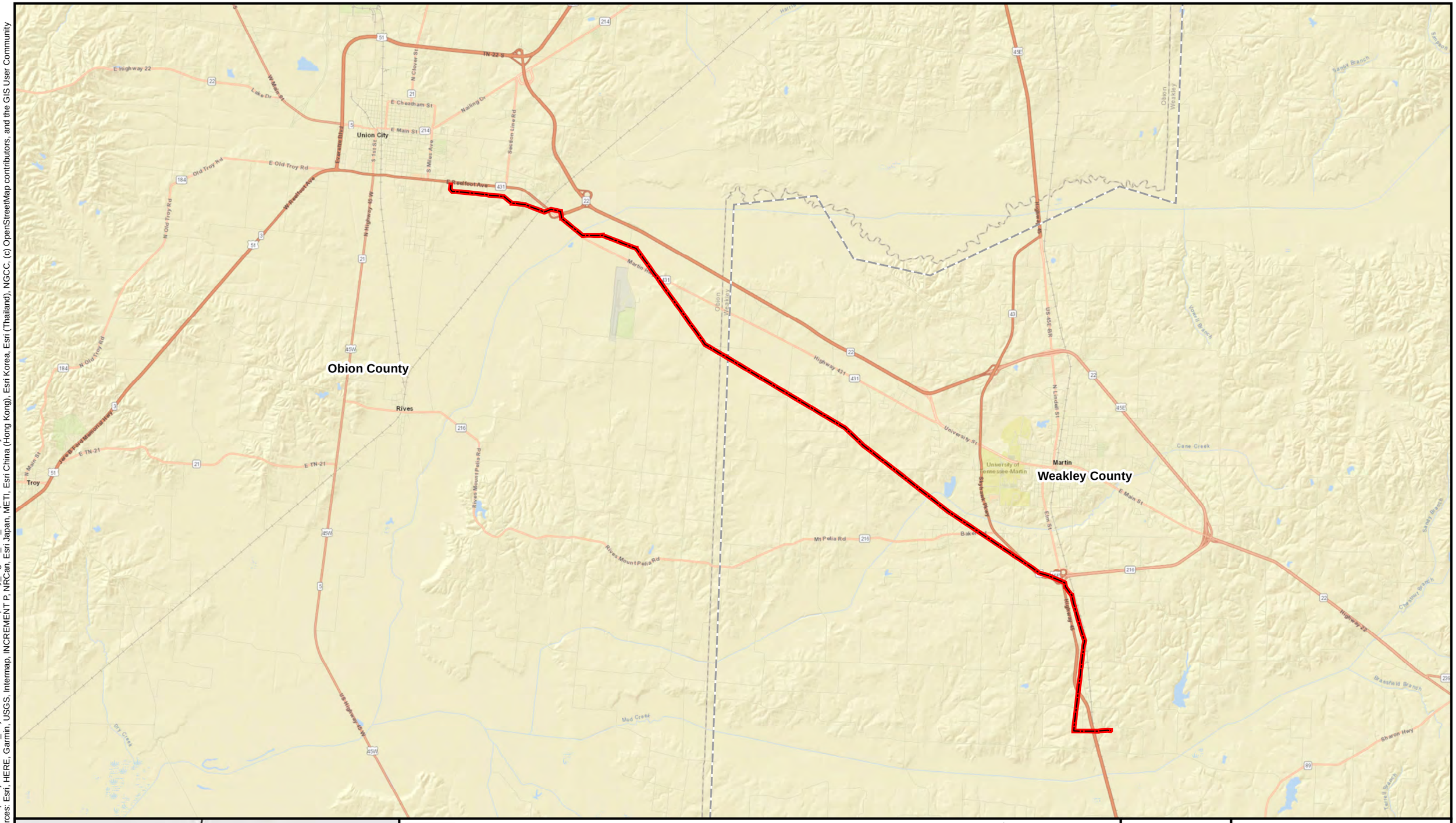
Appendix B:
Water Resources Figures
Solar Array Parcels
Skyhawk Solar Project
TN Solar 1, LLC
Obion County, TN
Page 16A of 16A

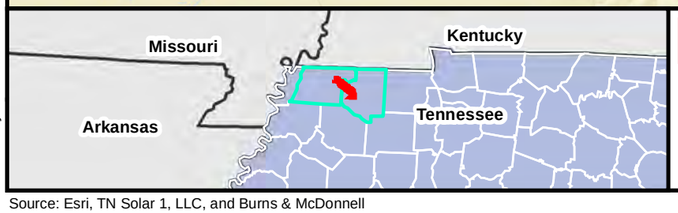
Path: Z:\Clients\ENS\OrigisEnergy\121610_SkyhawkSolar\Studies\Geospatial\DataFiles\ArcDocs\WDR\SkyhawkSolar_Fig4_Delineation_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\122610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-1_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary

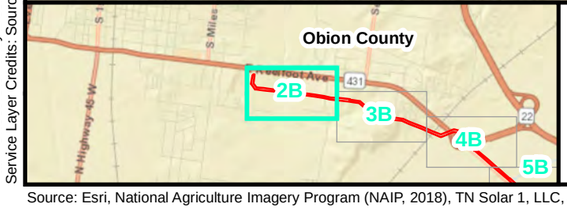
NORTH
1.5 0.75 0 1.5
Miles

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 1B of 27B

Source: Esri, TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

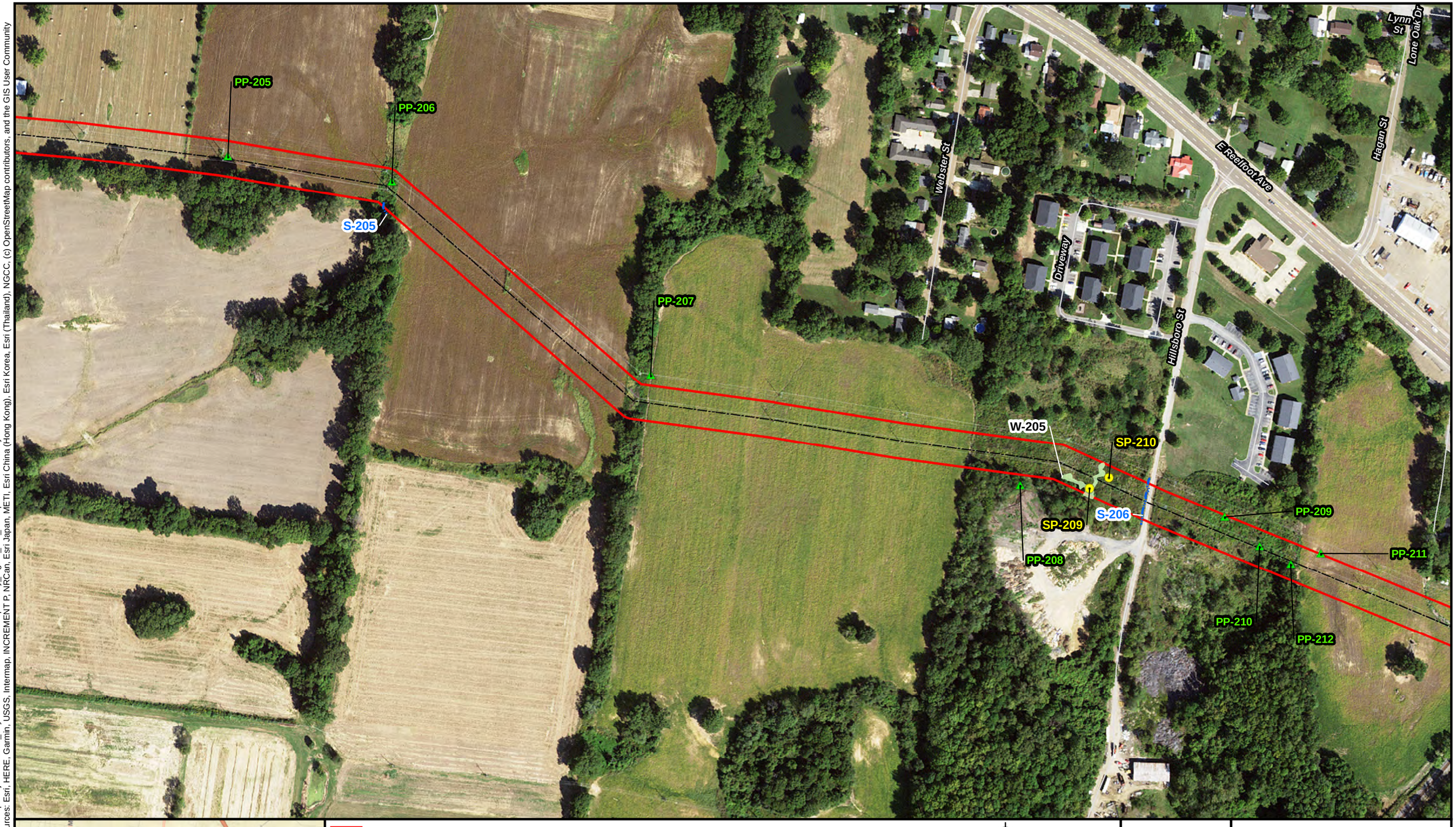
BURNS McDONNELL

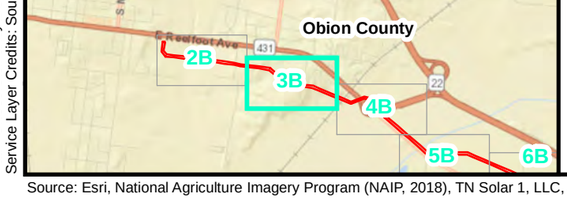
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 2B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

