

## **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 stream, 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.

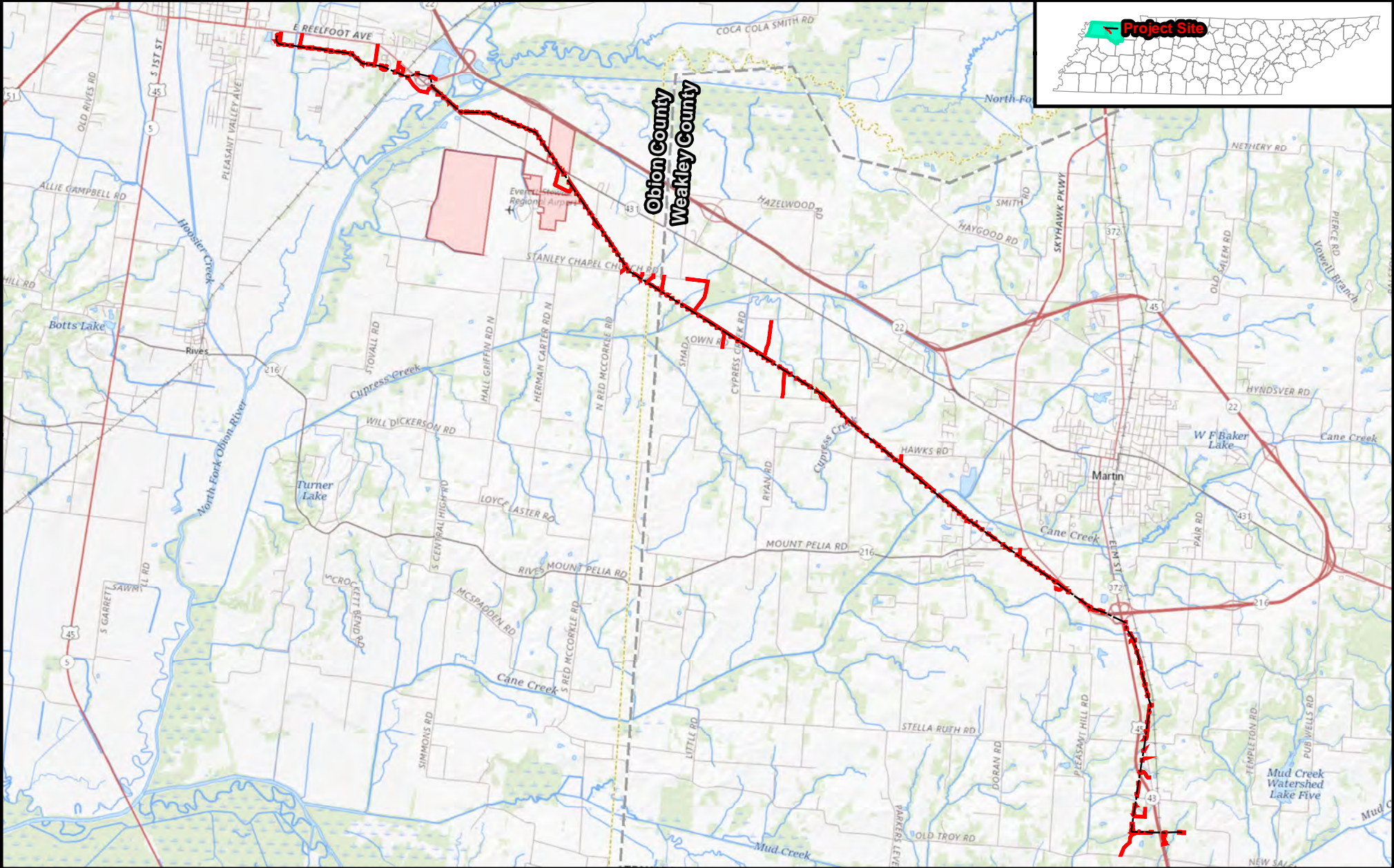
#### References

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 ROW MAPPING**





Project Site

Existing Weakley to Union City 161 kV Transmission Line

Skyhawk Solar Project Area

County Boundary

NORTH

0

0.8

1.6

Miles

BURNS

MCDONNELL

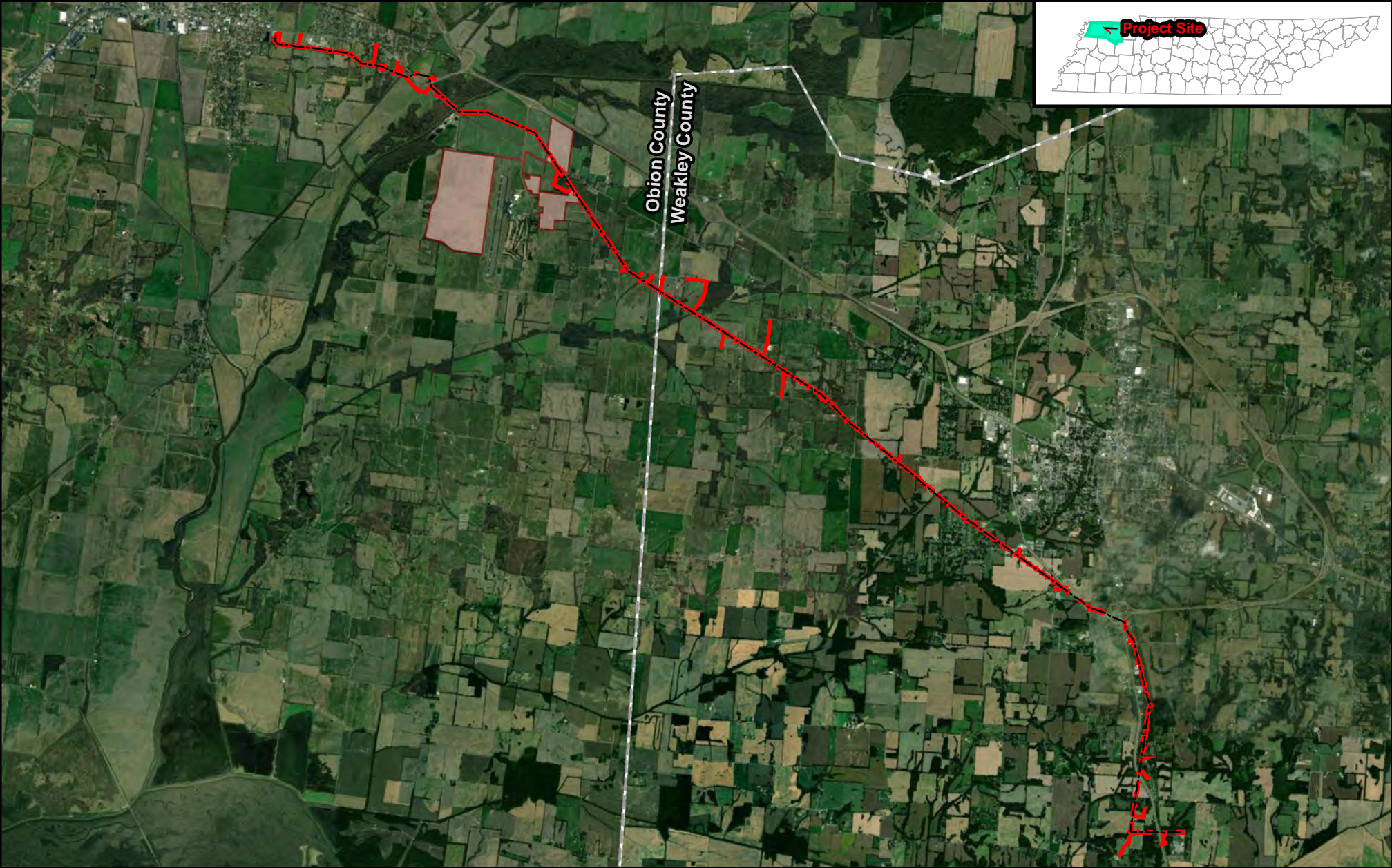
General Vicinity Map

Transmission Line Upgrades

Skyhawk Solar Project

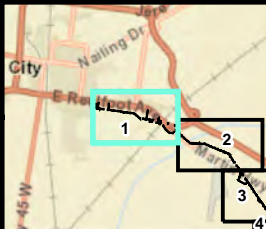
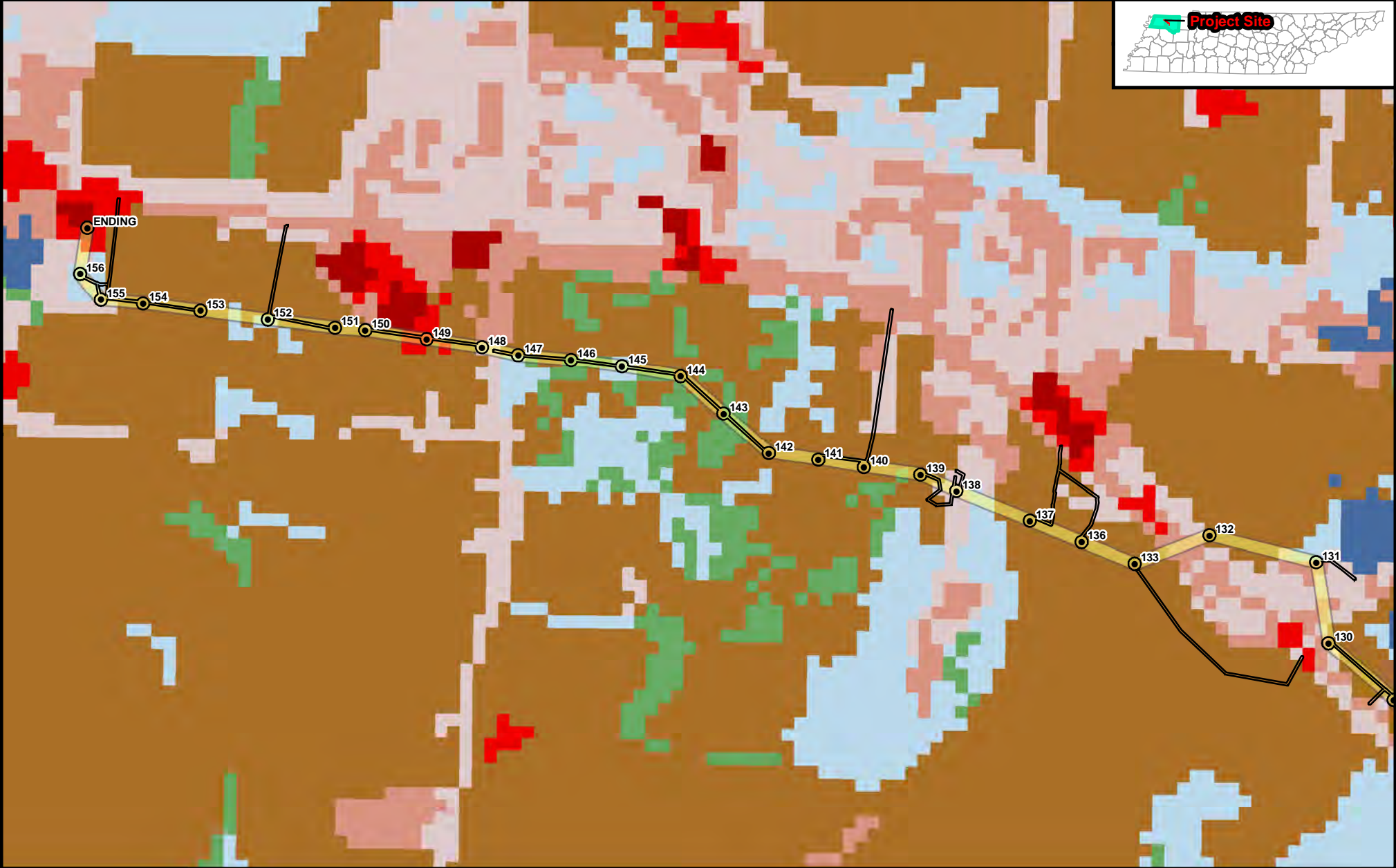
Obion and Weakley Counties, TN





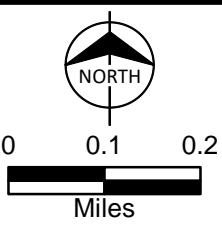
 Project Site	 0 0.8 1.6 Miles		<p>General Vicinity Map Transmission Line Upgrades Skyhawk Solar Project Obion and Weakley Counties, TN</p>
 Existing Weakley to Union City 161 kV Transmission Line			
 Skyhawk Solar Project Area			
 County Boundary			



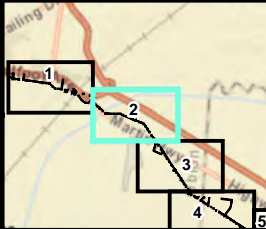
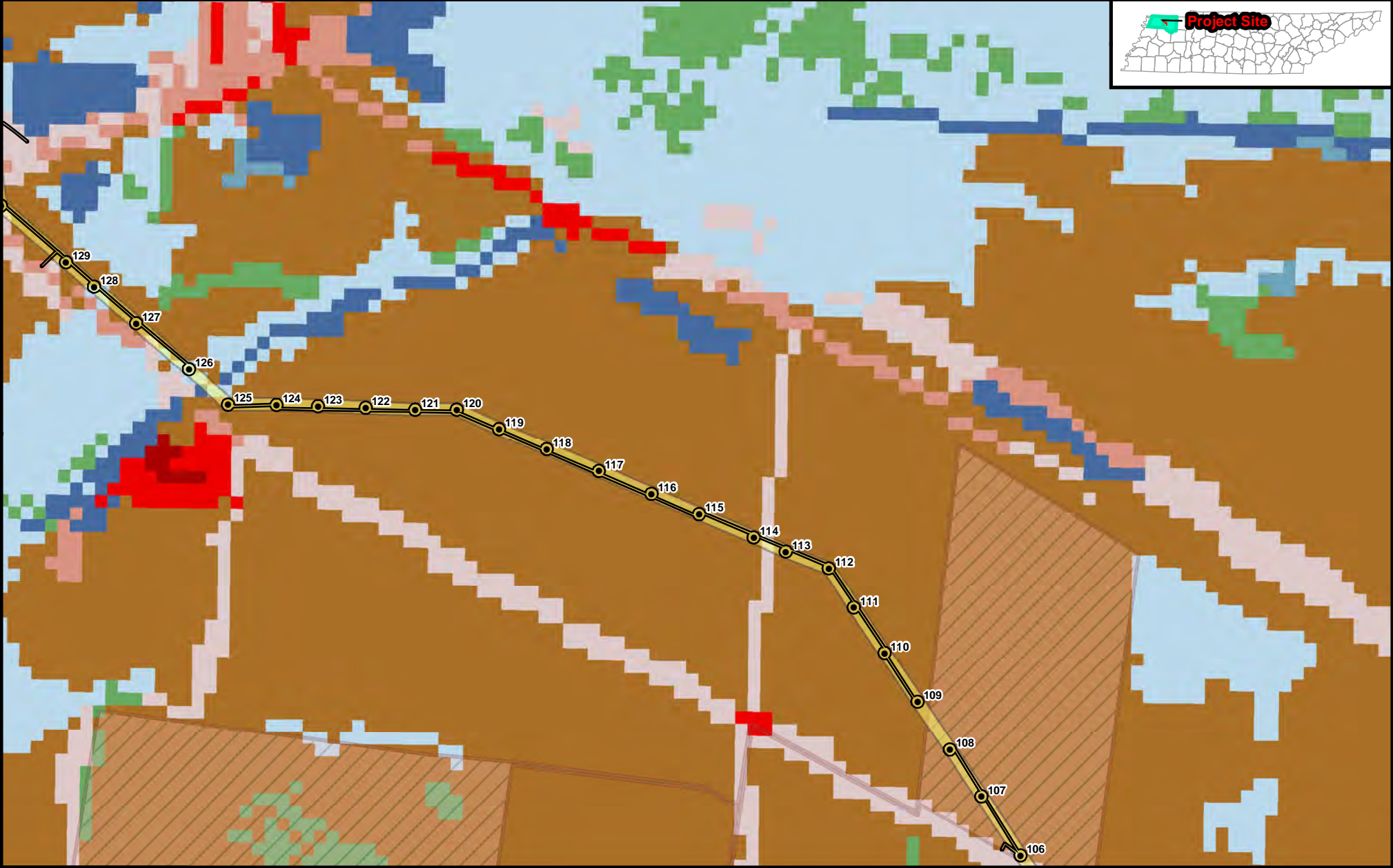


- Project Site
- Existing Structure
- Weakley to Union City 161 kV TL ROW
- County Boundary
- Open Water
- Developed, Open Space
- Developed, Low Intensity

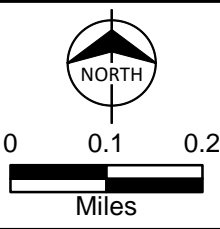
- Developed, Medium Intensity
- Developed, High Intensity
- Deciduous Forest
- Cultivated Crops
- Woody Wetlands



Land Use Land Cover Map  
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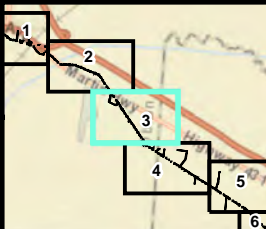
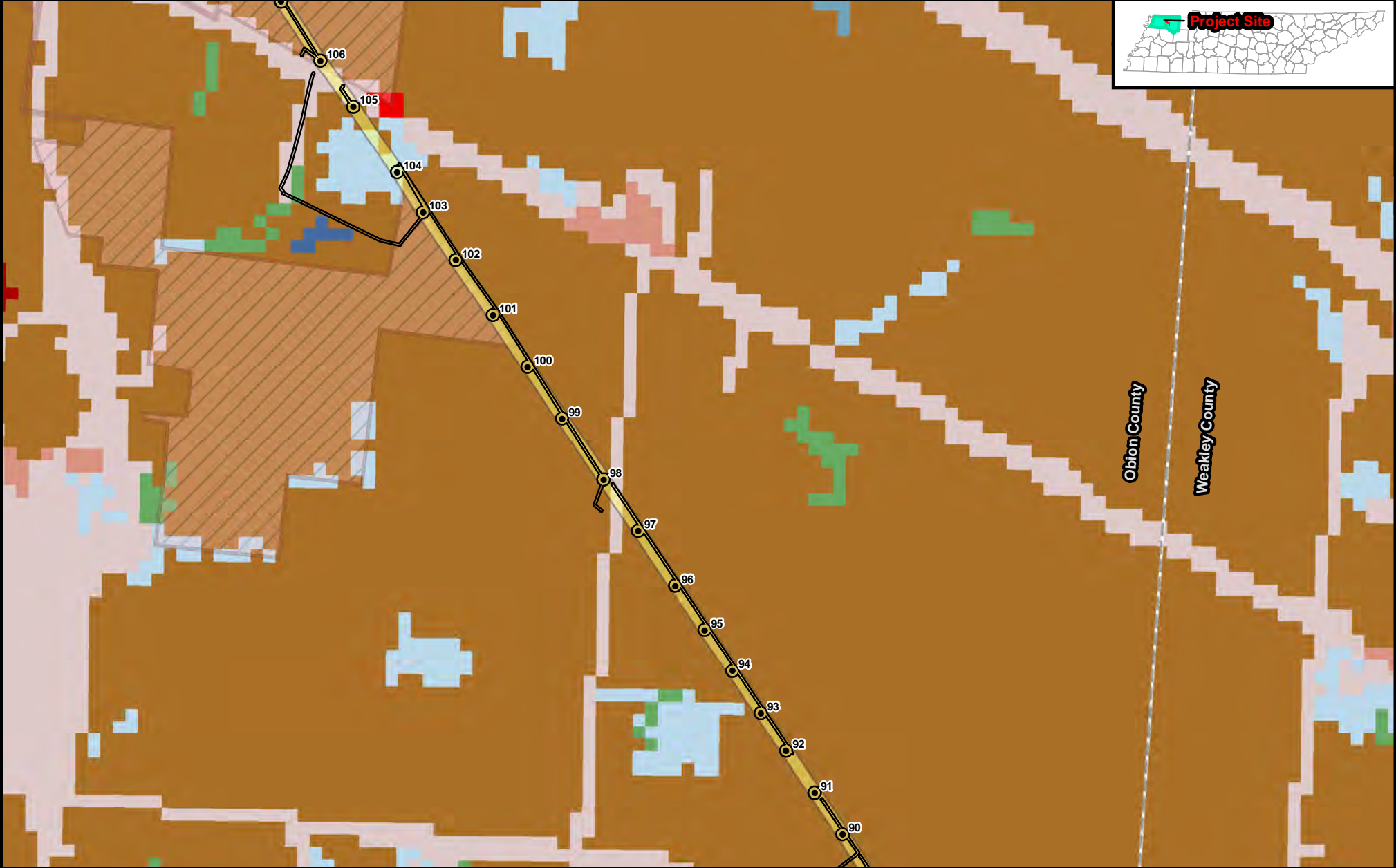