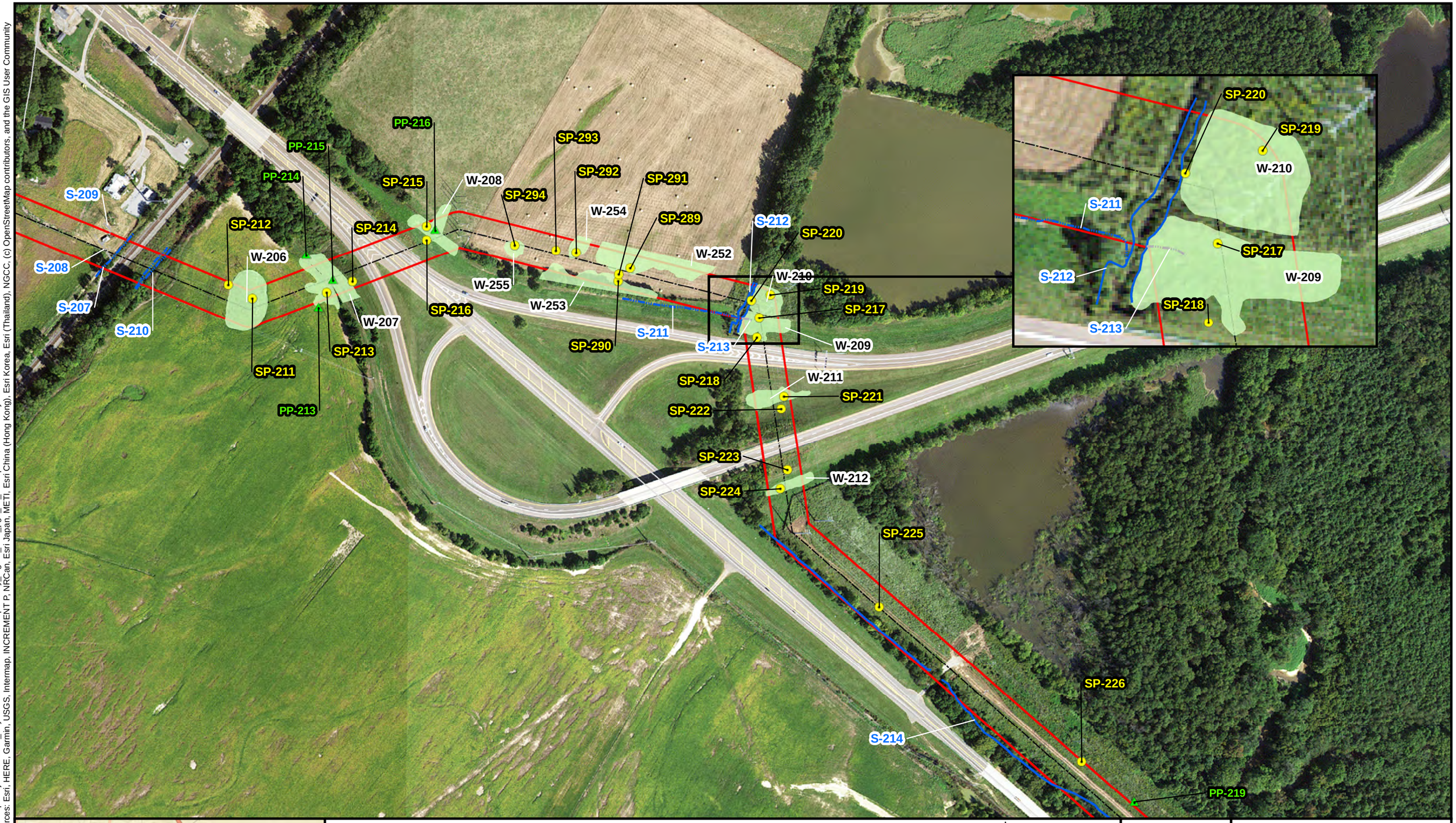
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 3B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

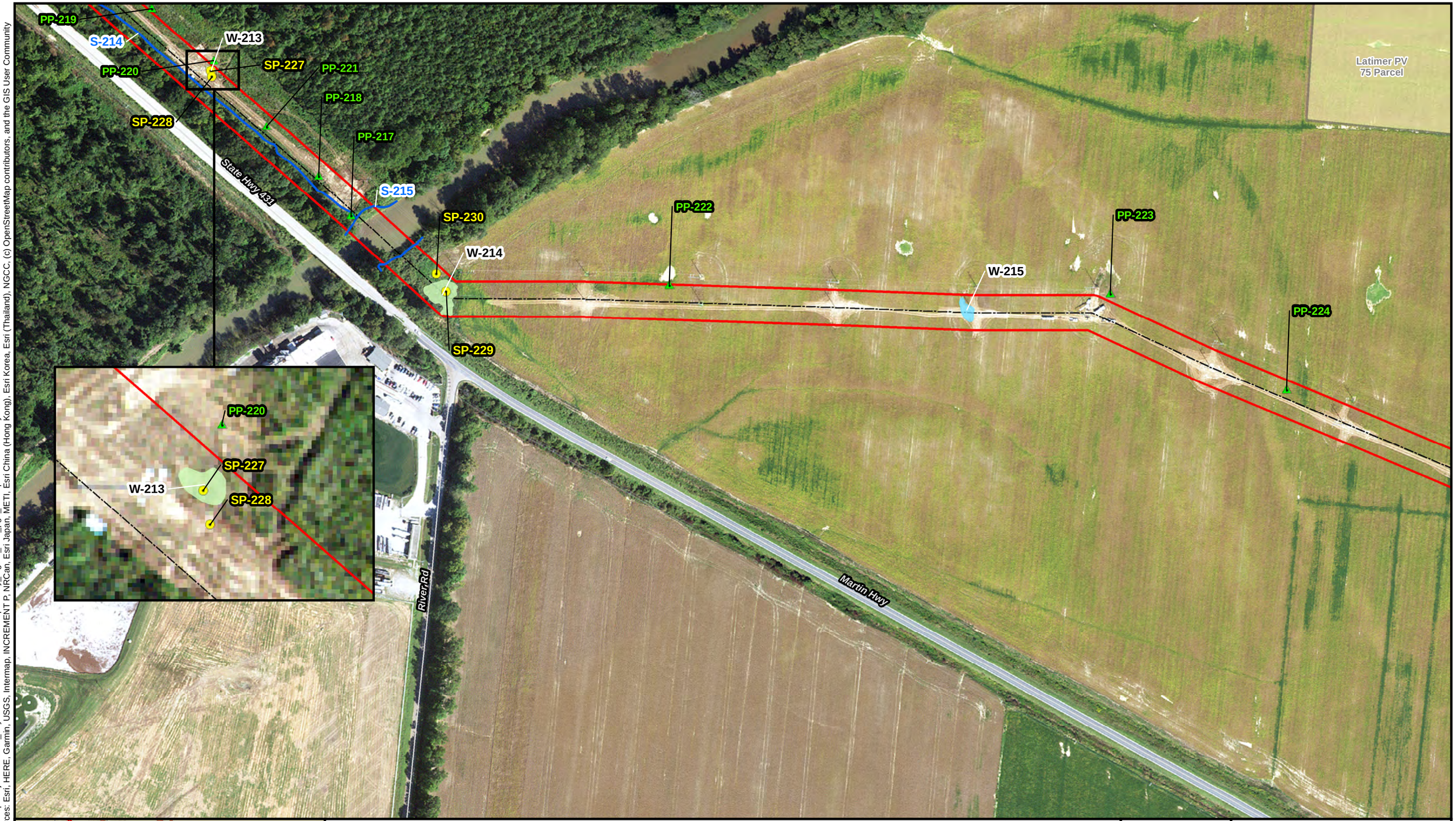


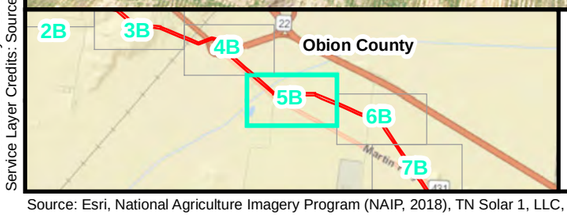
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 4B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_pg3_v2_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

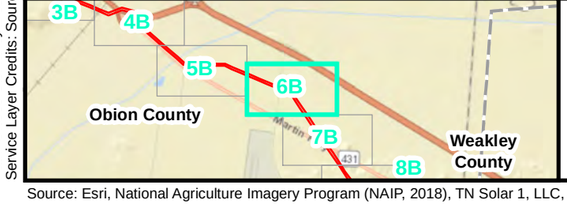
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 5B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_pg4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250
Scale in Feet

BURNS McDONNELL

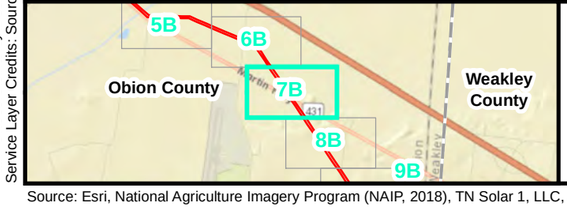
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 6B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

W-221
SP-236
SP-235
W-222
SP-237
PP-227
Thompson Parcel
Martin Hwy
PP-232
Driveway
Dowdy PV 20 Parcel
PP-233
Felix Winter 133 Parcel



Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

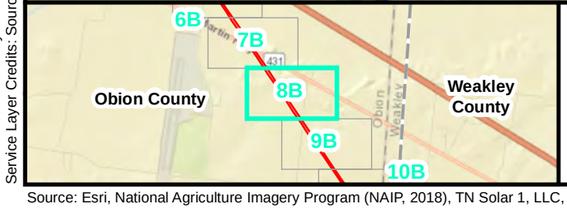
NORTH
250 125 0 250
Scale in Feet

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 7B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