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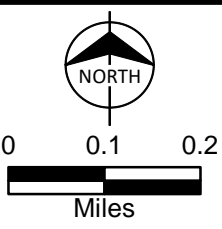


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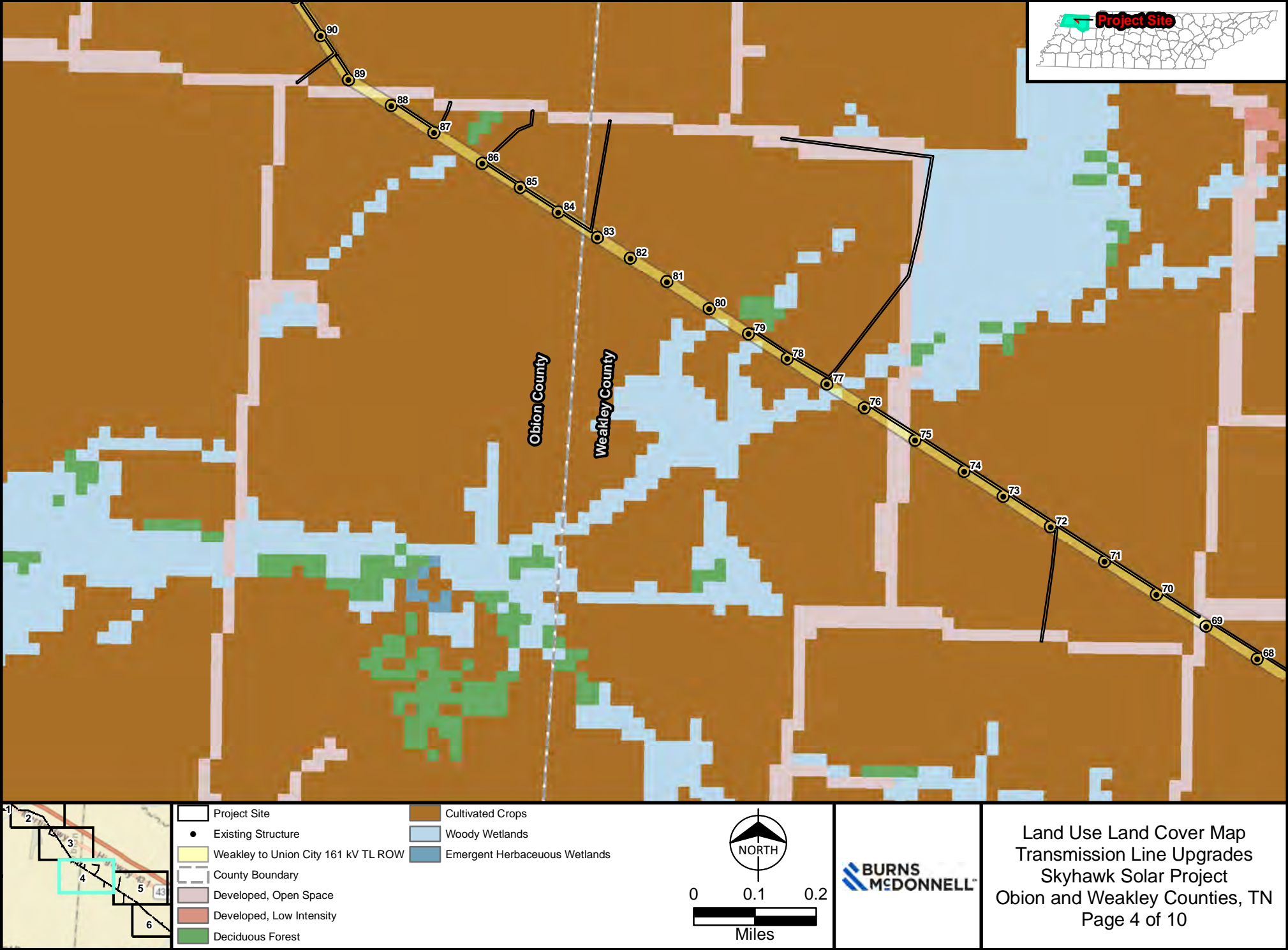




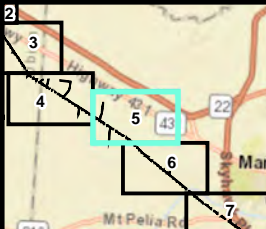
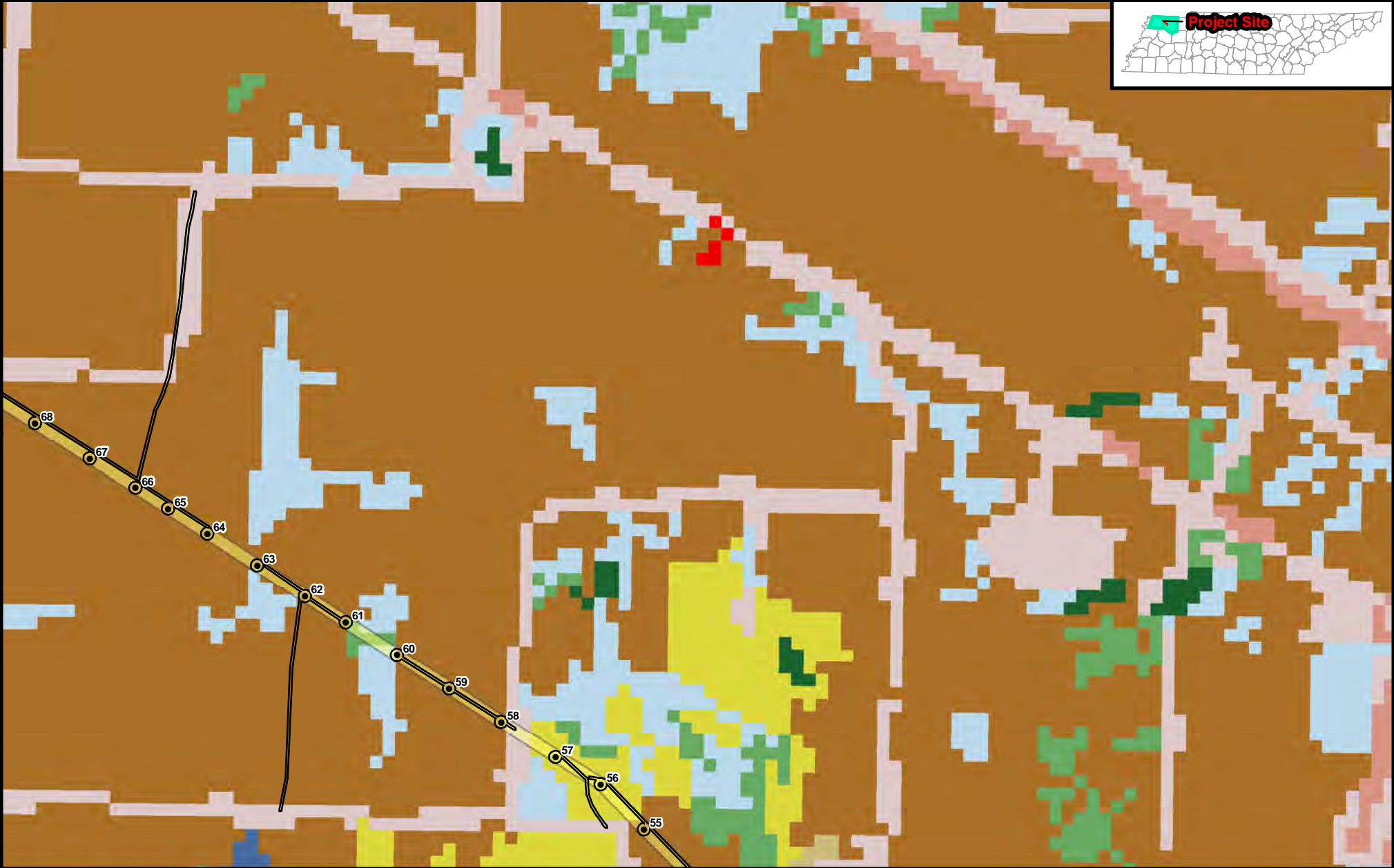
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| Project Site                        | Developed, Low Intensity     |
| Existing Structure                  | Developed, Medium Intensity  |
| Weakley to Union City 161 kV TL ROW | Developed, High Intensity    |
| Skyhawk Solar Parcels               | Deciduous Forest             |
| County Boundary                     | Cultivated Crops             |
| Open Water                          | Woody Wetlands               |
| Developed, Open Space               | Emergent Herbaceous Wetlands |



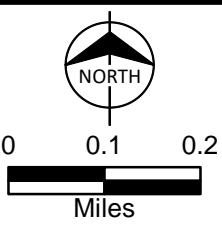
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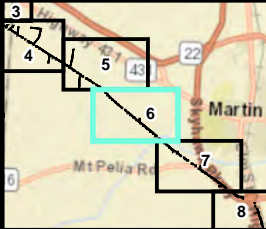
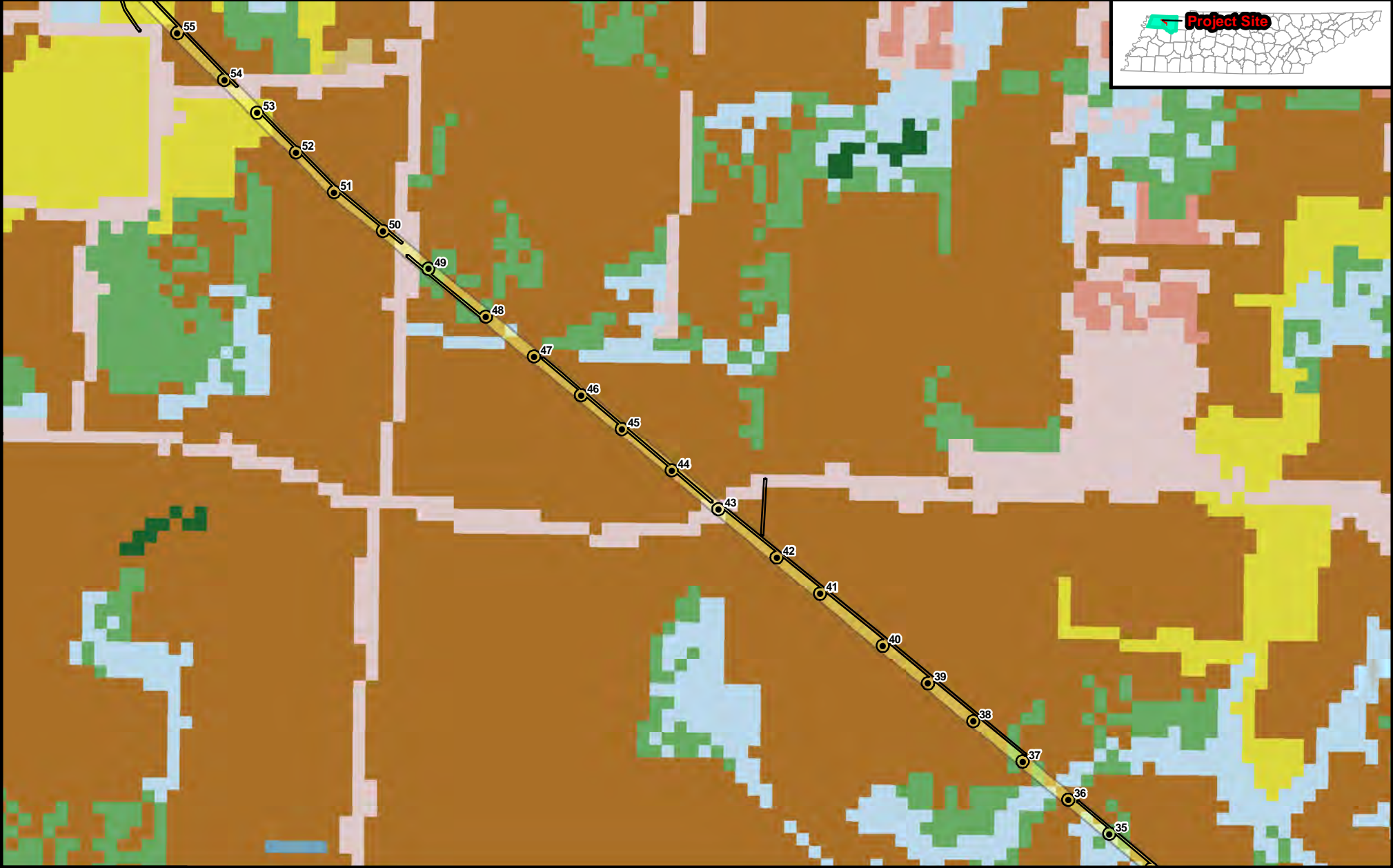




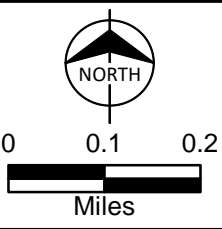
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| Project Site                        | Developed, Medium Intensity |
| Existing Structure                  | Deciduous Forest            |
| Weakley to Union City 161 kV TL ROW | Evergreen Forest            |
| County Boundary                     | Shrub/Scrub                 |
| Open Water                          | Hay/Pasture                 |
| Developed, Open Space               | Cultivated Crops            |
| Developed, Low Intensity            | Woody Wetlands              |



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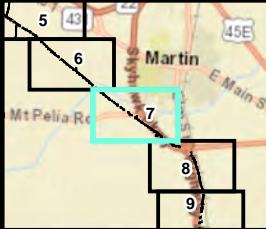
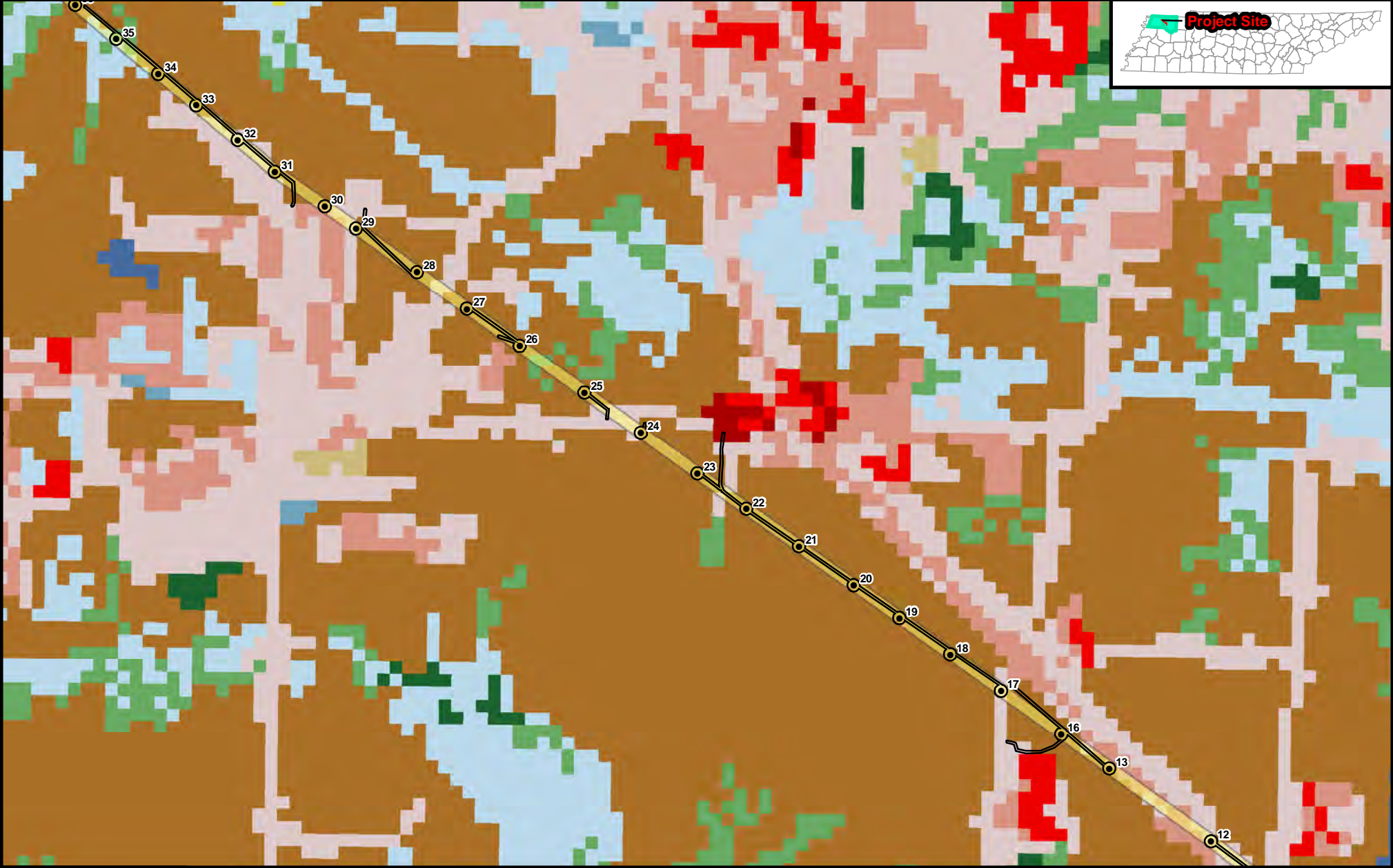


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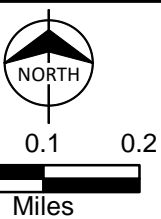


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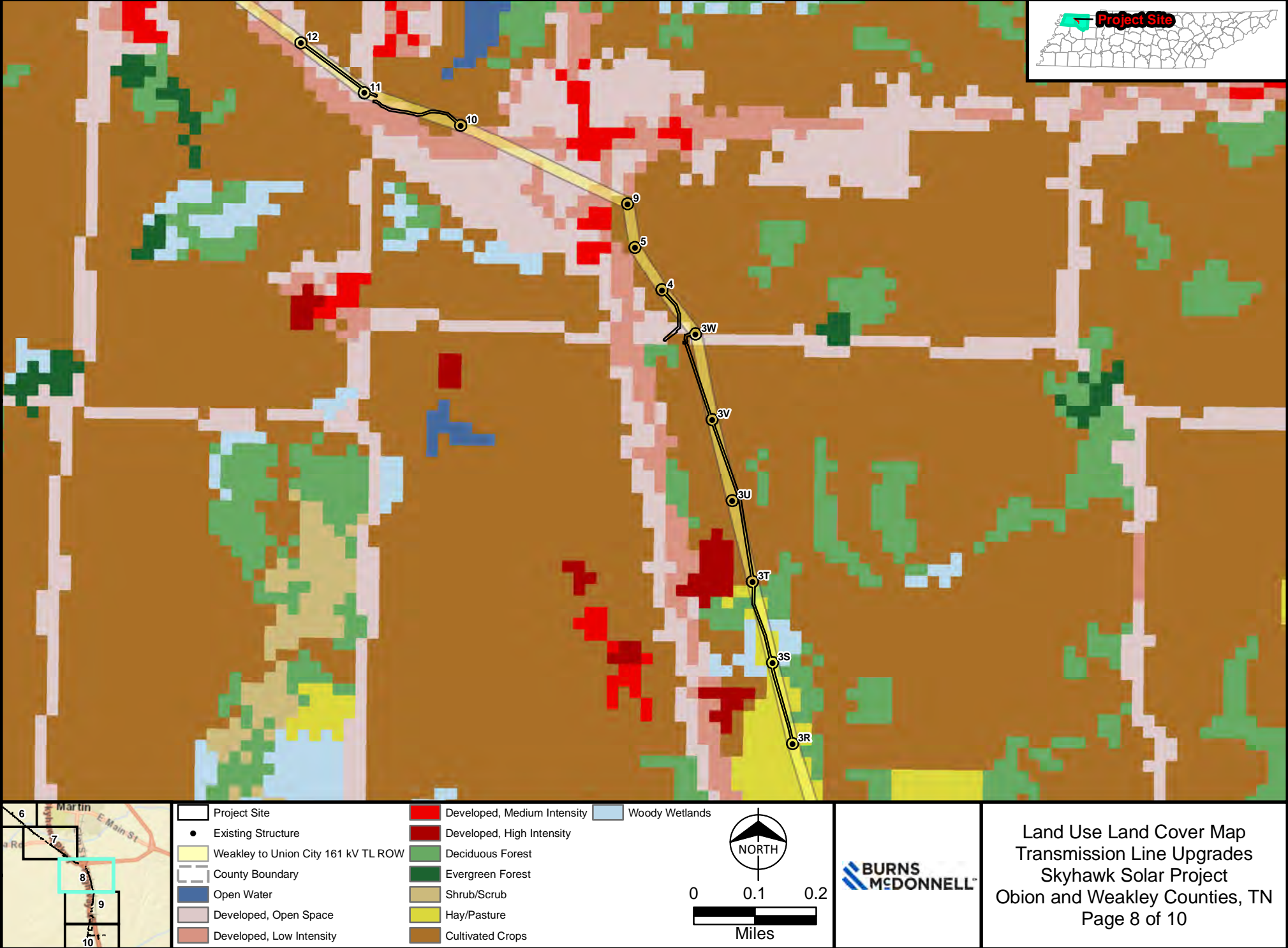


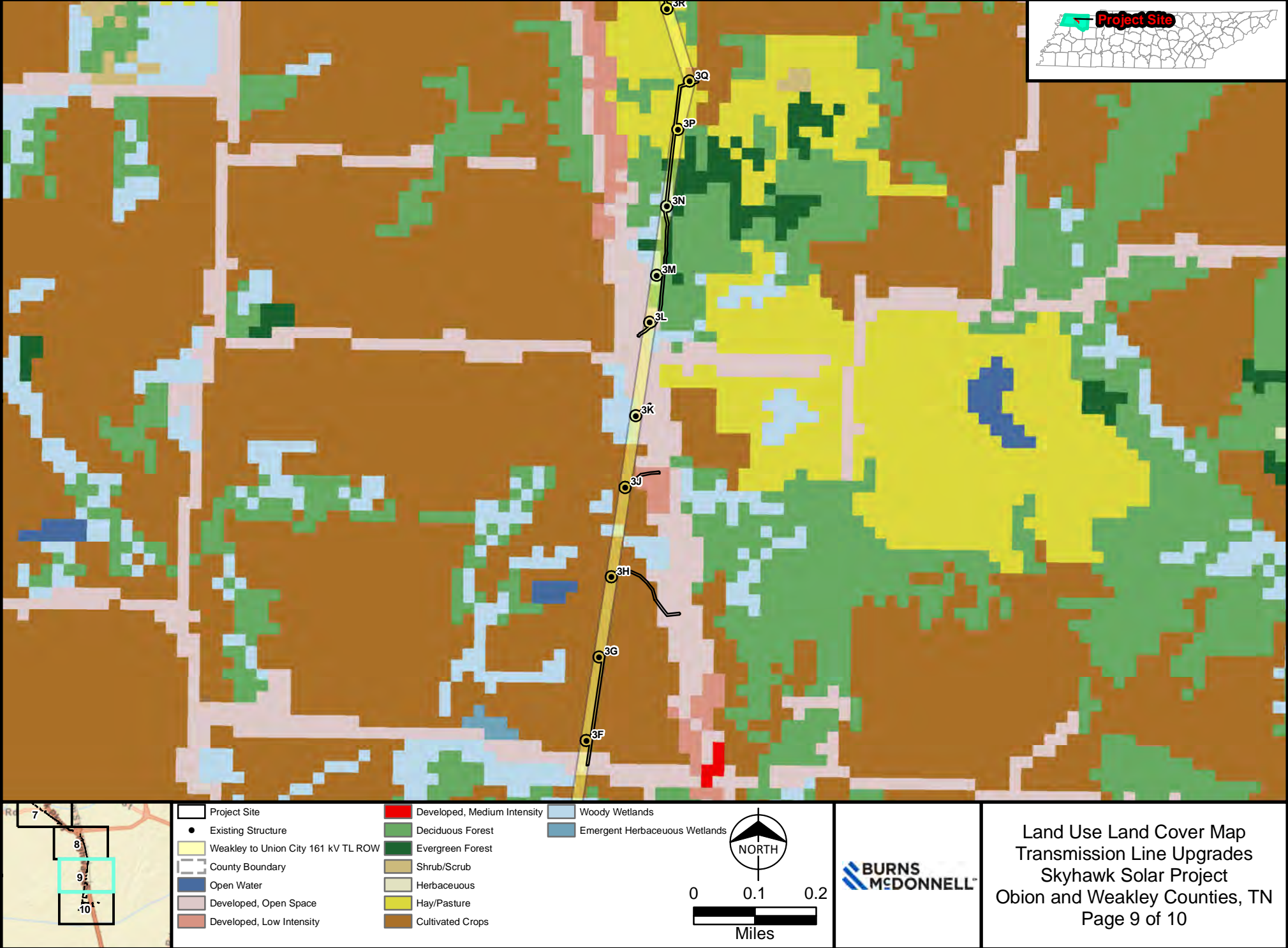
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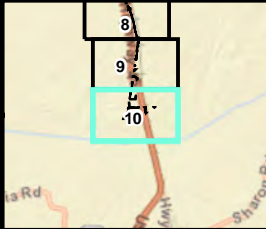
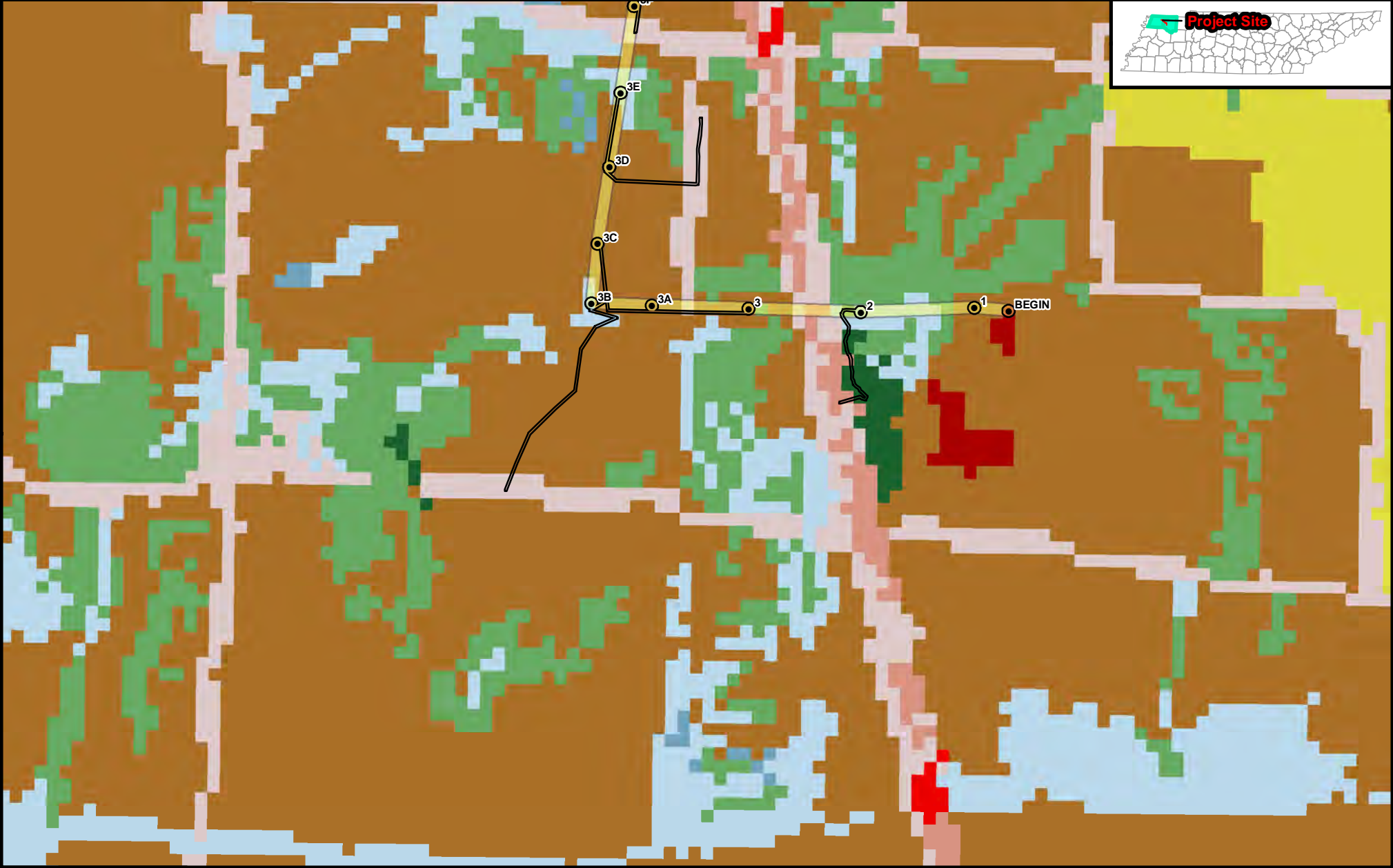
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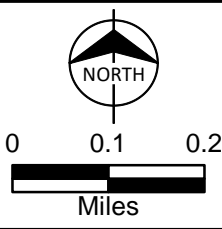






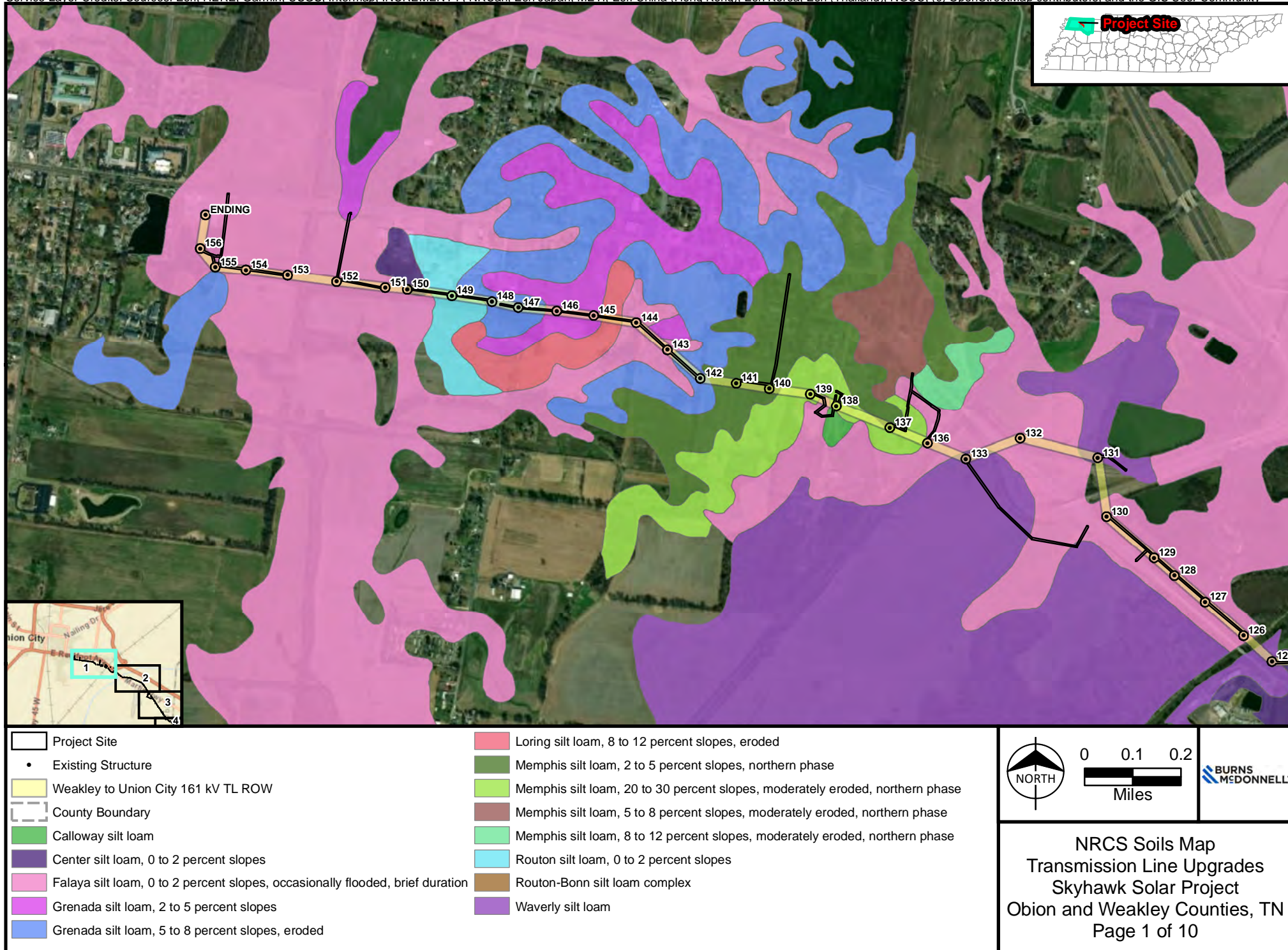


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| Project Site                        | Developed, High Intensity    |
| Existing Structure                  | Deciduous Forest             |
| Weakley to Union City 161 kV TL ROW | Evergreen Forest             |
| County Boundary                     | Hay/Pasture                  |
| Developed, Open Space               | Cultivated Crops             |
| Developed, Low Intensity            | Woody Wetlands               |
| Developed, Medium Intensity         | Emergent Herbaceous Wetlands |

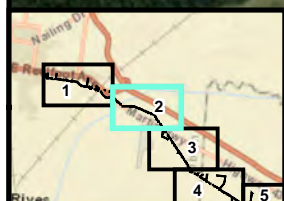
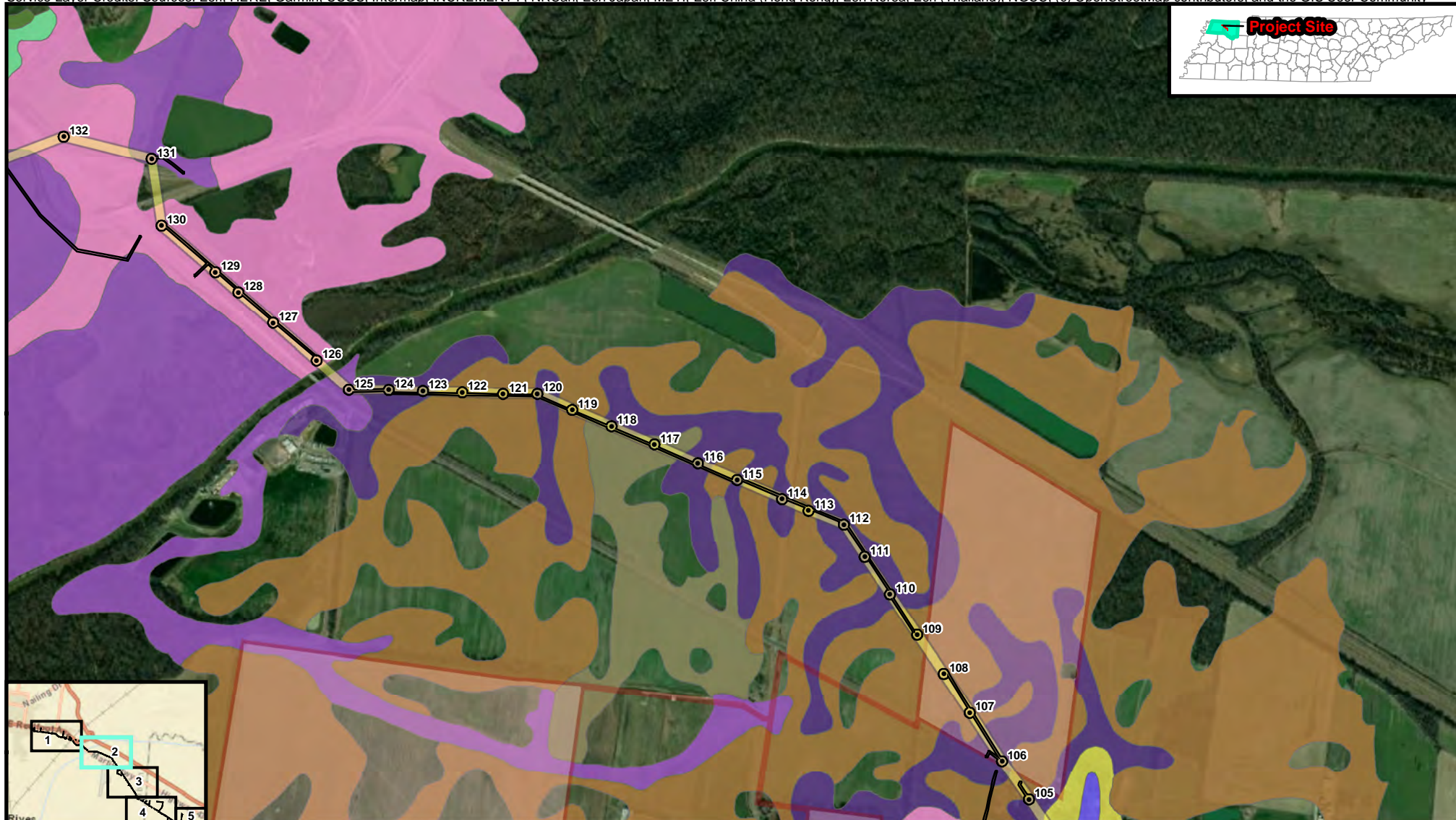


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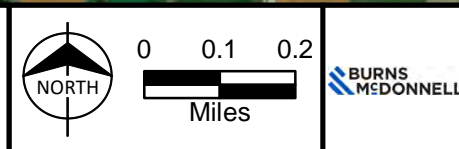