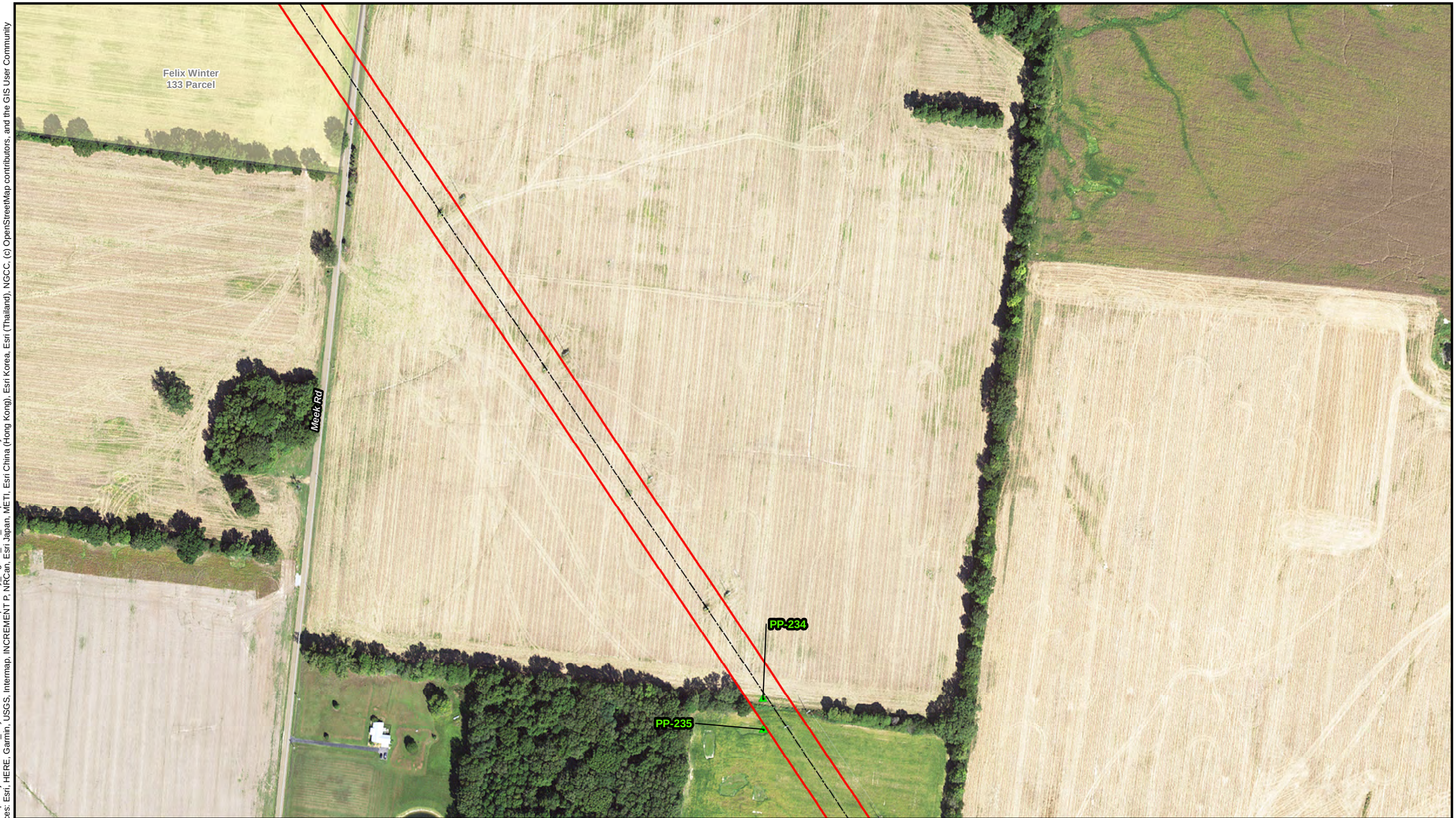
250 125 0 250
Scale in Feet

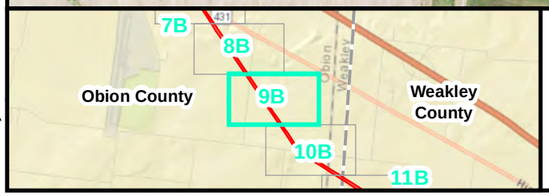
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 8B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

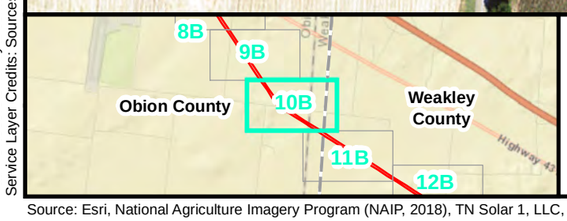
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 9B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

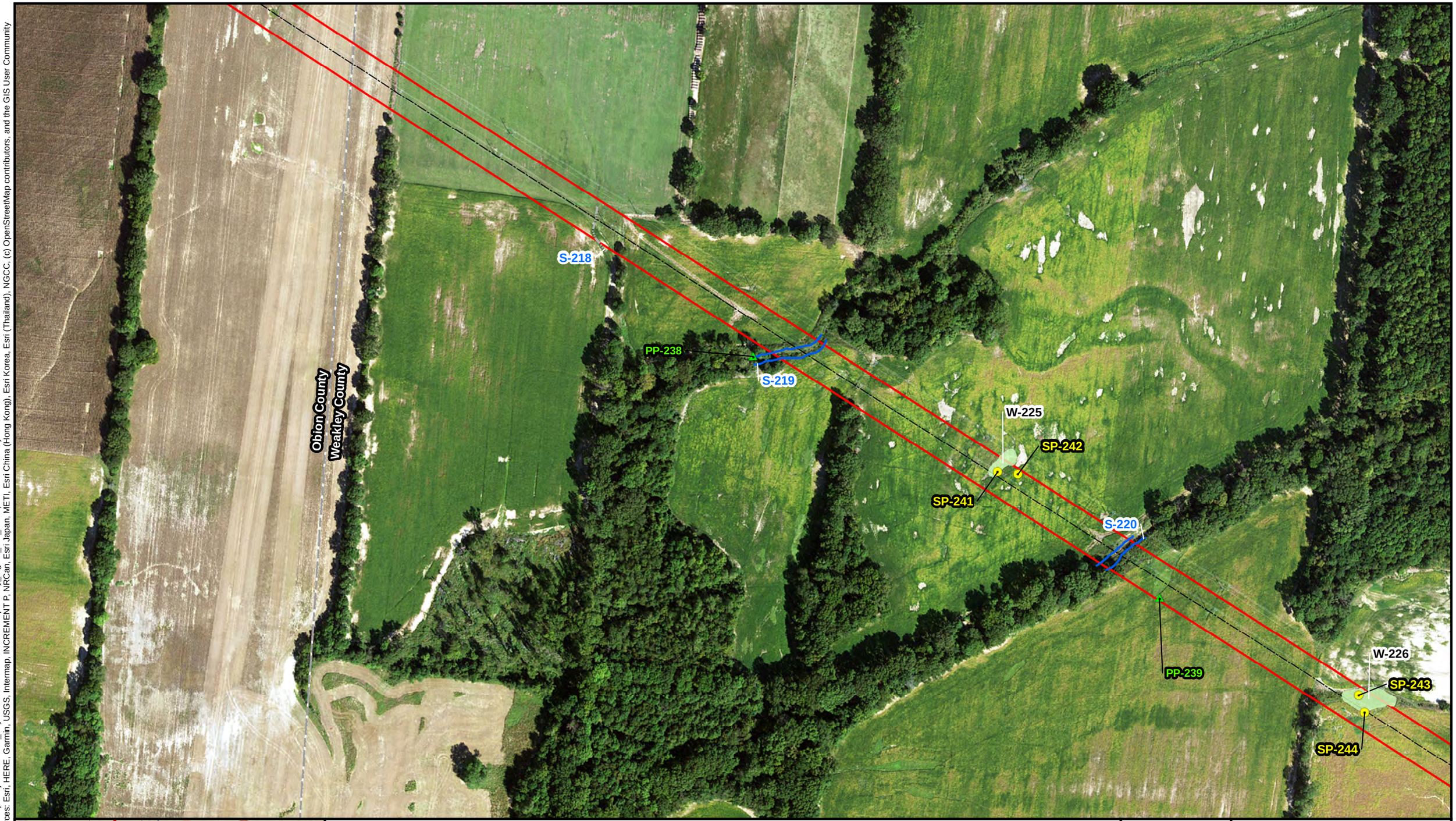
BURNS McDONNELL

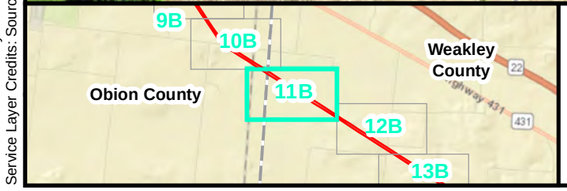
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 10B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

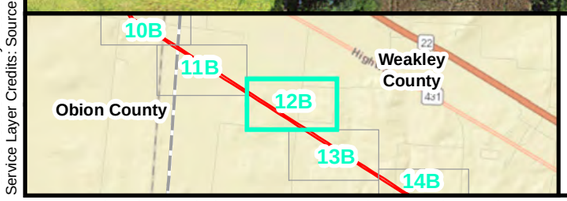
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 11B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_Skyhawk\Solar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

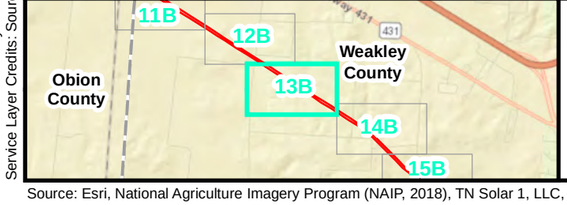
NORTH
250 125 0 250
Scale in Feet

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 12B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

BURNS McDONNELL

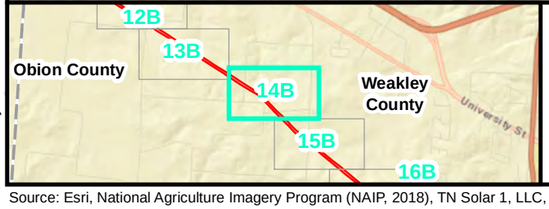
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 13B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

PP-242
PP-243
Barger Rd
Garner Rd
Fuqua Rd
W-227
S-224
SP-245
SP-246



Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH
250 125 0 250
Scale in Feet