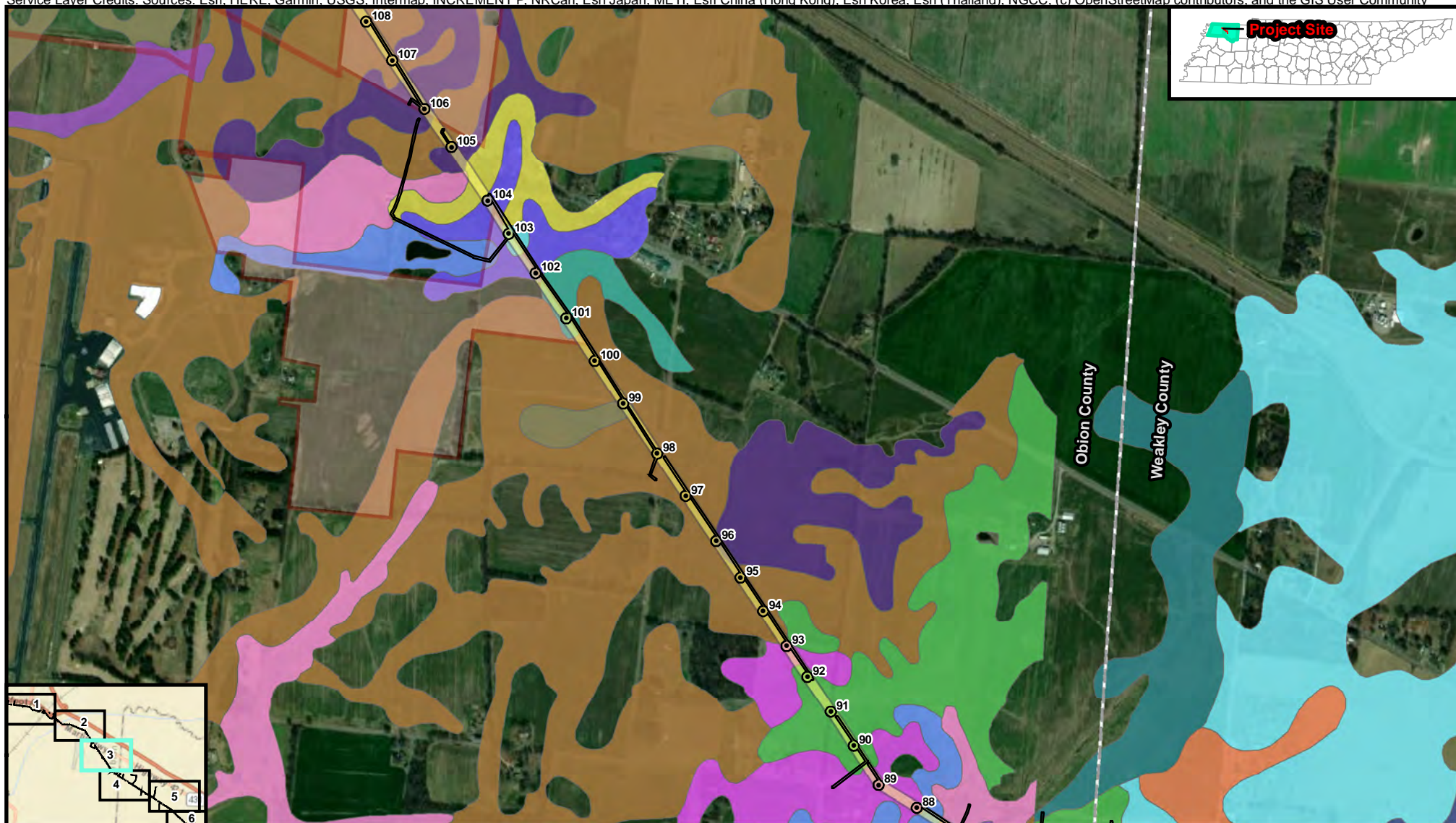


Project Site	Loring silt loam, 2 to 5 percent slopes
Existing Structure	Memphis silt loam, 2 to 5 percent slopes, northern phase
Weakley to Union City 161 kV TL ROW	Memphis silt loam, 8 to 12 percent slopes, moderately eroded, northern phase
Skyhawk Solar Parcels	Routon-Bonn silt loam complex
County Boundary	Waverly silt loam
Center silt loam, 0 to 2 percent slopes	
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	
Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase	
Fountain silt loam	

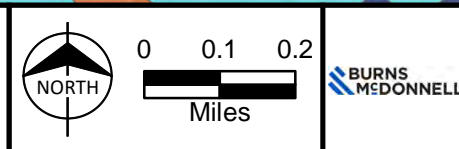


NRCS Soils Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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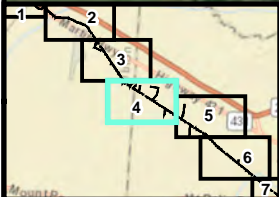
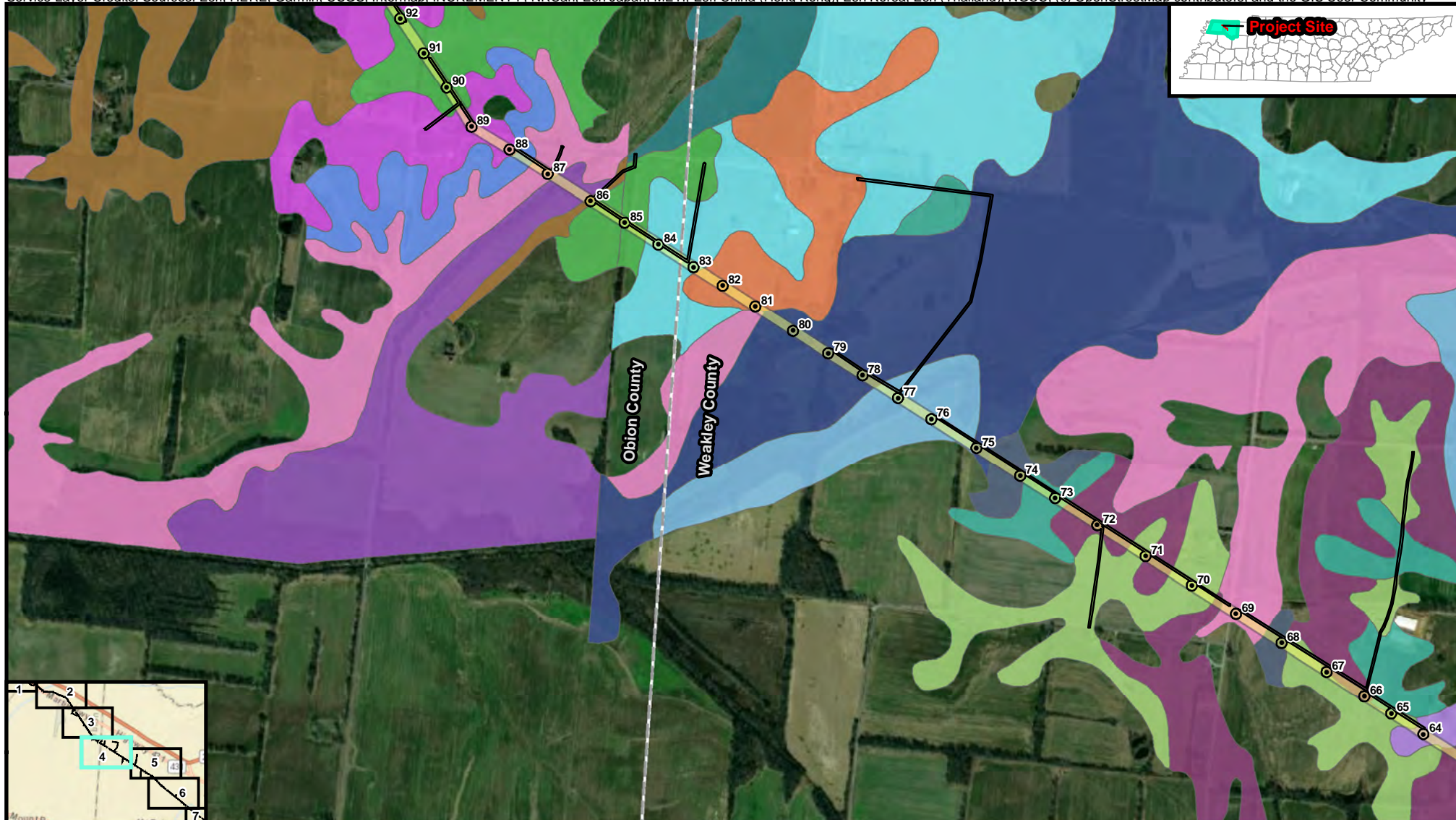


Project Site	Fountain silt loam
Existing Structure	Grenada silt loam, 2 to 5 percent slopes
Weakley to Union City 161 kV TL ROW	Grenada silt loam, 2 to 5 percent slopes, eroded
Skyhawk Solar Parcels	Grenada silt loam, 5 to 8 percent slopes, eroded
County Boundary	Loring silt loam, 2 to 5 percent slopes
Calloway silt loam	Routon 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 3 percent slopes	Waverly silt loam
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	Waverly silt loam, rarely flooded
Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase	Waverly, Rosebloom silt loams and Frequently flooded soils



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Project Site	Grenada silt loam, 5 to 8 percent slopes, eroded
Existing Structure	Grenada silt loam, 5 to 8 percent slopes, severely eroded
Weakley to Union City 161 kV TL ROW	Loring silt loam, 2 to 5 percent slopes, eroded
County Boundary	Loring silt loam, 5 to 8 percent slopes, severely eroded
Calloway silt loam	Loring silt loam, 8 to 12 percent slopes, severely eroded
Center silt loam, 0 to 3 percent slopes	Routon silt loam, 0 to 2 percent slopes
Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	Routon-Bonn silt loam complex
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	Waverly silt loam
Grenada silt loam, 2 to 5 percent slopes	Waverly silt loam, rarely flooded
Grenada silt loam, 2 to 5 percent slopes, eroded	Waverly, Rosebloom silt loams and Frequently flooded soils

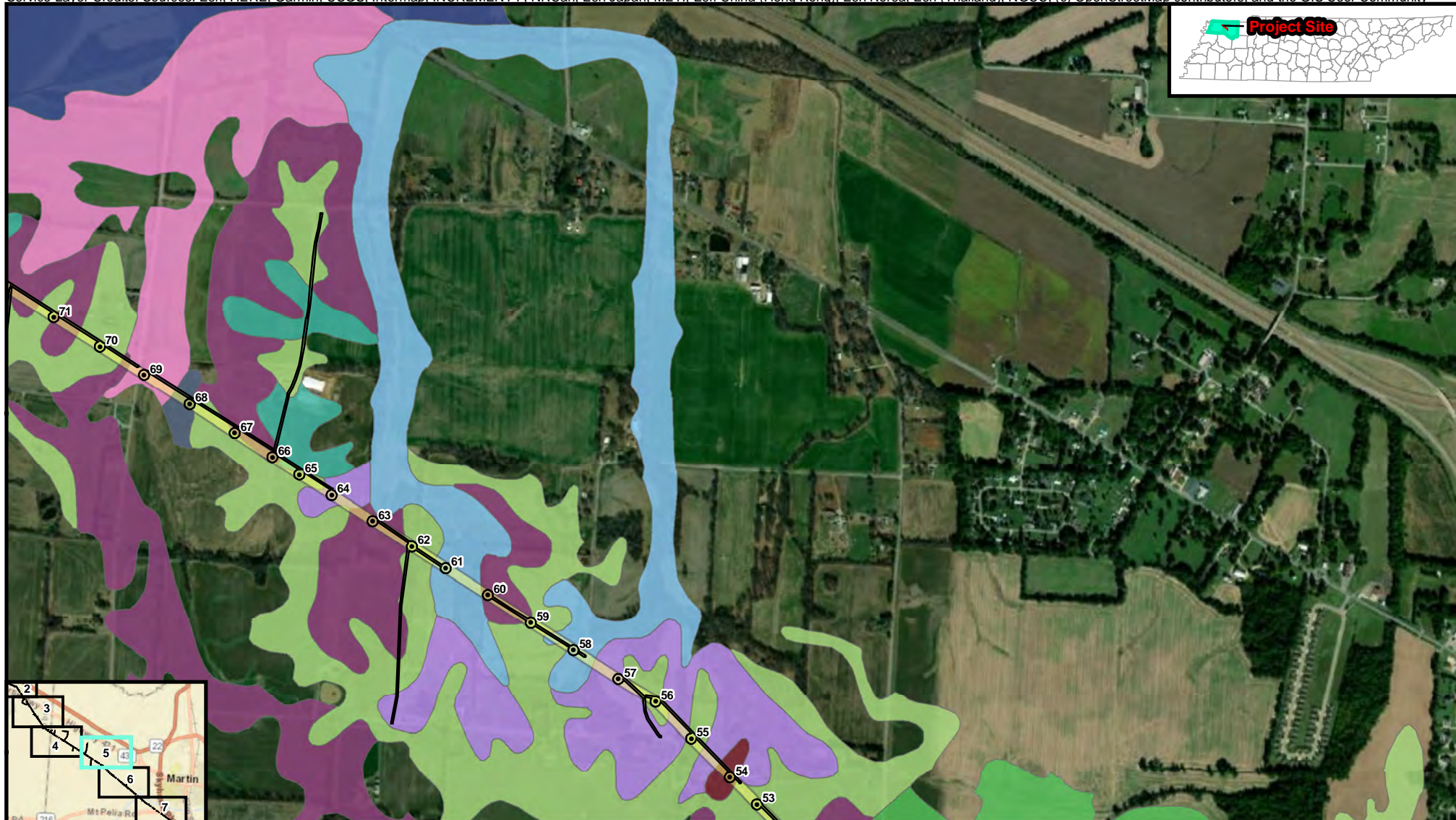


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Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- Weakley to Union City 161 kV TL ROW
- County Boundary
- Calloway silt loam
- 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, 2 to 5 percent slopes, moderately eroded, northern phase
- Grenada silt loam, 2 to 5 percent slopes, eroded

- Grenada 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, 8 to 12 percent slopes, severely eroded
- Waverly, Rosebloom silt loams and Frequently flooded soils

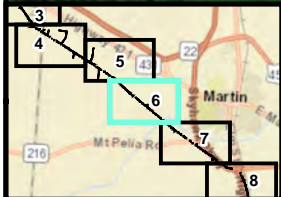
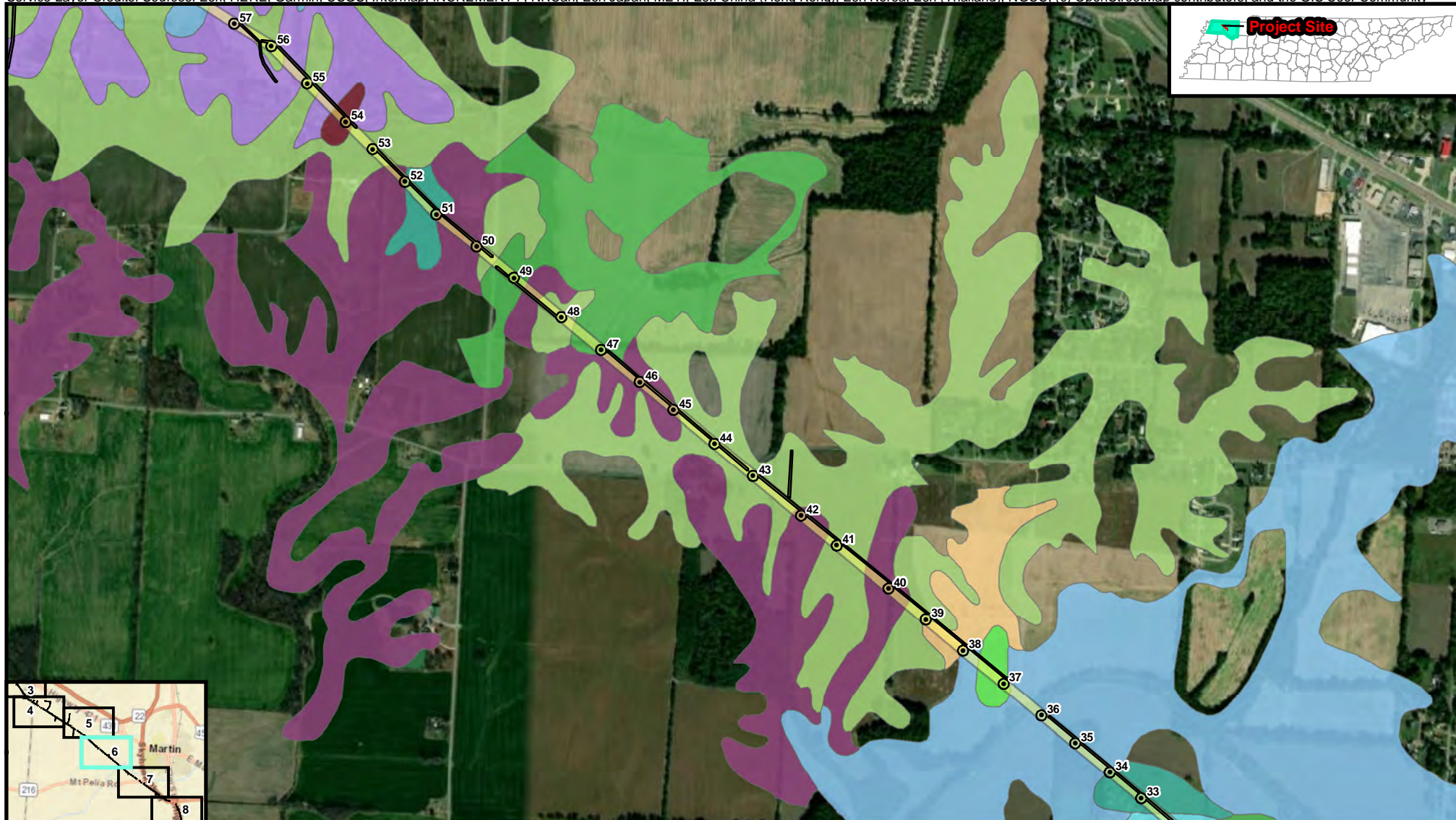


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NRCS Soils Map  
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Project Site	Loring silt loam, 2 to 5 percent slopes, eroded
Existing Structure	Loring silt loam, 5 to 8 percent slopes, severely eroded
Weakley to Union City 161 kV TL ROW	Loring silt loam, 8 to 12 percent slopes, severely eroded
County Boundary	Ochlockonee loam, occasionally flooded
Calloway silt loam	Routon silt loam, 0 to 2 percent slopes
Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	
Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase	
Grenada silt loam, 2 to 5 percent slopes, eroded	
Lexington silt loam, 12 to 20 percent slopes, severely eroded	