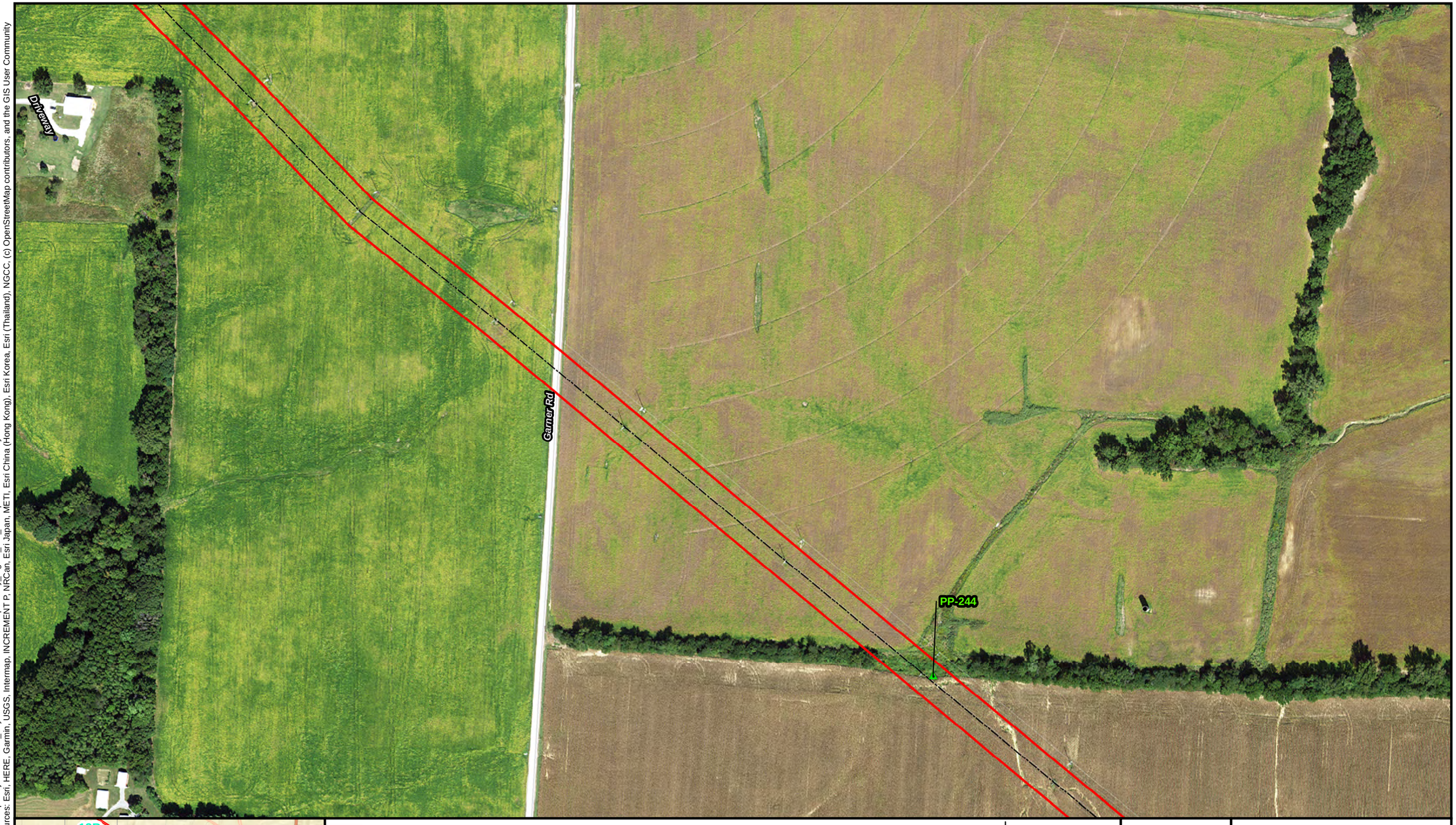
BURNS McDONNELL

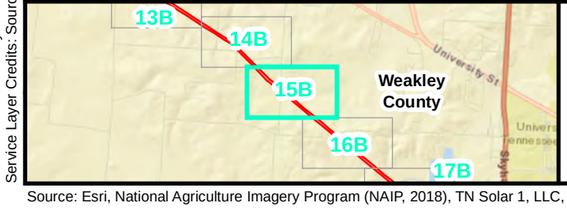
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 14B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250
Scale in Feet

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 15B of 27B

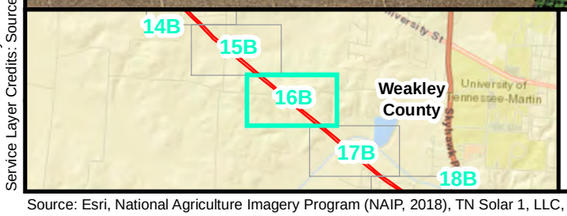
Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Hawks Rd

Driveway

PP-245



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

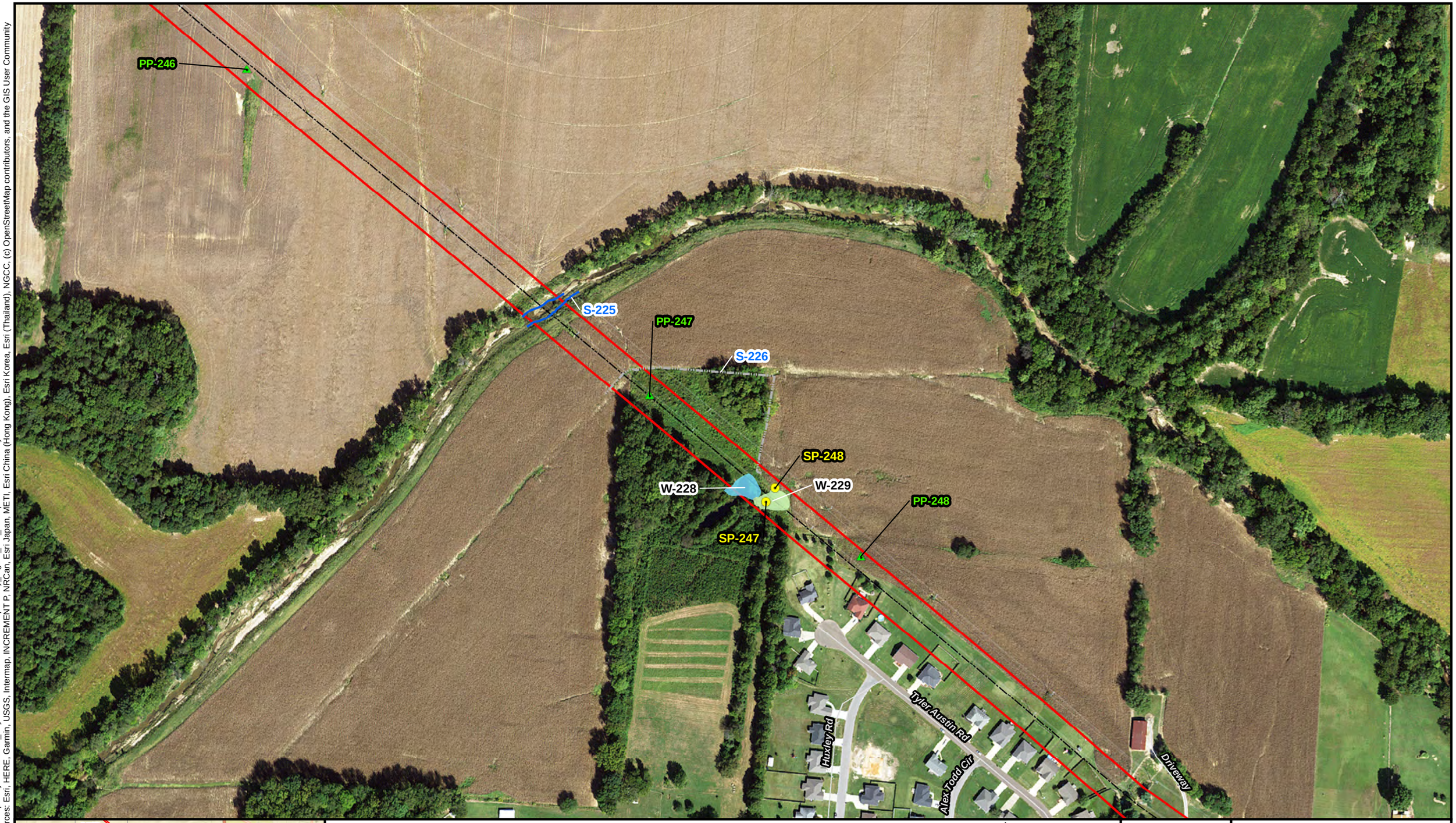
BURNS McDONNELL

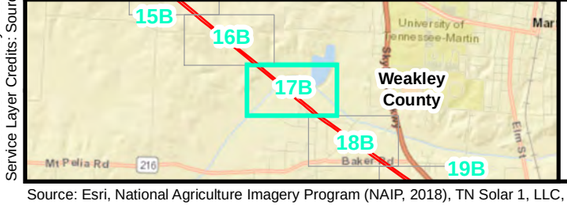
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 16B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250
Scale in Feet