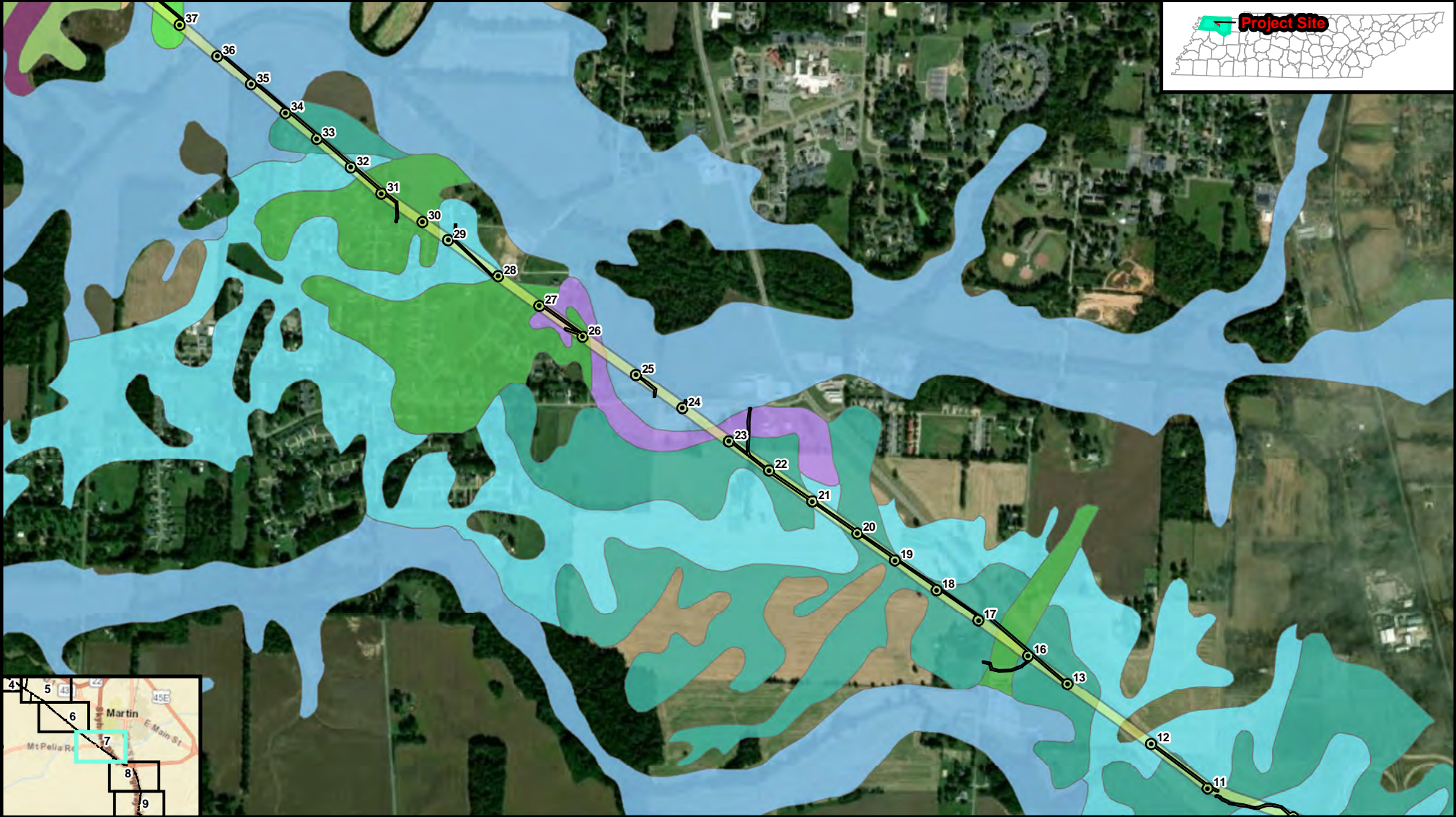


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NRCS Soils Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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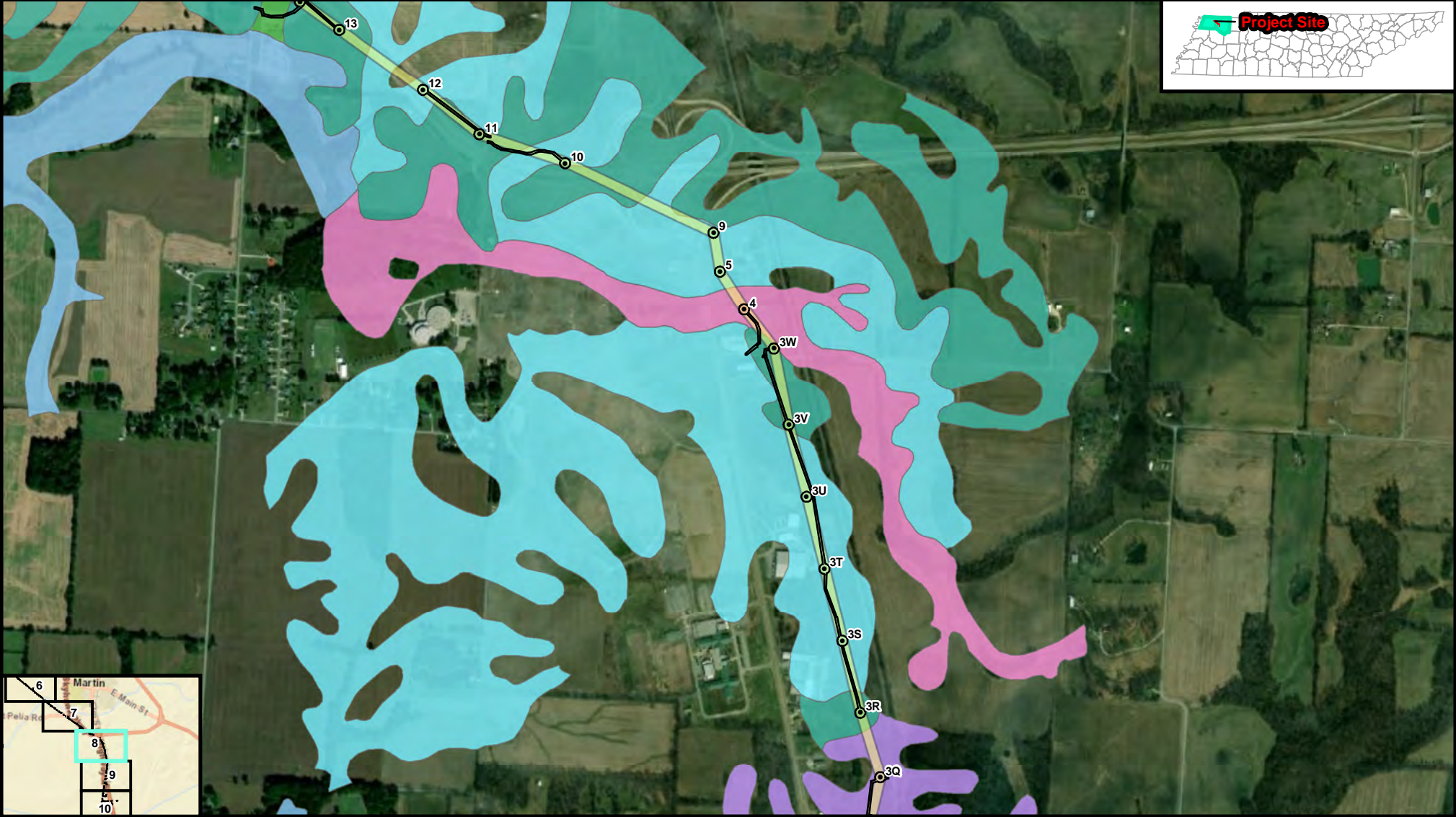




Project Site	Loring silt loam, 5 to 8 percent slopes, severely eroded
Existing Structure	Loring silt loam, 8 to 12 percent slopes, severely eroded
Weakley to Union City 161 kV TL ROW	Ochlockonee loam, occasionally flooded
County Boundary	Routon silt loam, 0 to 2 percent slopes
Calloway silt loam	
Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	
Grenada silt loam, 2 to 5 percent slopes, eroded	
Lexington silt loam, 12 to 20 percent slopes, severely eroded	
Loring silt loam, 2 to 5 percent slopes, eroded	

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Transmission Line Upgrades  
Skyhawk Solar Project  
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Project Site

•

Existing Structure

Weakley to Union City 161 kV TL ROW

County Boundary

Calloway silt loam

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Grenada silt loam, 2 to 5 percent slopes, eroded

Loring silt loam, 8 to 12 percent slopes, severely eroded

Routon silt loam, 0 to 2 percent slopes

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NRCS Soils Map

Transmission Line Upgrades

Skyhawk Solar Project

Obion and Weakley Counties, TN

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- Project Site
- Existing Structure
- Weakley to Union City 161 kV TL ROW
- County Boundary
- Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
- Grenada silt loam, 2 to 5 percent slopes, eroded
- Grenada 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, 8 to 12 percent slopes, severely eroded
- Routon silt loam, 0 to 2 percent slopes

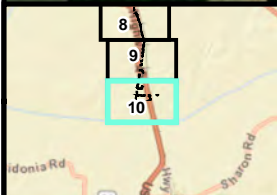
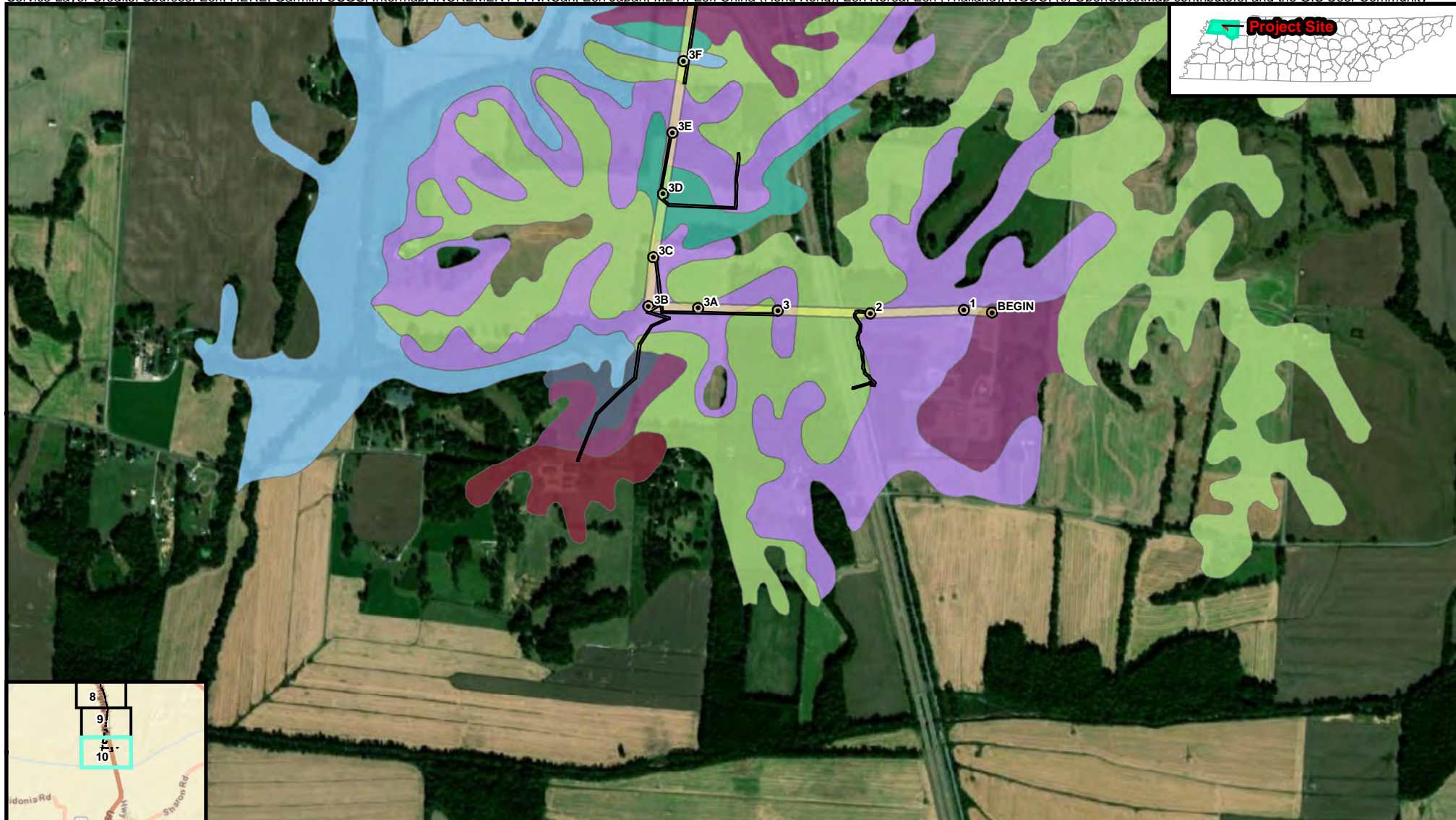


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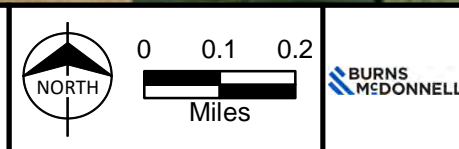
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NRCS Soils Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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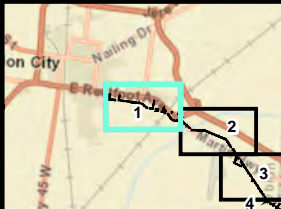


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| <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Project Site</li> <li>• Existing Structure</li> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Weakley to Union City 161 kV TL ROW</li> <li><span style="border-top: 1px dashed black; display: inline-block; width: 20px; height: 1px; margin-right: 5px;"></span> County Boundary</li> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration</li> <li><span style="background-color: red; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase</li> <li><span style="background-color: teal; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Grenada silt loam, 2 to 5 percent slopes, eroded</li> <li><span style="background-color: darkblue; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Grenada silt loam, 5 to 8 percent slopes, severely eroded</li> <li><span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Loring silt loam, 2 to 5 percent slopes, eroded</li> </ul> | <ul style="list-style-type: none"> <li><span style="background-color: purple; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Loring silt loam, 5 to 8 percent slopes, severely eroded</li> <li><span style="background-color: magenta; border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Loring silt loam, 8 to 12 percent slopes, severely eroded</li> </ul> |
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**NRCS Soils Map**  
**Transmission Line Upgrades**  
**Skyhawk Solar Project**  
**Obion and Weakley Counties, TN**  
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- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmission Line ROW

All areas are prime farmland  
Not prime farmland

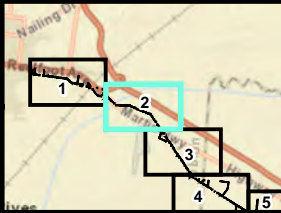
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NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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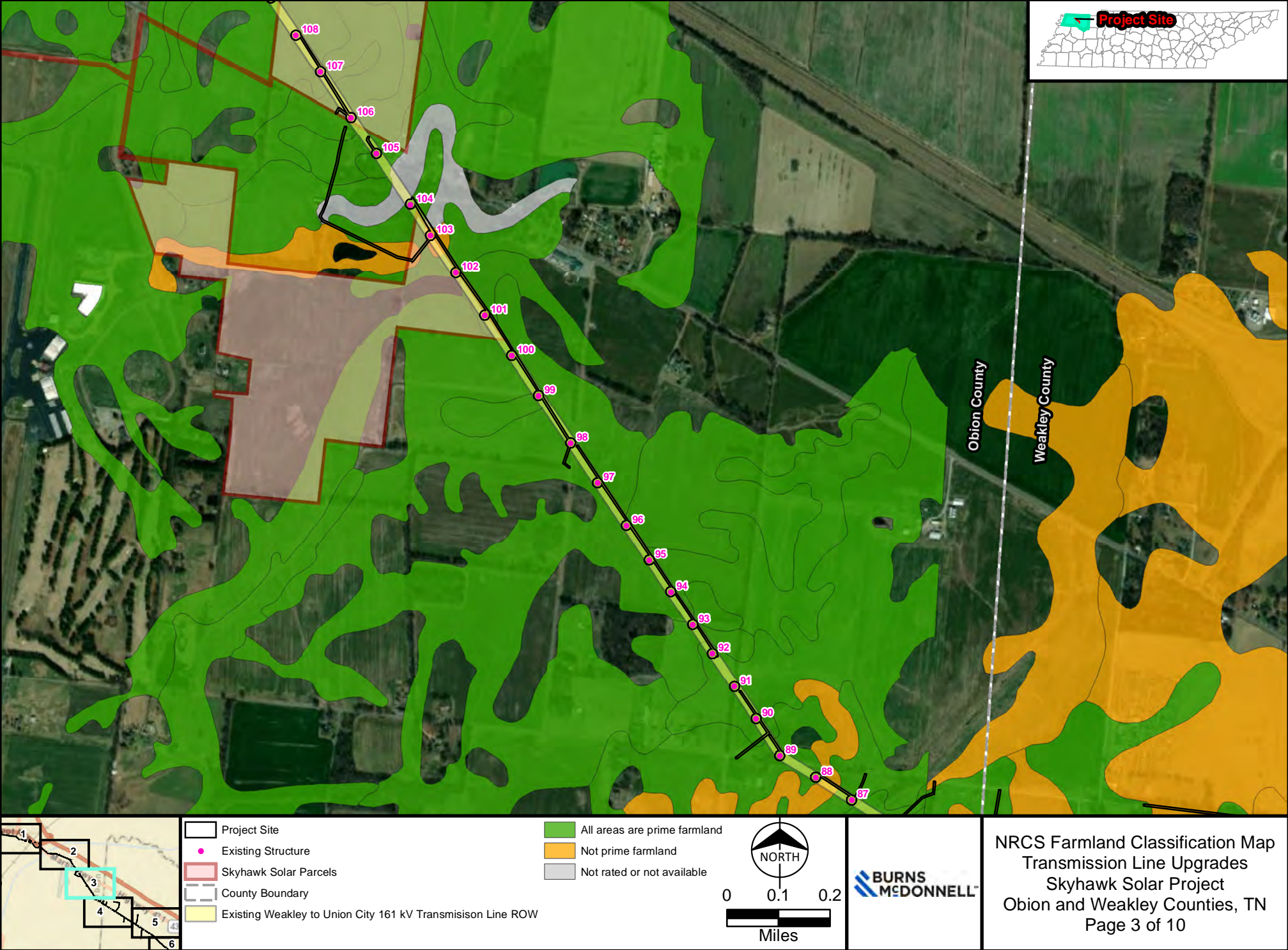




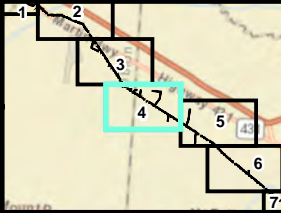
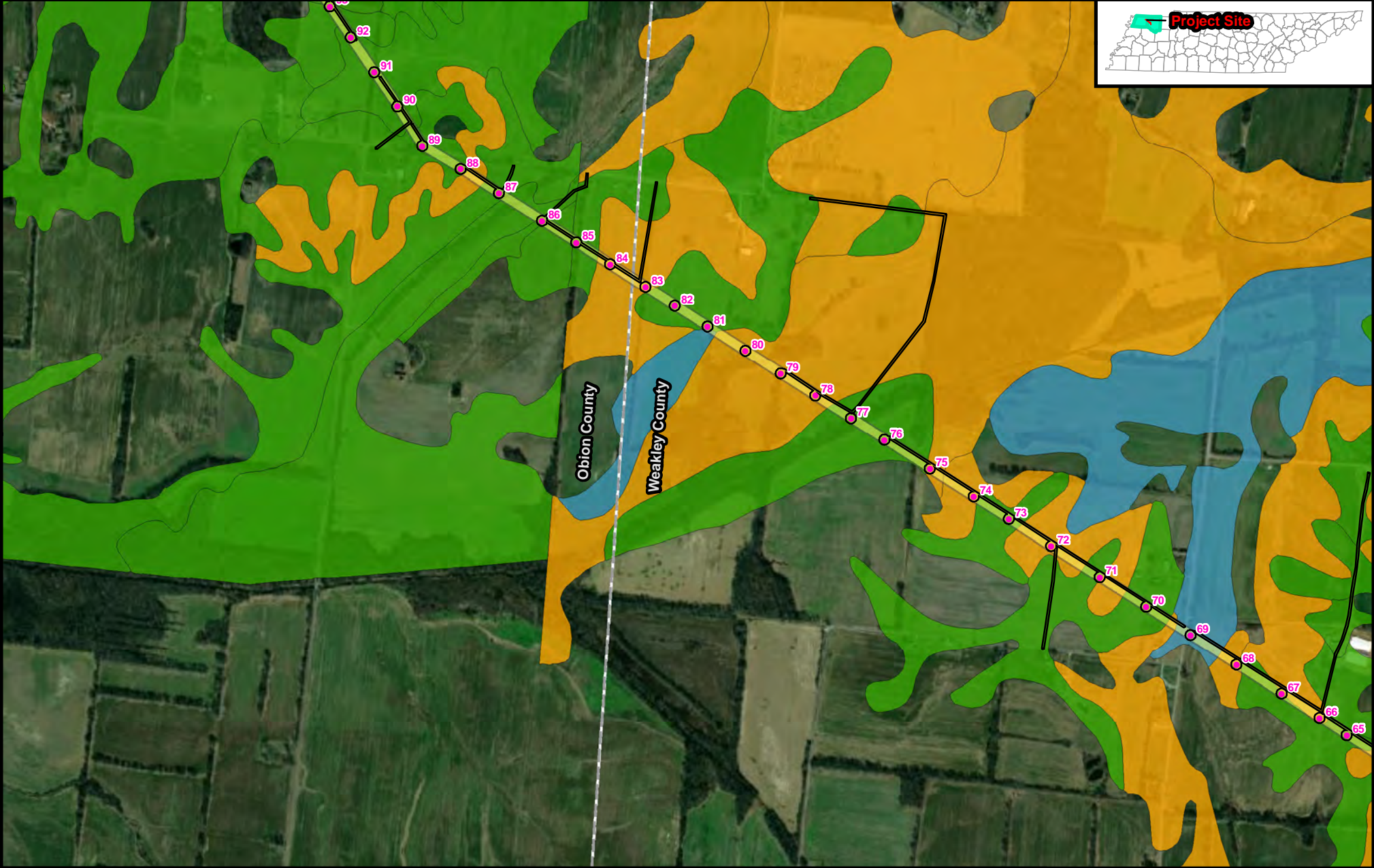
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NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmission Line ROW