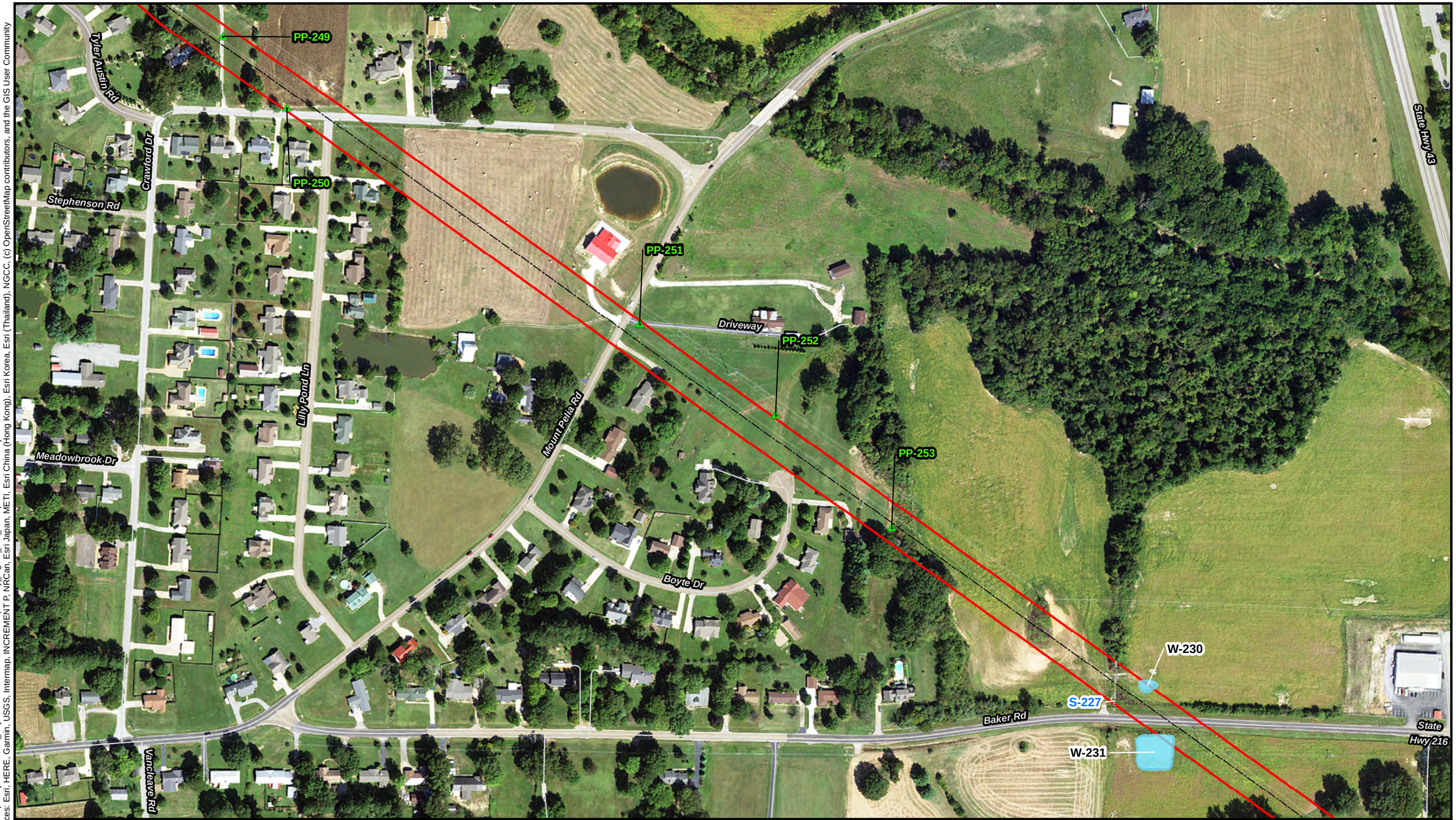
BURNS McDONNELL

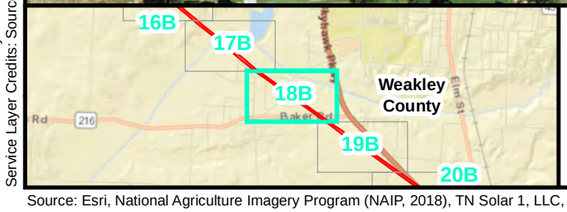
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 17B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

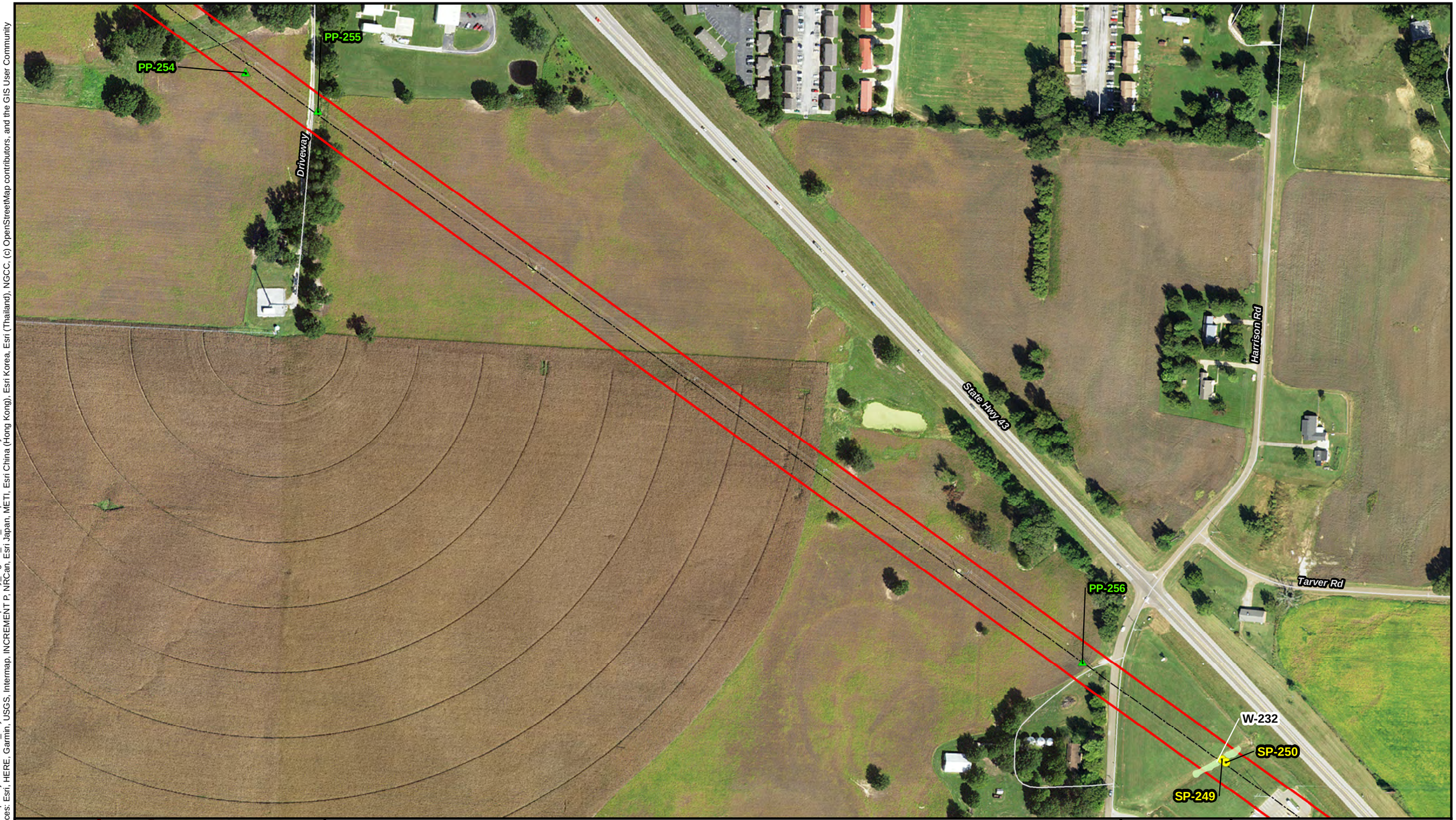
BURNS McDONNELL

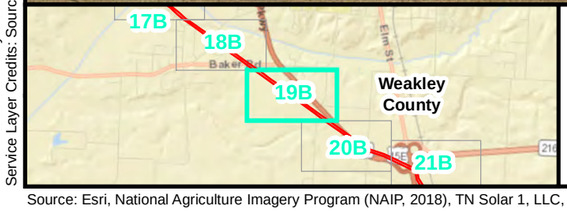
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 18B of 27B

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

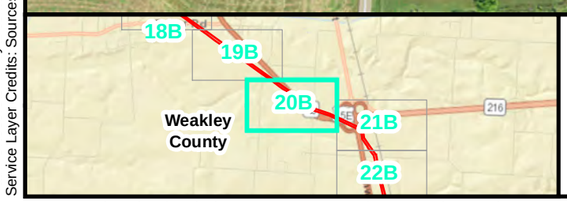
NORTH
250 125 0 250
Scale in Feet

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 19B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020



Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

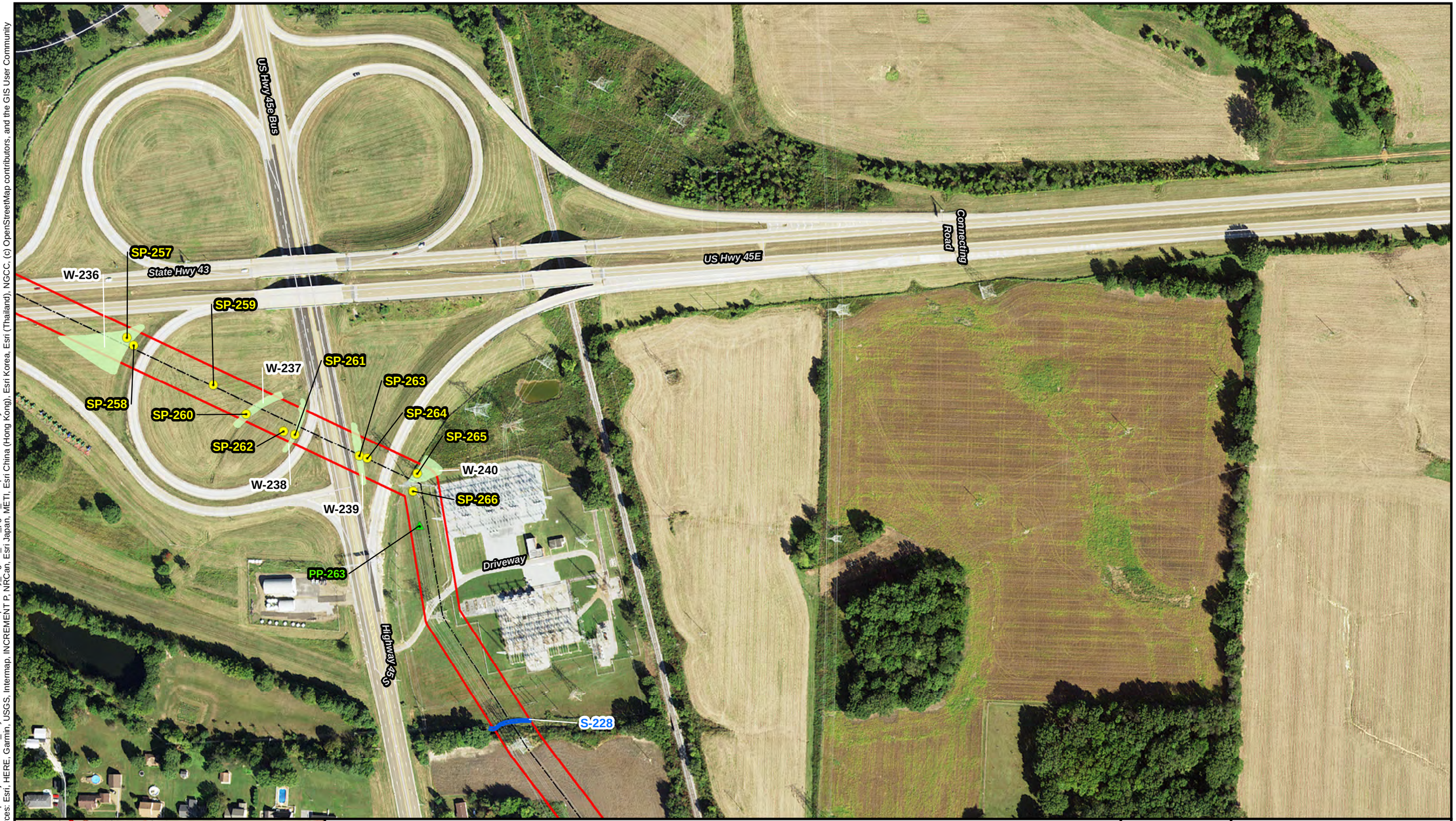
BURNS McDONNELL

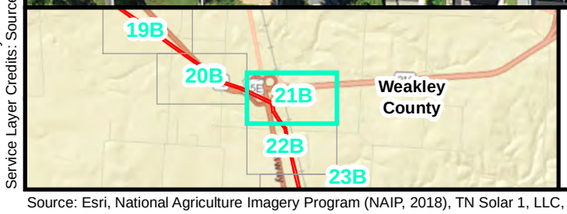
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 20B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\lohaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd lohaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