Legend for farmland classification:

- All areas are prime farmland
- Not prime farmland
- Prime farmland if drained

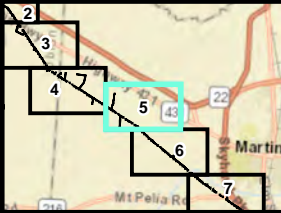
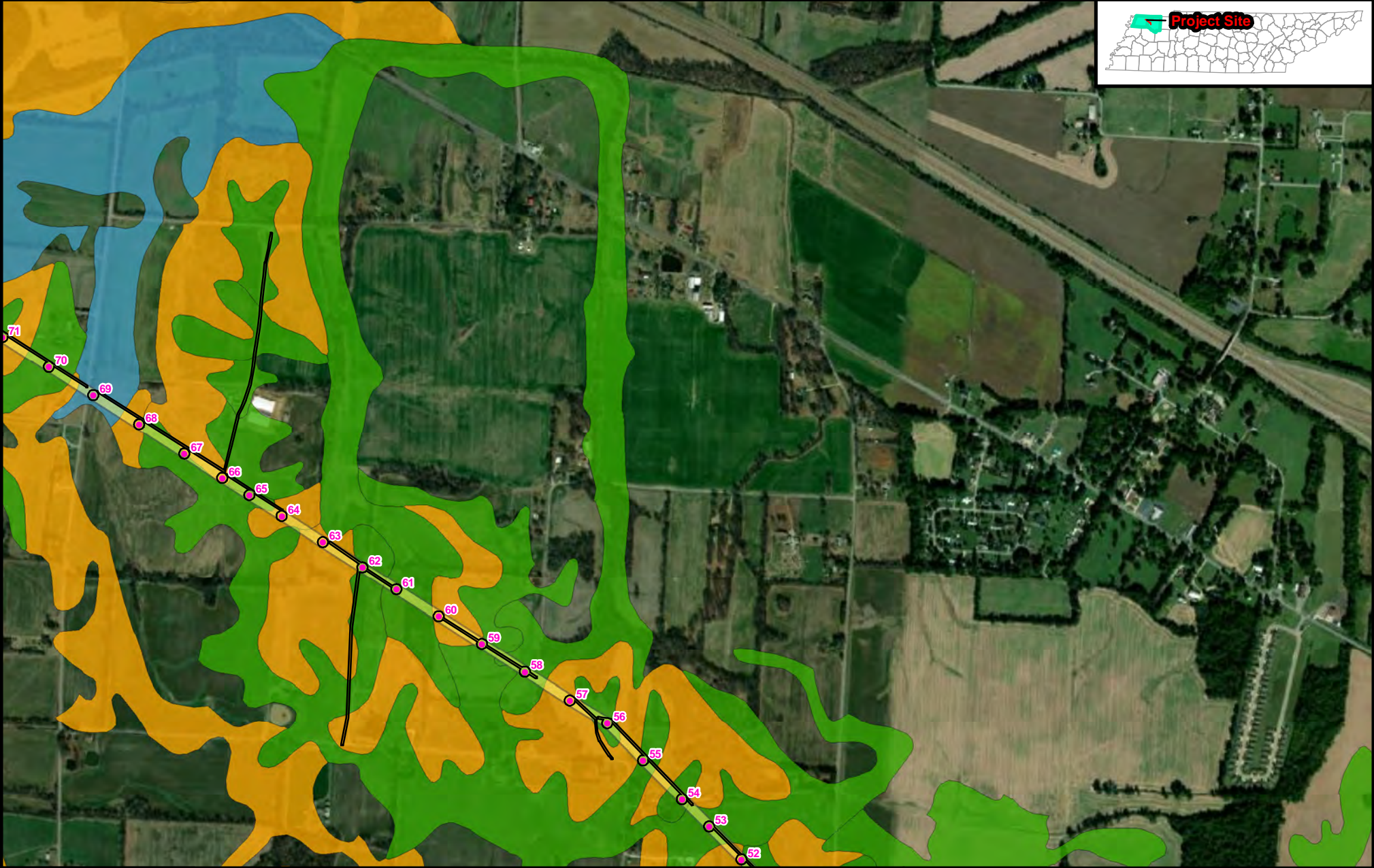
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North arrow pointing up.



NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmission Line ROW

All areas are prime farmland  
Not prime farmland  
Prime farmland if drained

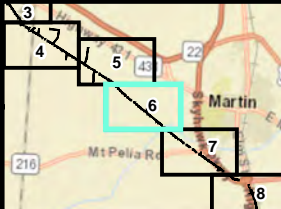
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NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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Project Site

Existing Structure

County Boundary

Existing Weakley to Union City 161 kV Transmisison Line ROW

All areas are prime farmland

Not prime farmland

NORTH

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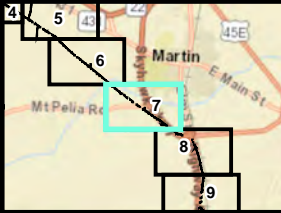
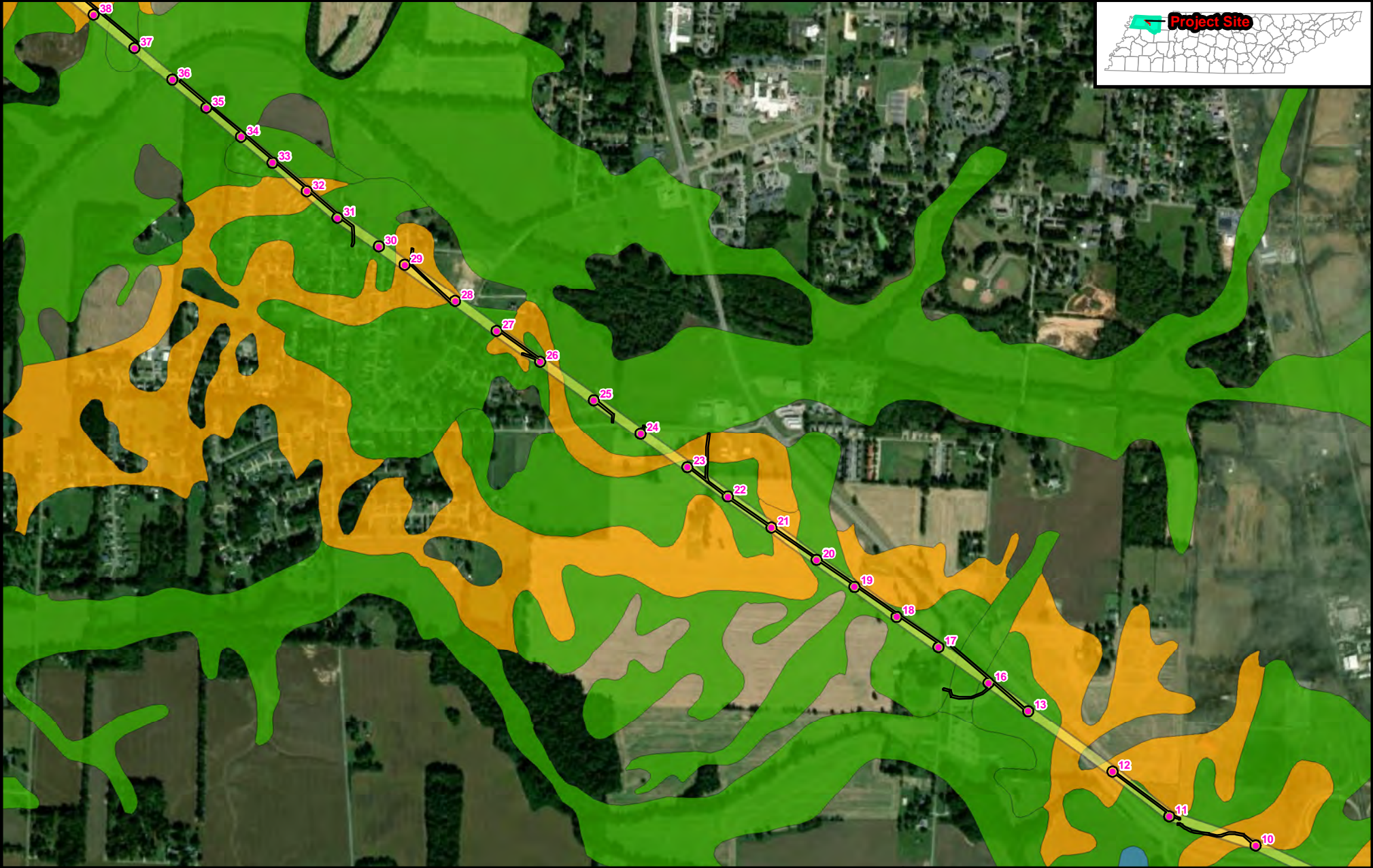
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NRCS Farmland Classification Map  
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Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmission Line ROW

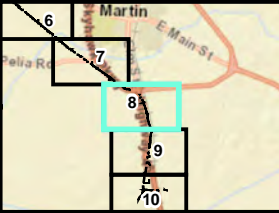
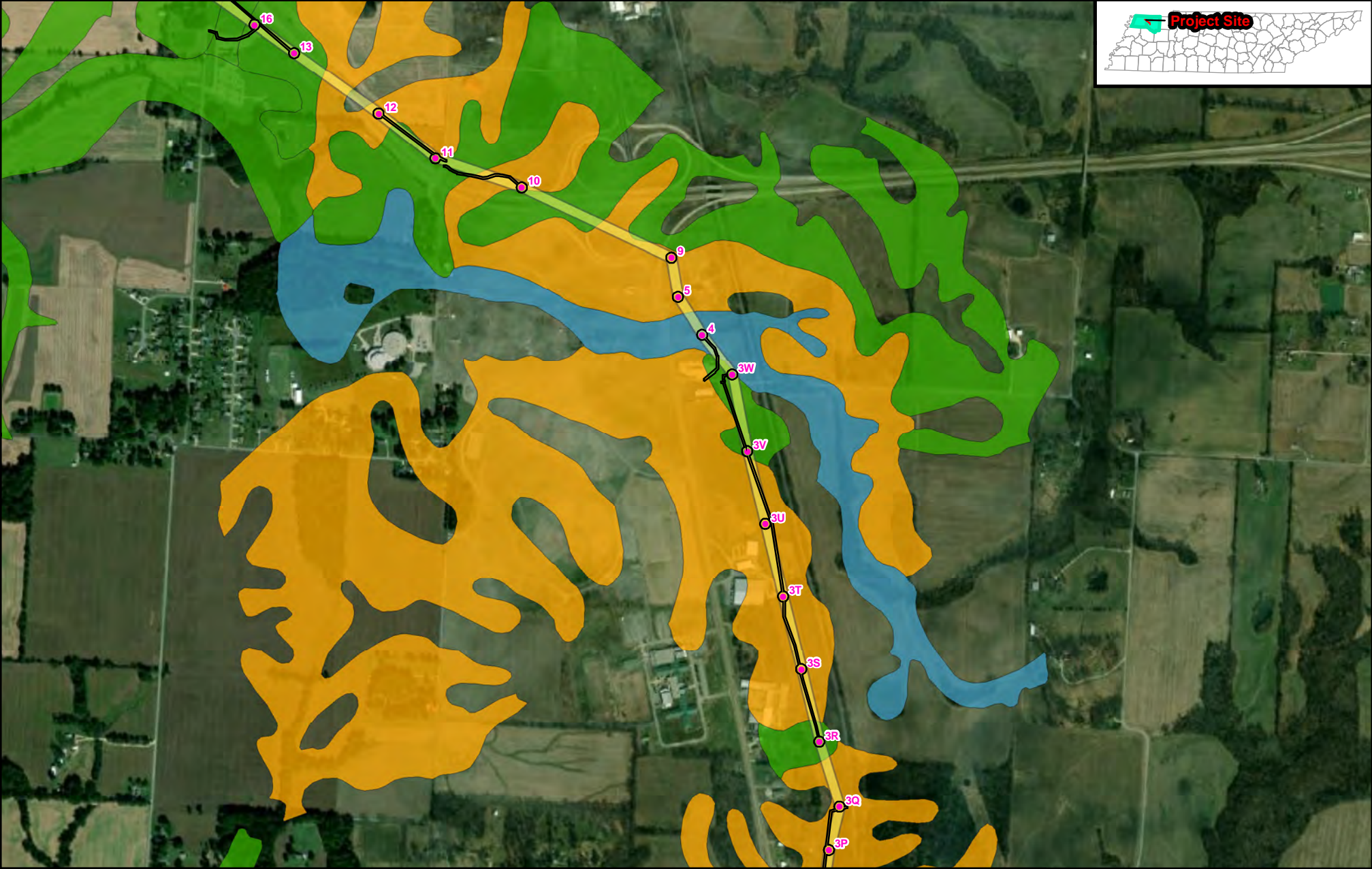
All areas are prime farmland  
Not prime farmland  
Prime farmland if drained

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Miles



NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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Project Site

Existing Structure

County Boundary

Existing Weakley to Union City 161 kV Transmisison Line ROW

All areas are prime farmland

Not prime farmland

Prime farmland if drained

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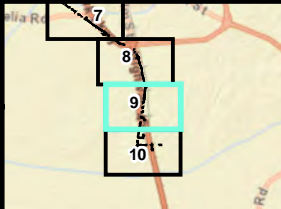
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NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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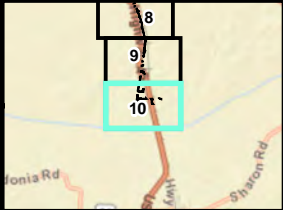
- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmission Line ROW

- All areas are prime farmland
  - Not prime farmland
  - Prime farmland if drained
- 0 0.1 0.2  
Miles

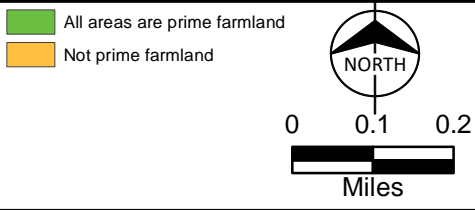


NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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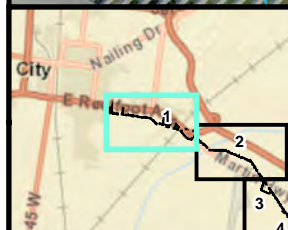
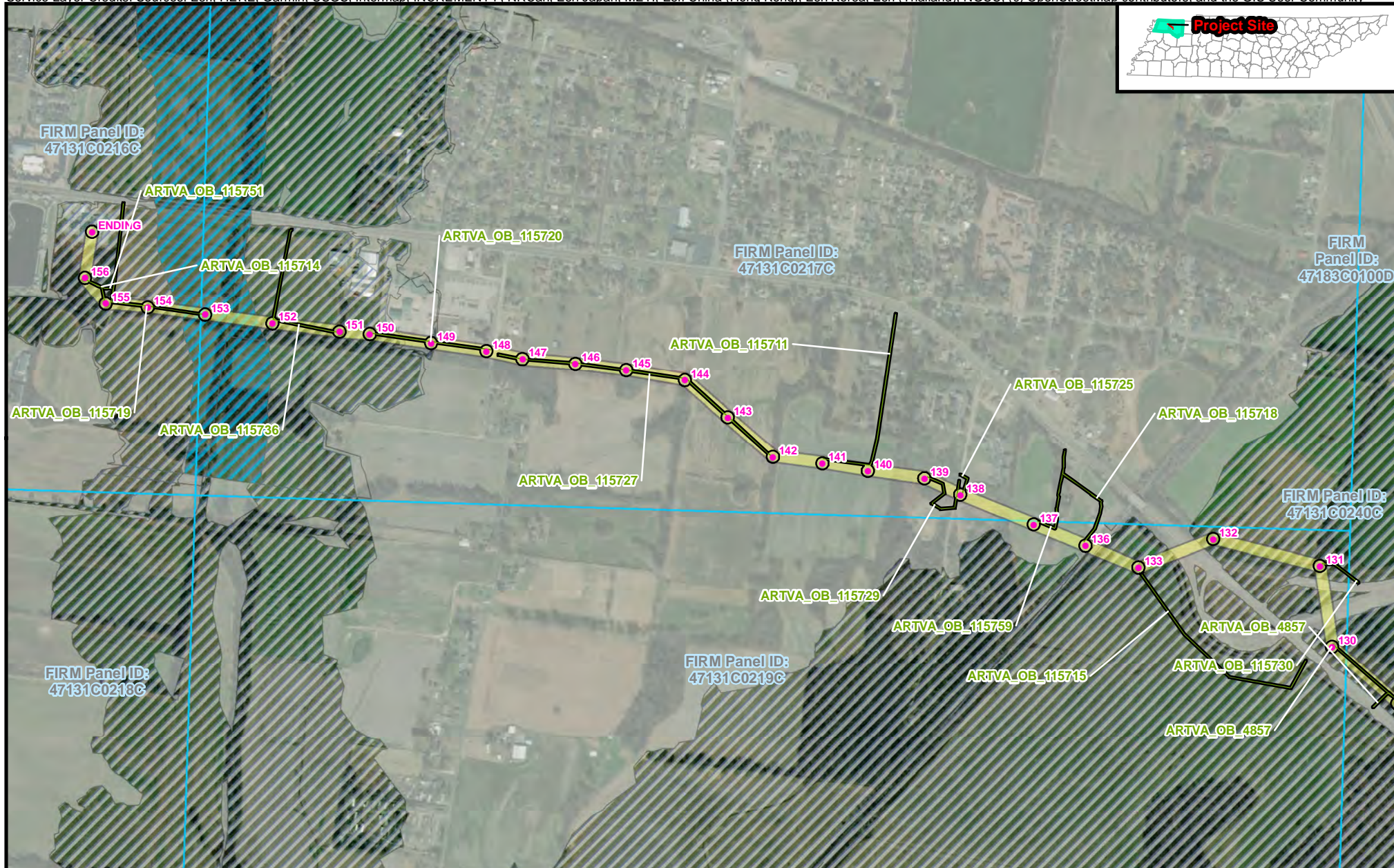


- Project Site
- Existing Structure
- County Boundary
- Existing Weakley to Union City 161 kV Transmisison Line ROW
- All areas are prime farmland
- Not prime farmland