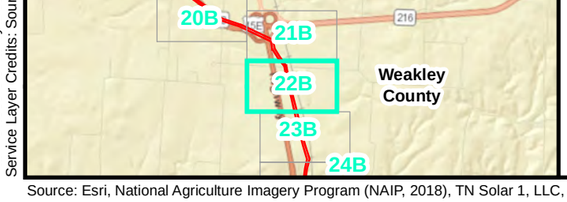
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 21B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_pg20_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

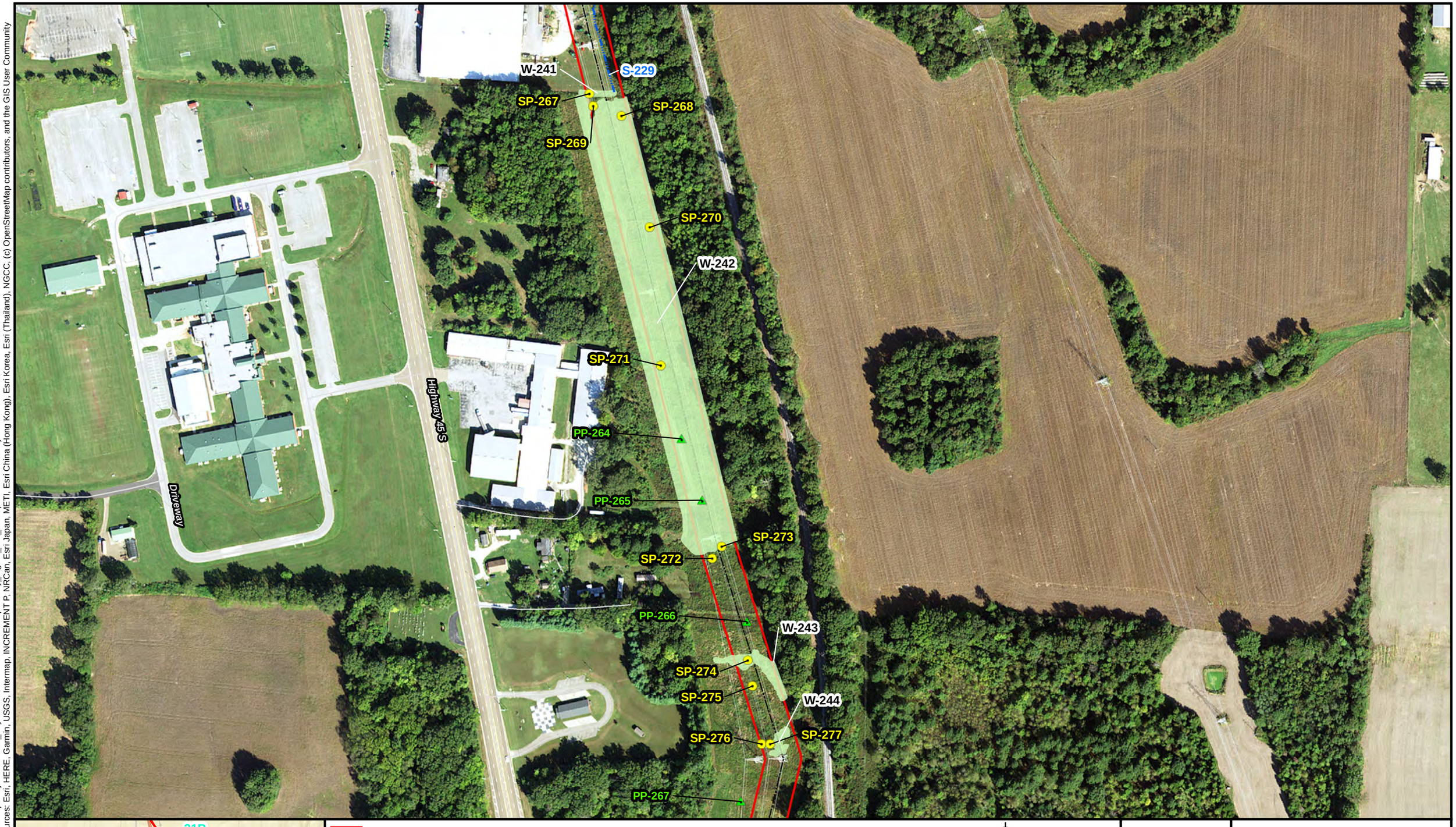
250 125 0 250
Scale in Feet

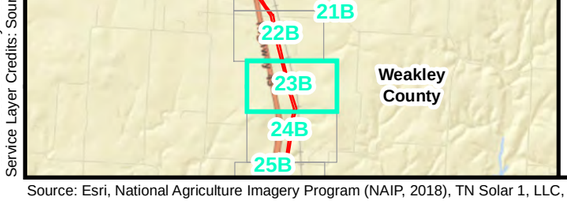
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 22B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250

Scale in Feet

BURNS McDONNELL

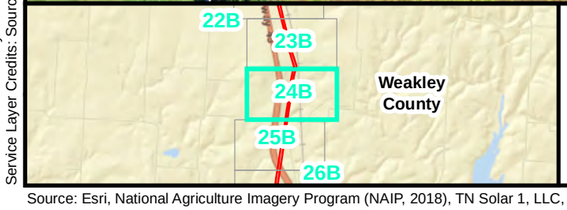
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

PP-267
PP-268
SP-279
SP-278
W-245
PP-269
PP-270
PP-271
S-232
S-231
PP-272
US HWY 45E Connecting Road
Highway 45 S
Wallace Rd
Driveway
Summer Rd



Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

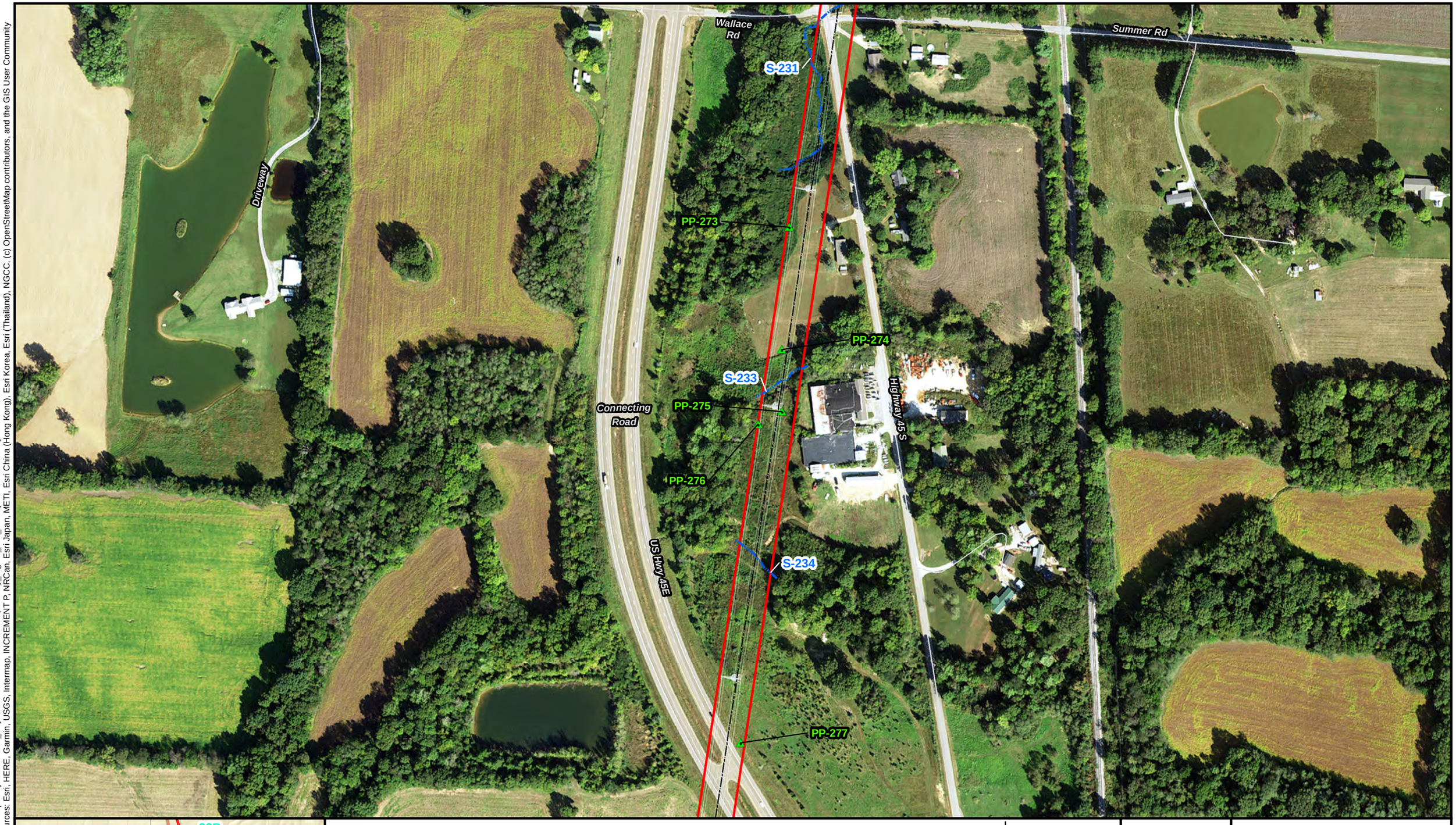
250 125 0 250
Scale in Feet

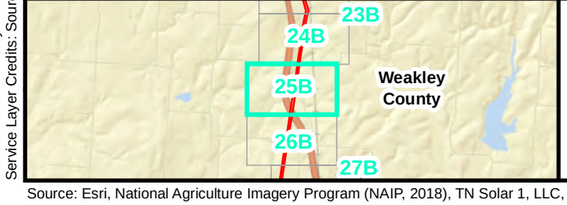
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 24B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*

Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250
Scale in Feet

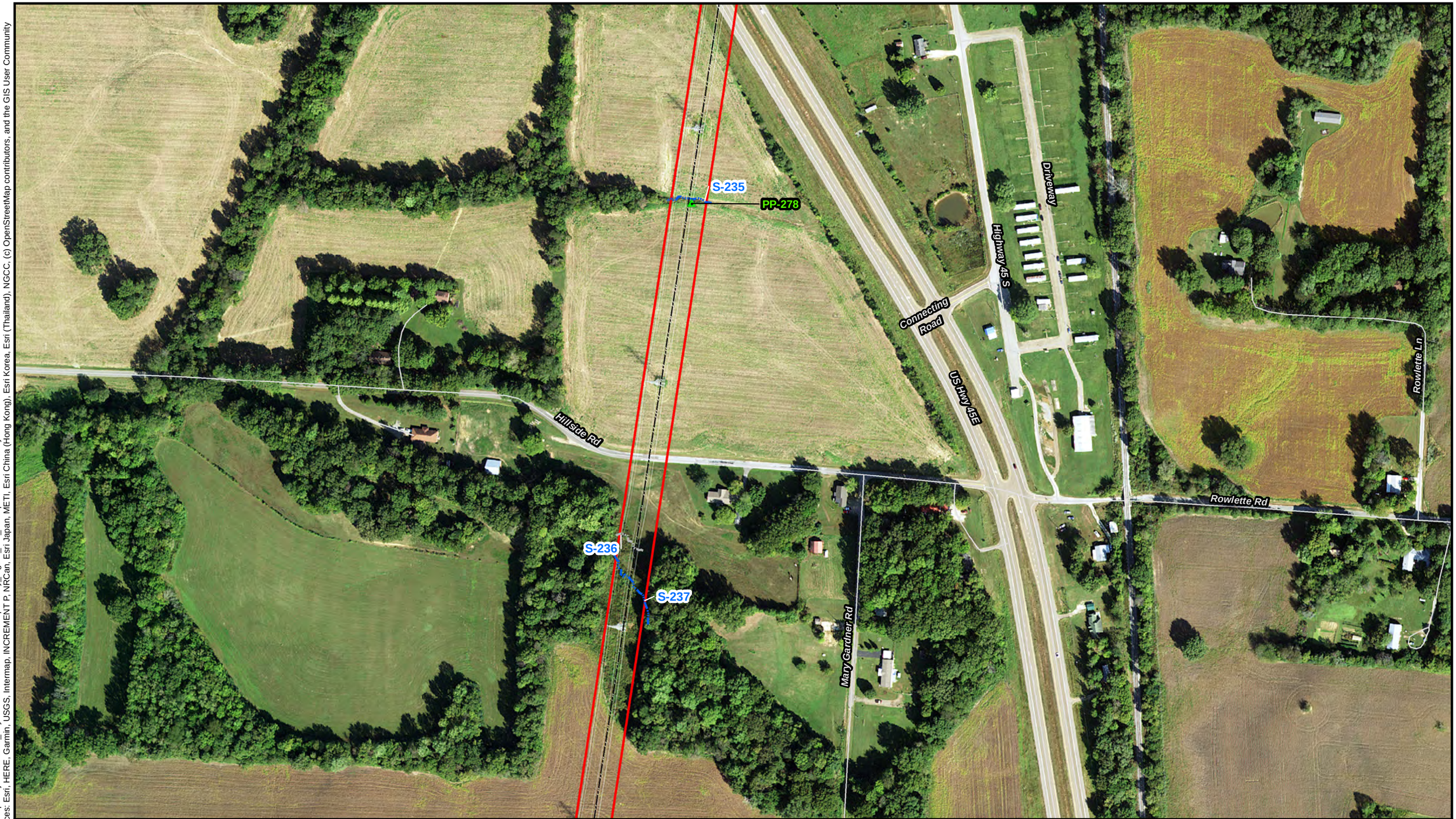
BURNS McDONNELL

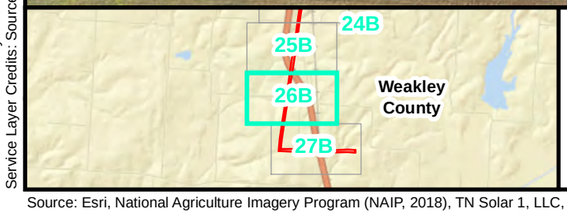
Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 25B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

Path: C:\Users\olhaney\Desktop\Projects\121610_SkyhawkSolar\GIS\MXDs\TEReport\Sky_Figure_A-4_TEReport.mxd olhaney 5/15/2020
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

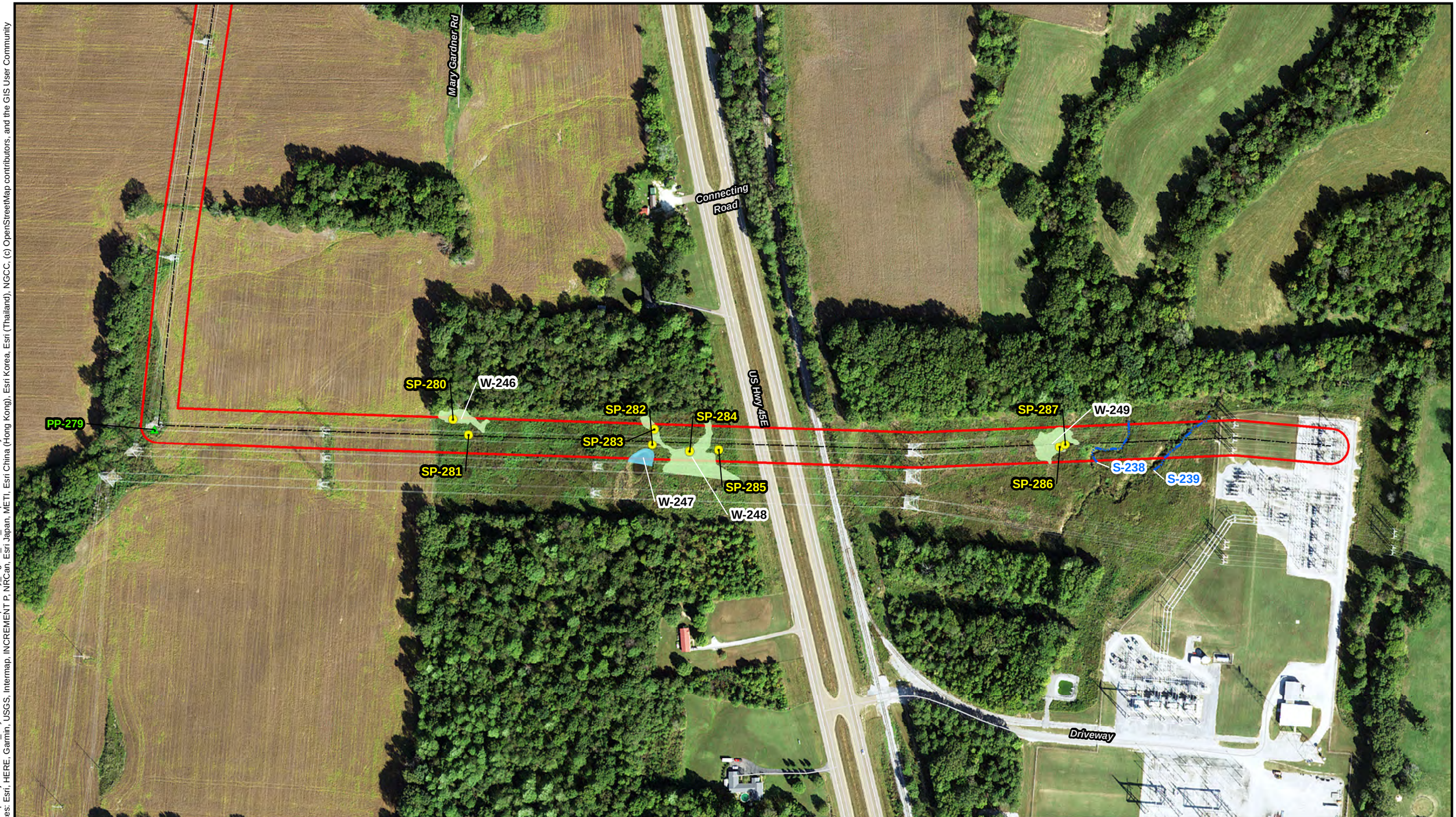
NORTH
250 125 0 250
Scale in Feet

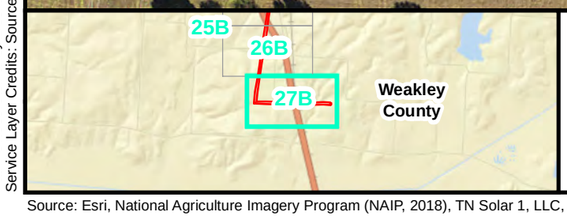
BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 26B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020





Project ROW
Project Alignment
County Boundary
Parcel Boundary*
Photograph Plot (PP)
Sample Plot (SP)

Wetland (W)
PEM
PFO
PUB

Stream (S)
Intermittent
Perennial
Ephemeral

*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

NORTH

250 125 0 250
Scale in Feet

BURNS McDONNELL

Appendix B: Water Resources Figure
Overhead Fiber Line
Skyhawk Solar Project
TN Solar 1, LLC
Obion and Weakley Counties, TN
Page 27B of 27B

Source: Esri, National Agriculture Imagery Program (NAIP, 2018), TN Solar 1, LLC, and Burns & McDonnell

Issued: 5/15/2020

APPENDIX C – U.S. FISH AND WILDLIFE SERVICE INFORMATION FOR PLANNING AND CONSULTATION (IPAC) REPORTS

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:
Consultation Code: 04ET1000-2019-SLI-0908
Event Code: 04ET1000-2019-E-01786
Project Name: Skyhawk Solar Project

September 09, 2019

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: 04ET1000-2019-SLI-0908

Event Code: 04ET1000-2019-E-01786

Project Name: Skyhawk Solar Project

Project Type: POWER GENERATION

Project Description: Potential site for solar development. Development would be confined to existing actively cultivated agricultural tracts. No tree clearing would be required. Polygon is much larger than what is needed. No streams directly affected.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.386809874602434N88.98594944597198W

Counties: Obion, TN

Endangered Species Act Species

There is a total of 2 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.