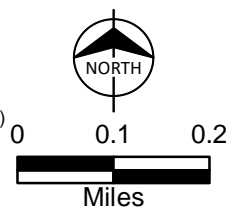


NRCS Farmland Classification Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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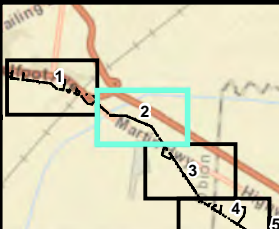
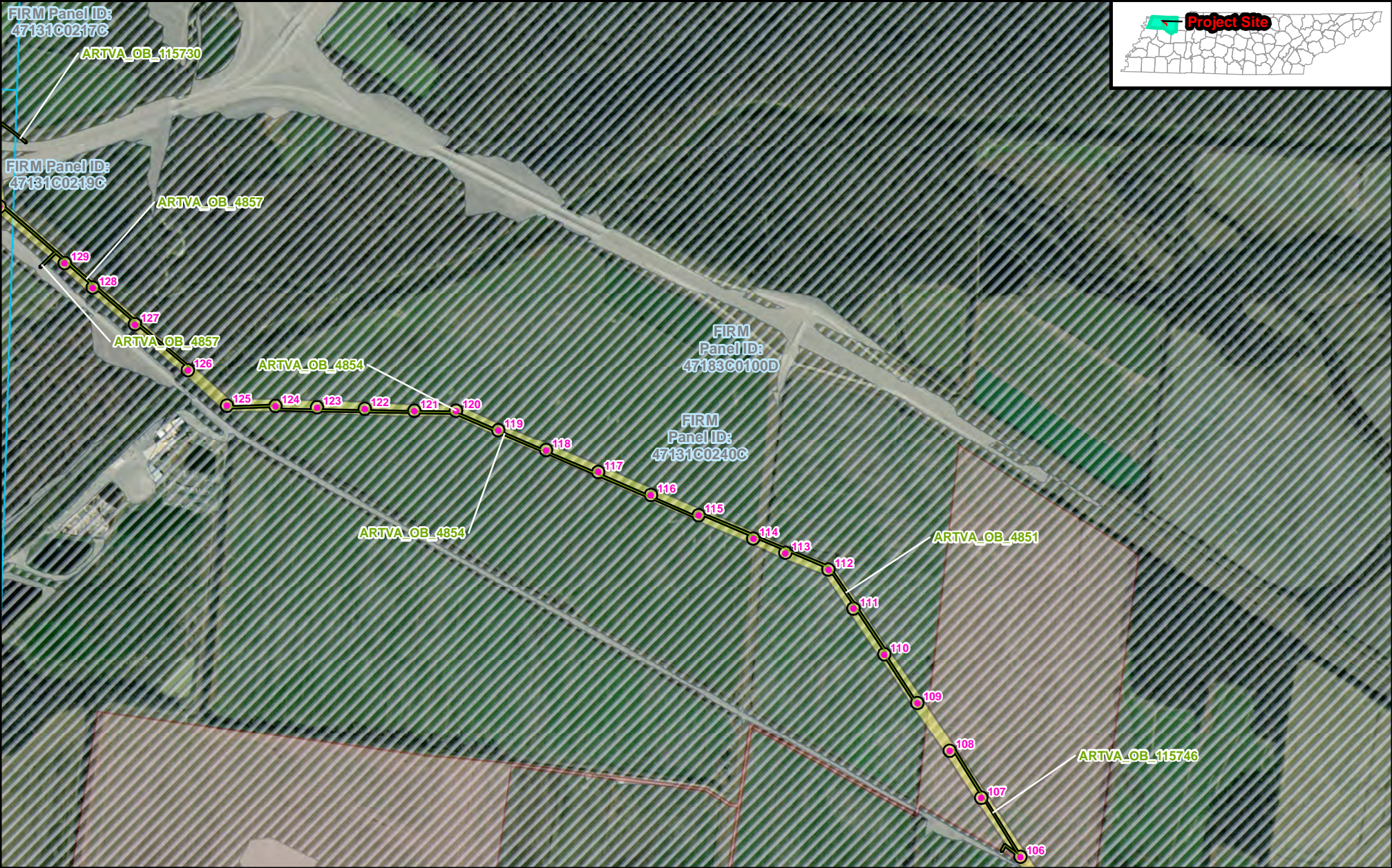


- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| Project Site                        | FIRM Panel                            |
| Existing Structure                  | Regulated Floodway                    |
| Access Road                         | 100-Year Floodplain (Zones A and AE)  |
| Weakley to Union City 161 kV TL ROW | Area of Minimal Flood Hazard (Zone X) |
| County Boundary                     |                                       |

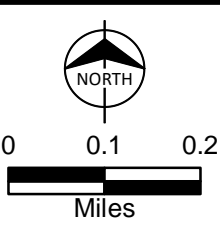


FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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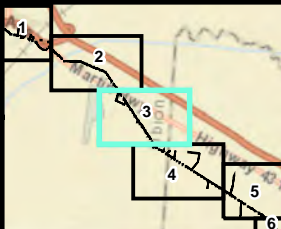
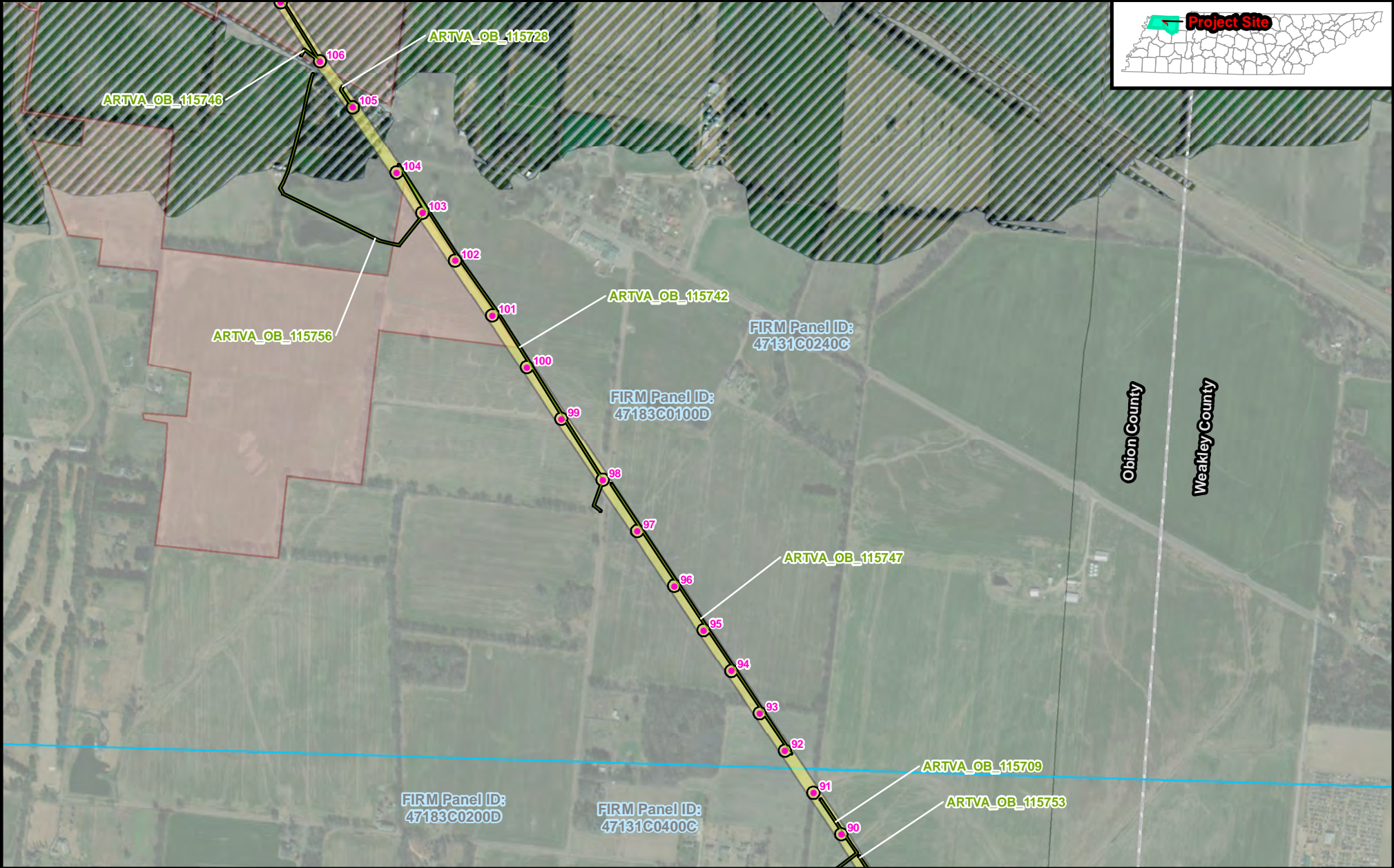


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- Skyhawk Solar Parcels
- County Boundary
- FIRM Panel
- 100-Year Floodplain (Zones A and AE)
- Area of Minimal Flood Hazard (Zone X)

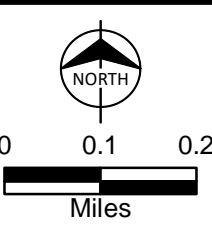


FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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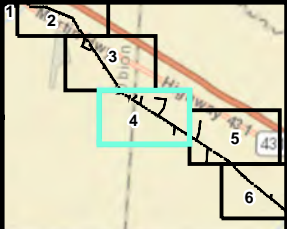
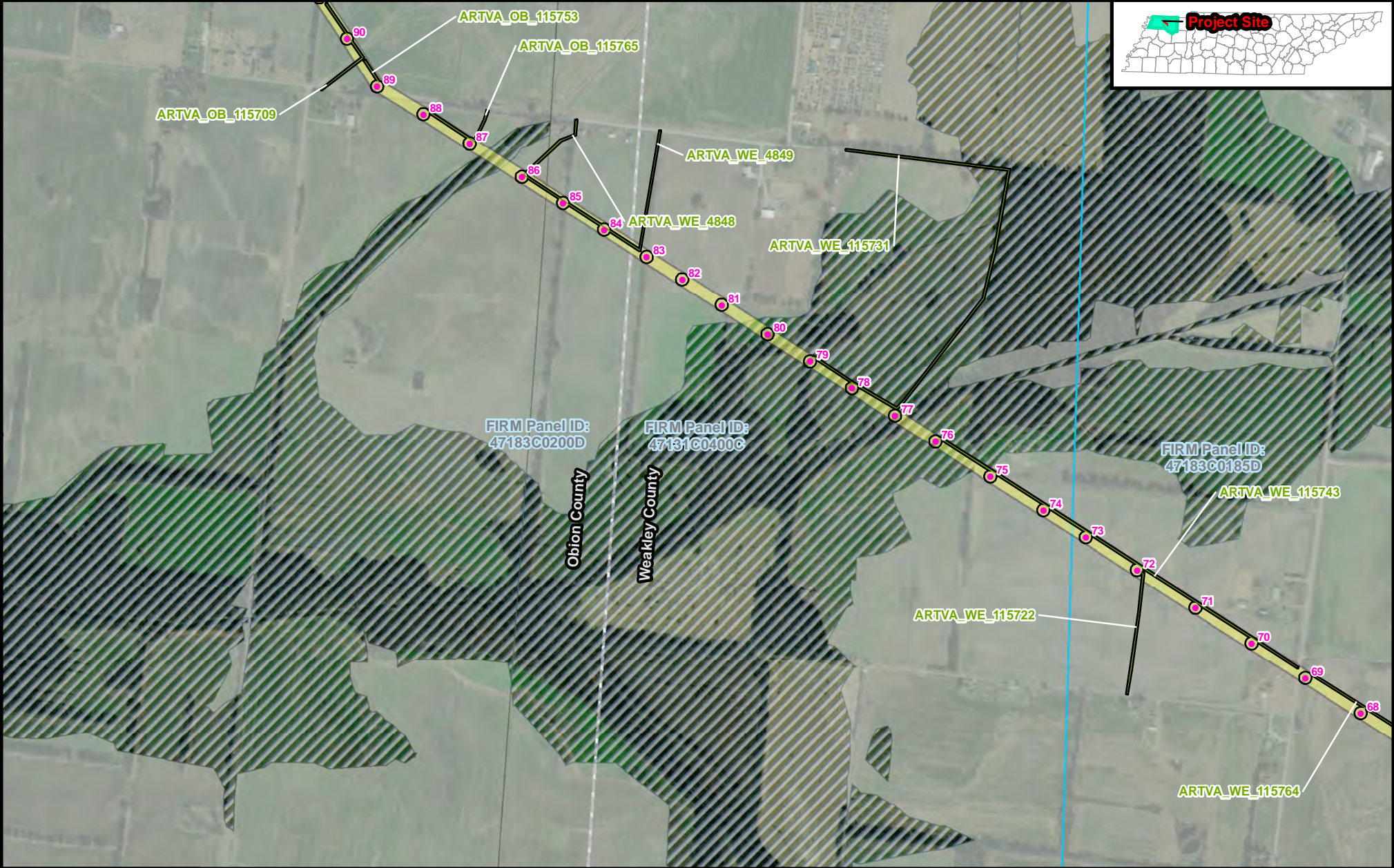


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- Skyhawk Solar Parcels
- County Boundary
- FIRM Panel
- 100-Year Floodplain (Zones A and AE)
- Area of Minimal Flood Hazard (Zone X)



FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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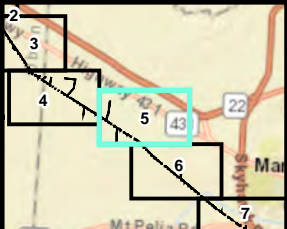
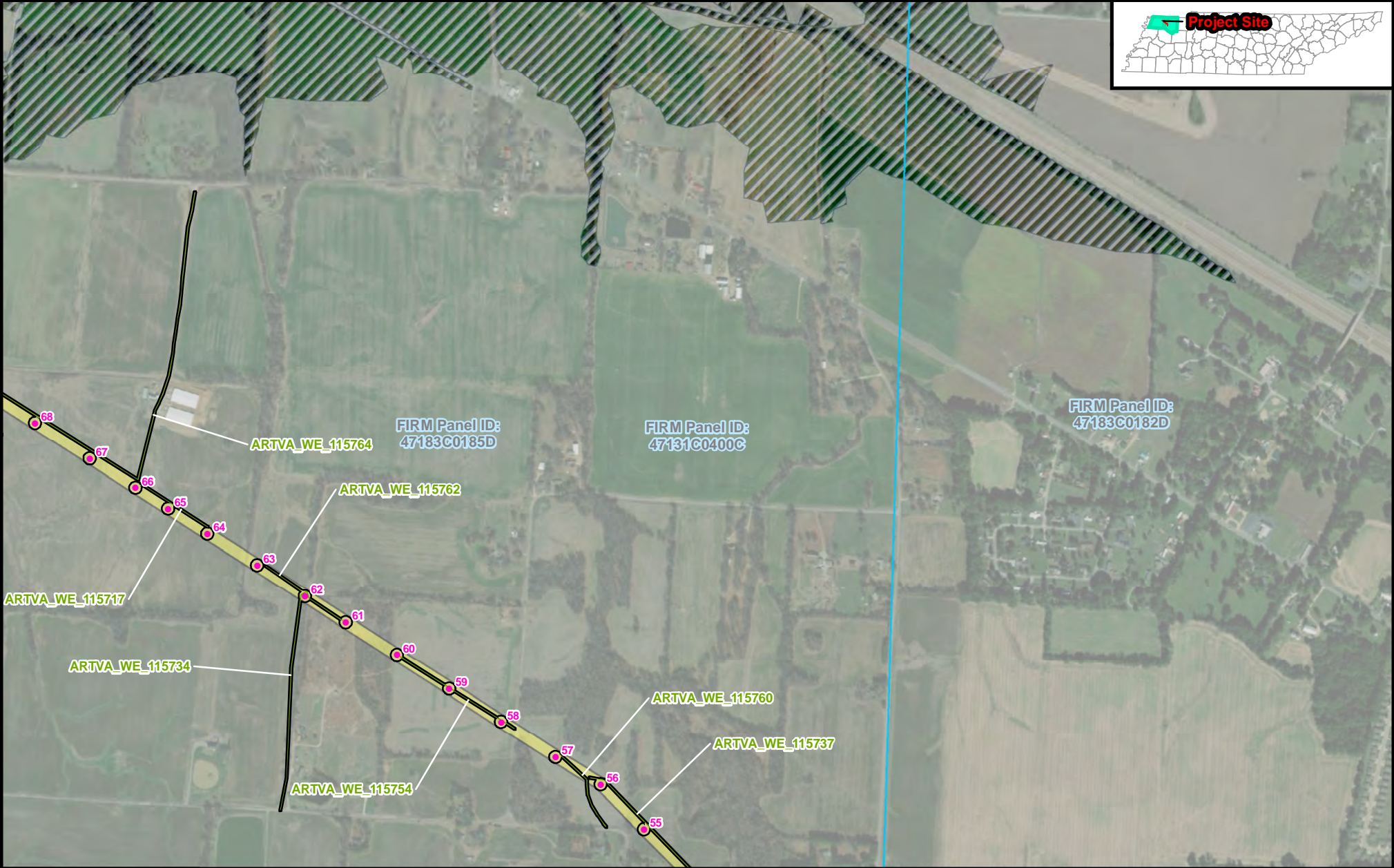
Project Site	FIRM Panel
Existing Structure	100-Year Floodplain (Zones A and AE)
Access Road	Area of Minimal Flood Hazard (Zone X)
Weakley to Union City 161 kV TL ROW	
County Boundary	

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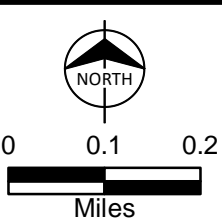


FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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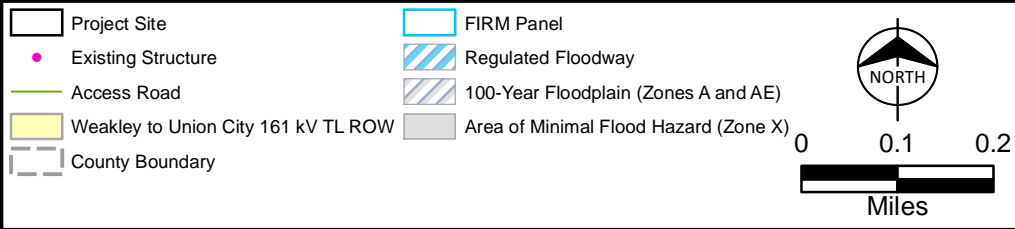
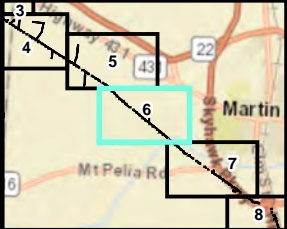


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary
- FIRM Panel
- 100-Year Floodplain (Zones A and AE)
- Area of Minimal Flood Hazard (Zone X)