---

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

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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:
Consultation Code: 04ET1000-2020-SLI-1077
Event Code: 04ET1000-2020-E-01492
Project Name: Skyhawk Solar T- Line

April 29, 2020

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-1077

Event Code: 04ET1000-2020-E-01492

Project Name: Skyhawk Solar T- Line

Project Type: POWER GENERATION

Project Description: Existing TVA transmission line

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.34450788046341N88.90333613078135W

Counties: Obion, TN | Weakley, TN

Endangered Species Act Species

There is a total of 2 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.

---

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

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

BURNS McDONNELL

CREATE AMAZING.

Burns & McDonnell
3650 Mansell Road, Suite 300
Atlanta, GA
O 770-510-4526
www.burnsmcd.com

APPENDIX G – PUBLIC SCOPING COMMENTS

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

December 7, 2020

Via Electronic Mail to aapilakowski@tva.gov
Attn: Ashley Pilakowski, NEPA Specialist
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11B
Knoxville, TN 37902

Dear Ms. Pilakowski:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) Draft *Environmental Assessment* (EA) for a proposed power purchase agreement (PPA) with the Skyhawk Solar Facility in Obion County, Tennessee. The Skyhawk Solar Facility would be constructed and operated by TN Solar and include up to approximately 100 megawatts of alternating current (AC) generating capacity. Additionally, TVA would install a new permanent switching station and perform structural upgrades along its existing 16-mile Weakley to Union City 161-kilovolt transmission line (TL). The scope of this Draft EA covers both the impacts related to construction and operation of the Skyhawk Solar Facility as well as impacts related to the associated modifications to the TVA transmission system.

Actions considered in detail within the Draft EA include:

- **No Action Alternative –** Under the No Action Alternative, TVA would not purchase the power generated by the Skyhawk Solar Facility under the 15-year PPA with TN Solar, and TVA would not be involved with the project. If TVA were to select this alternative, and TN Solar elected not to proceed with the project, then TN Solar would not construct any facility on any tracts of land in Obion County, Tennessee, and TVA would not make the associated modifications to its transmission system. TN Solar would not complete the purchase or lease agreements of the properties necessary to construct the Solar Facility. Existing conditions would remain unchanged (i.e., property would remain as agricultural land) and agricultural activities would likely continue. In addition, TVA would continue to rely on other sources of generation described in the 2019 Integrated Resource Plan (IRP) to ensure an adequate energy supply and to meet its goals for increased renewable and low greenhouse gas-emitting generation.[1] Under the No Action Alternative, there would be no project-related changes to land use, natural resources, or socioeconomics in the immediate future.

- **Proposed Action Alternative** – Under the Proposed Action Alternative, TN Solar would construct and operate a single-axis tracking photovoltaic Skyhawk Solar Facility in Obion County, and TVA would purchase renewable energy from the facility in accordance with the 15-year PPA with TN Solar. The

[1] For more information on TVA's 2019 IRP, please visit https://www.tva.com/environment/environmental-stewardship/integrated-resource-plan.

Skyhawk Solar Facility would generate up to 100 MW AC output for transmission to the electrical network and would occupy approximately 690 acres of land located on four individual parcels in Obion County, Tennessee approximately 3.5 miles southeast of Union City. The entire 100-MW output of the Skyhawk Solar Facility would be sold to TVA under the terms of the PPA. The project would connect to the existing TVA electrical network (the 16-mile Weakley to Union City 161- kV TL) via a 675-foot-long tie-in originating at TVA's new Skyhawk Switching Station. TVA's Draft EA assesses the impact of TVA's action of entering into the PPA with TN Solar, the associated impacts of the construction and operation of the proposed Solar Facility and Skyhawk Substation by TN Solar, and the new transmission interconnection, switching station, and structural modifications along 16 miles of the Transmission Right-of-Way by TVA.

TDEC has reviewed the Draft EA and provides the following comments:

Cultural and Natural Resources

TDEC believes the Draft EA adequately addresses potential impacts to cultural resources within the proposed project area.[2]

Air Resources

With respect to open burning, TDEC recommends avoiding burning on days with poor smoke dispersion, not burning on air quality alert days, use of good smoke management practices when planning the open burning and insuring coordination with forestry agencies and local fire agencies prior to conducting any planned burning. TDEC oversees open burning regulations within Obion County and would need to be contacted about open burning of any vegetative or construction/demolition related debris generated from the project before the burning begins. TDEC encourages TVA to include these considerations in the Final EA.

This information is discussed in Section 1.4.1.6.

If any demolition activity is anticipated as part of the site preparation, an Asbestos Demolition or Renovation Notification should be provided as needed in advance of any demolition work.[3] TDEC encourages TVA to include discussion in the Final EA relating to the need to complete appropriate notification(s) in advance of any demolition activities as required under the state of Tennessee asbestos regulations and that if Regulated Asbestos-Containing Material is identified as present or likely to be encountered during the proposed project, that appropriate measures be taken to abate the asbestos as needed.

Asbestos demolition has been added to Section 1.4.1.6.

TDEC recommends that TVA discuss anticipated emissions generated by the gasoline and diesel fueled trucks and construction equipment used. TDEC further recommends discussion of how these emissions are expected to be minimized through the use of proper maintenance, new emissions control technologies, and fuels along with the minimization of unnecessary heavy duty vehicle idling, and where possible through using newer trucks for long haul off-site transport to help mitigate emissions during activities.

Please refer to Section 3.7.2.2.

[2] This is a state-level review only and cannot be substituted for a federal agency Section 106 review/response. Additionally, a court order from Chancery Court must be obtained prior to the removal of any human graves. If human remains are encountered or accidentally uncovered by earthmoving activities, all activity within the immediate area must cease. The county coroner or medical examiner, a local law enforcement agency, and the state archaeologist's office should be notified at once (Tennessee Code Annotated 11-6-107d).

[3] For more information on TDEC's Asbestos Demolition or Renovation Notification requirements, please visit https://www.tn.gov/environment/program-areas/apc-air-pollution-control-home/apc/asbestos-information/notification-of-asbestos-demolition-or-renovation.html.

Solid Waste

TDEC recommends that the Final EA consider and explicitly reflect that any wastes associated with project construction and/or operations be managed in accordance with the Solid and Hazardous Waste Rules and Regulation of the State of Tennessee (TDEC DSWM Rule 0400 Chapters 11 and 12, respectively).

Please refer to the end of Section 3.10.2.2

Water Resources

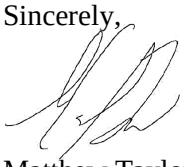
TDEC concurs with TVA that a Stormwater Construction General Permit (CGP) and Stormwater Pollution Prevention Plan (SWPPP) as well as an Aquatic Resource Alteration Permit (ARAP) will be required for this project. Additionally, the project will require a hydrologic determination to be performed by a certified hydrologic professional to identify all of the aquatic resources within the project limits of disturbance and assess the potential for any alterations to wet weather conveyances, streams, wetlands, or other aquatic resources. Much of the land implicated by the project contains hydric soils which are potentially indicative of wetlands. There will be considerable vegetation management around the panels using herbicides, manufacturer's directions should be followed when applying and application should be avoided prior to predicted rainfall events or high winds to minimize any possibility of runoff or drift. TDEC encourages TVA to include these considerations in the Final EA.

Appendix D of the EA contains this information.

Use of herbicides discussed in Section 3.3.2.2.

TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,



Matthew Taylor
Senior Policy Analyst, Office of Policy and Sustainable Practices
Tennessee Department of Environment and Conservation
Matthew.K.Taylor@tn.gov
(615) 979-2449

cc: Kendra Abkowitz, PhD, TDEC, OPSP
Ben Almassi, TDEC, DSWM
Daniel Brock, TDEC, DOA
Lacey Hardin, TDEC, APC
Tom Moss, TDEC, DWR

From: Sweatt-Essick, Jackie (FAA) <Jackie.Sweatt-Essick@faa.gov>
Sent: Wednesday, December 02, 2020 11:31 AM
To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Subject: Skyhawk Solar Project Draft EA

Hi Ashley:

I hope this email finds you and your family well. Finally, I had an opportunity to review the attached document. In the document it is concluded that the proposed solar panel project will not have adverse impact on aviation operations at the Everett Stewart Regional Airport which is located adjacent to the proposed project site. One question that I have for you is that in making that determination was the FAA's Airport Solar Guide (2018) used to arrive at this determination. If not, I strongly recommend that this document be reviewed and the analysis methodology outlined in the document be used to make sure that your determination is in fact correct. The link to the document is faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf.

Please refer to section 3.5.2.2 of the Final EA.

Thanks for the opportunity to review the document.

Best,

Jackie Sweatt-Essick
Environmental Program Manager
FAA
Airports Division
Southern Region
(404) 213-0087

Susemihl, Robyn S

From: Clay Cecil <claycecil@gmail.com>
Sent: Saturday, November 7, 2020 2:43 PM
To: Pilakowski, Ashley Anne
Subject: Solar

This is a smart investment. It’s time this area started investing in solar energy!

Comment noted.

Thanks!

Clay Cecil