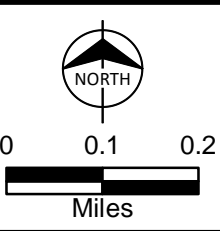
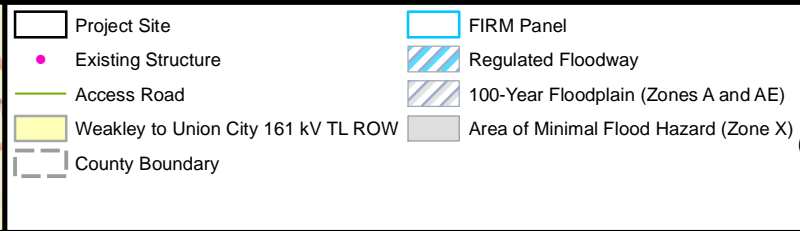
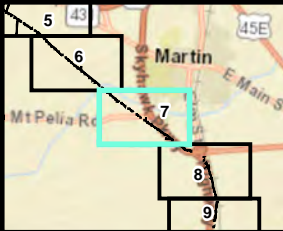
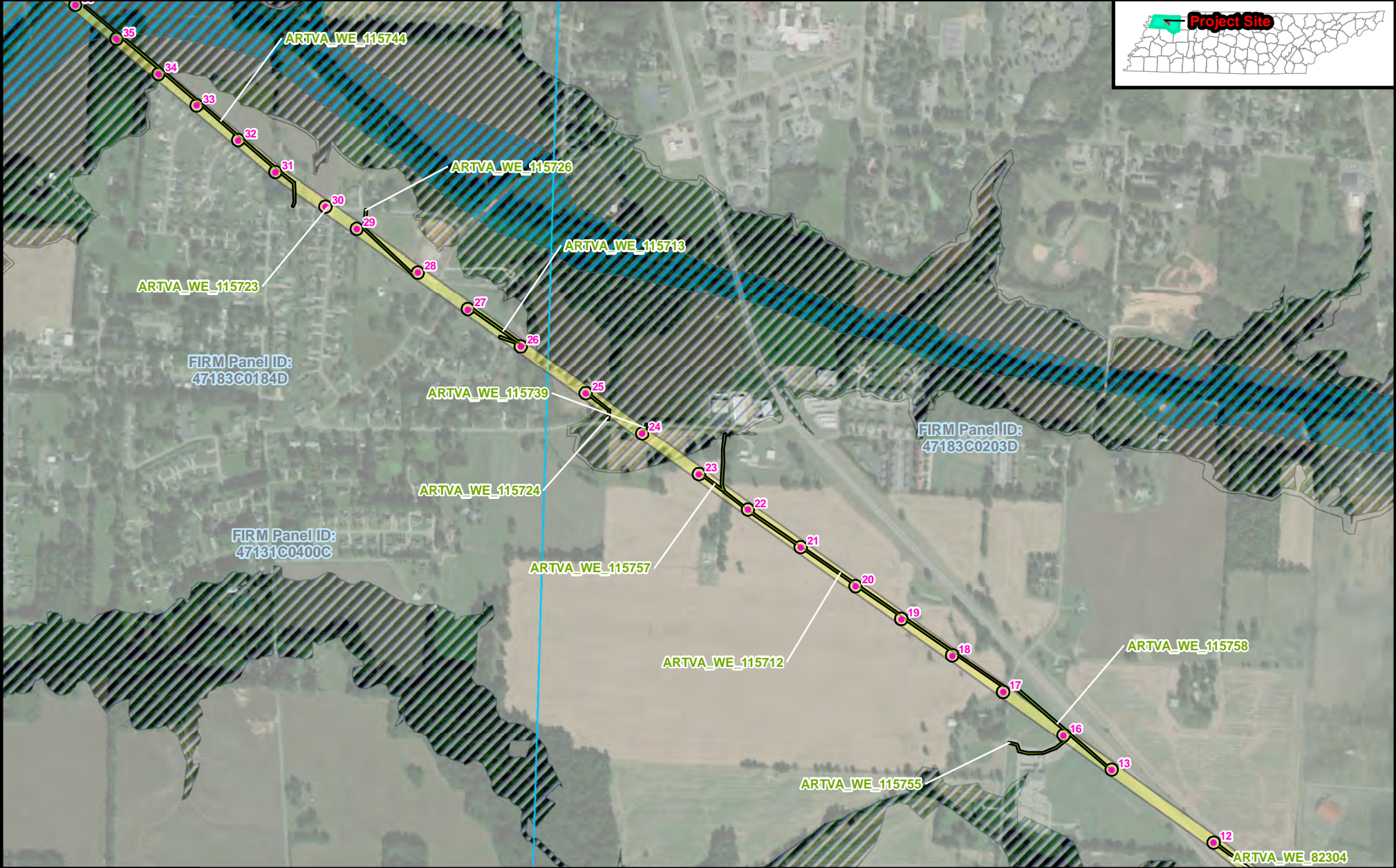
FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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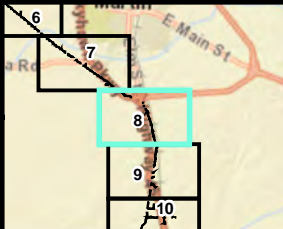
FEMA Flood Hazard Map  
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Obion and Weakley Counties, TN  
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FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
Page 7 of 10





Project Site	FIRM Panel
Existing Structure	100-Year Floodplain (Zones A and AE)
Access Road	Area of Minimal Flood Hazard (Zone X)
Weakley to Union City 161 kV TL ROW	
County Boundary	

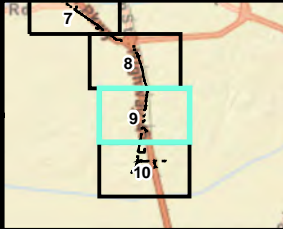
NORTH

0 0.1 0.2  
Miles



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





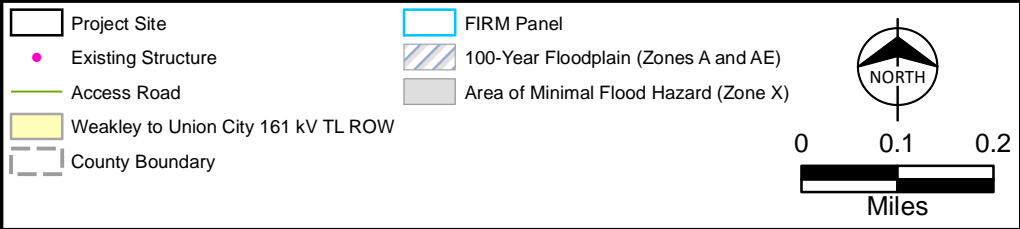
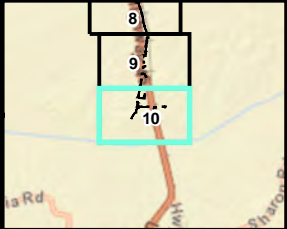
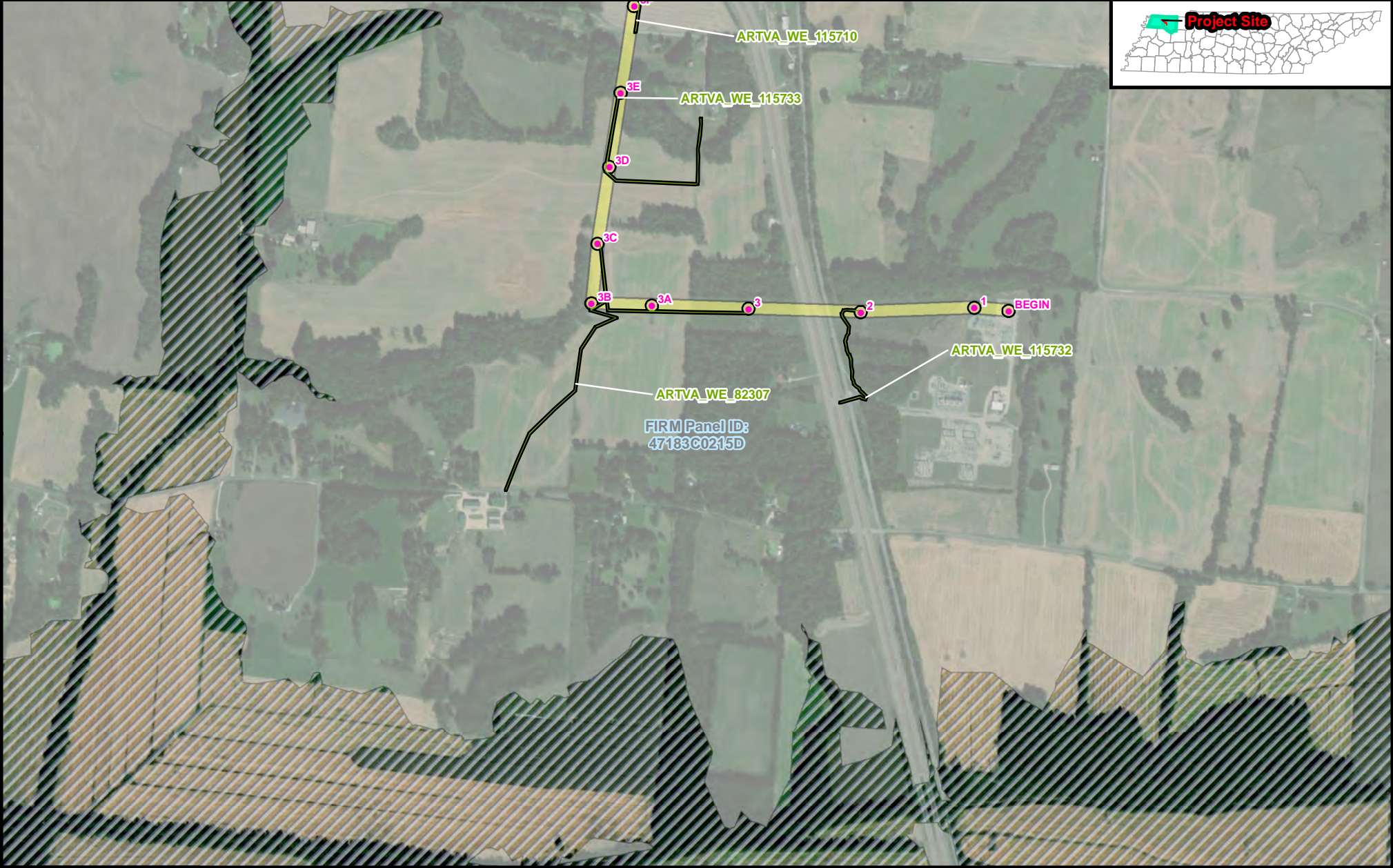
Project Site	FIRM Panel
Existing Structure	100-Year Floodplain (Zones A and AE)
Access Road	Area of Minimal Flood Hazard (Zone X)
Weakley to Union City 161 kV TL ROW	
County Boundary	

0 0.1 0.2  
Miles



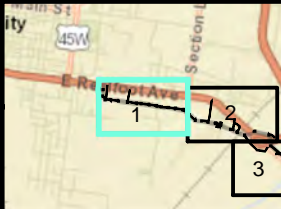
FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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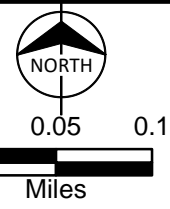
FEMA Flood Hazard Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
Page 10 of 10





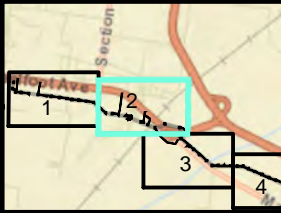
- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

- Delineated Stream**
- WWC (Non-Jurisdictional)
  - Intermittent
- Delineated Wetland**
- PEM



Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
Page 1 of 20

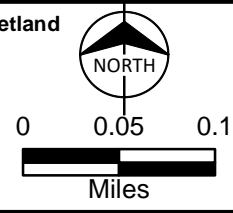




- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

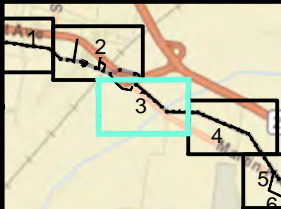
- Delineated Stream**
- WWC (Non-Jurisdictional)
  - Intermittent
  - Perennial

- Delineated Wetland**
- PEM



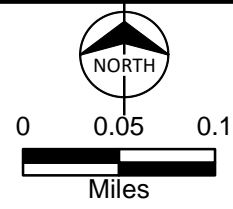
Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
Page 2 of 20





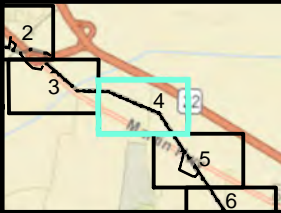
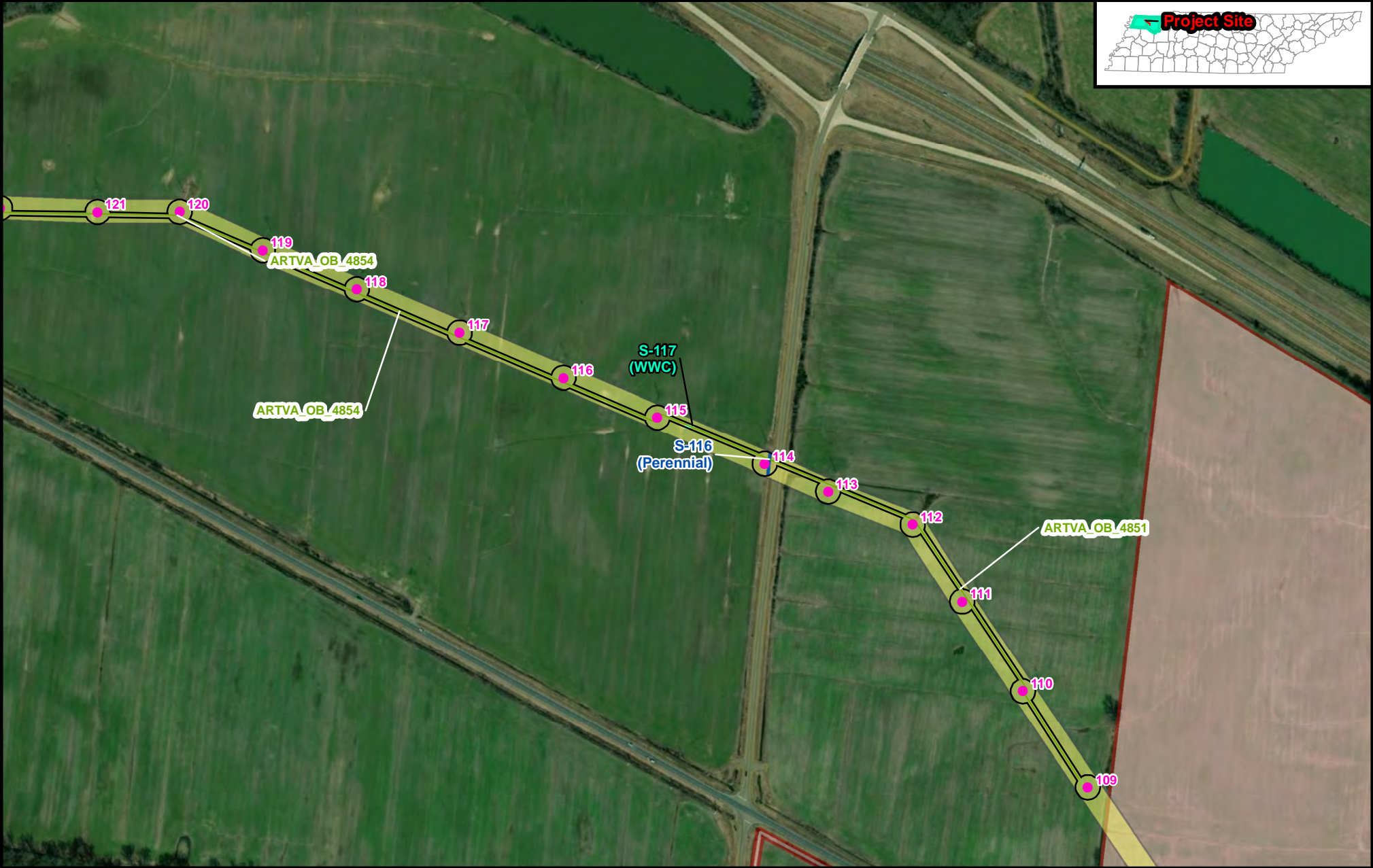
- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

**Delineated Stream**  
Perennial



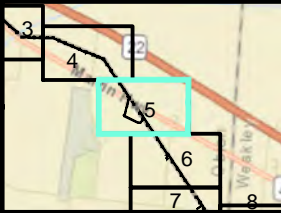
Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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
















-  Project Site
-  Existing Structure
-  Access Road
-  Weakley to Union City 161 kV TL ROW
-  Skyhawk Solar Parcels
-  County Boundary

**Delineated Wetland**


-  PUB



0 0.05 0.1

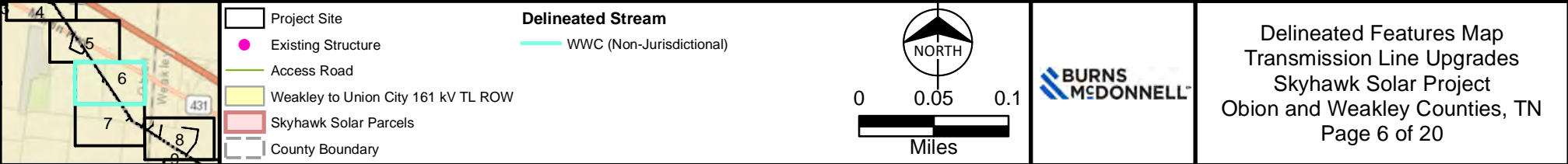


Miles

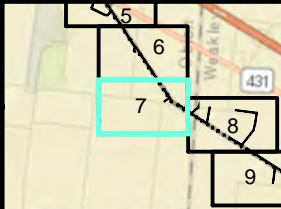
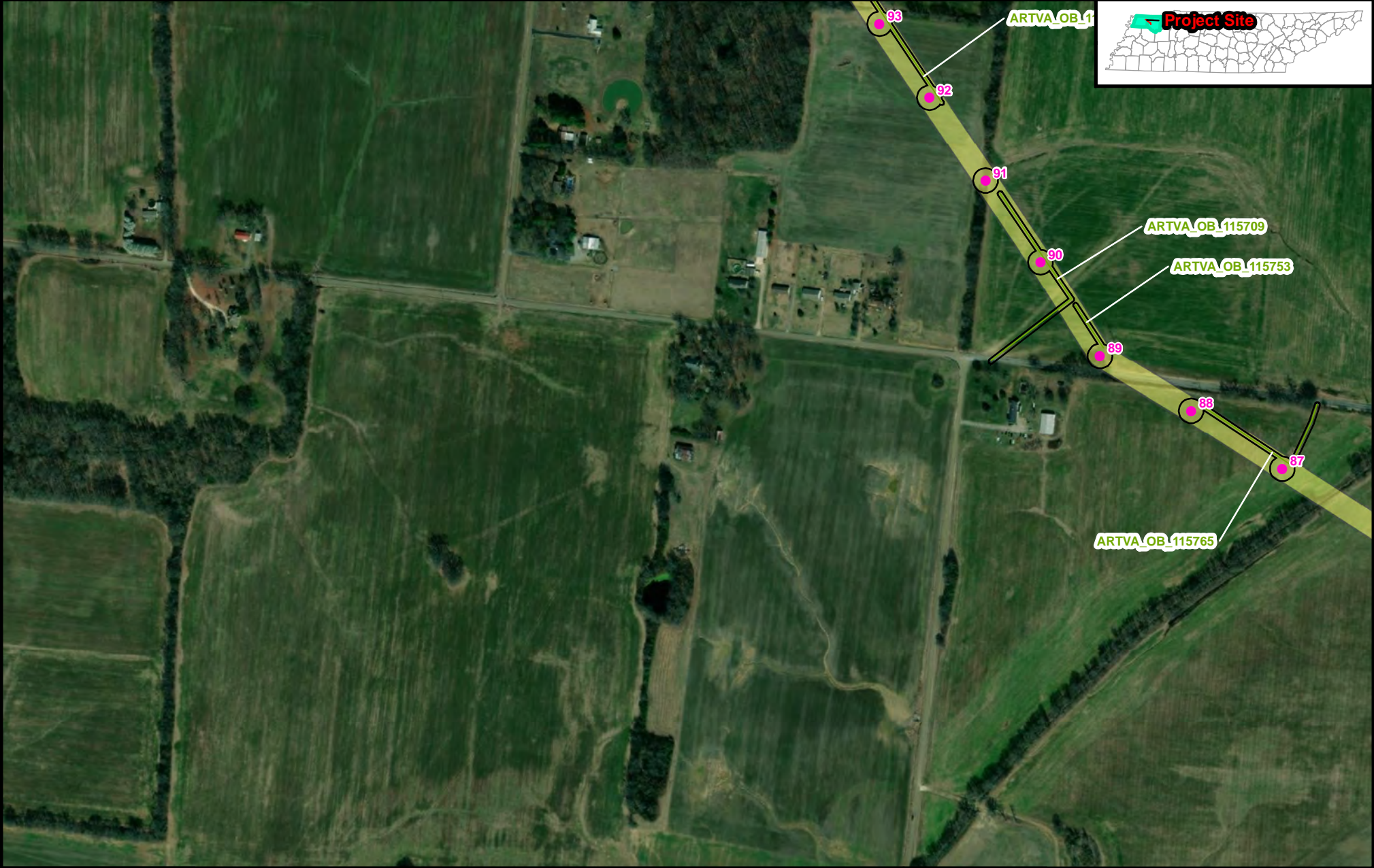


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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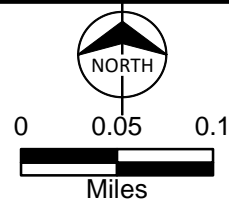






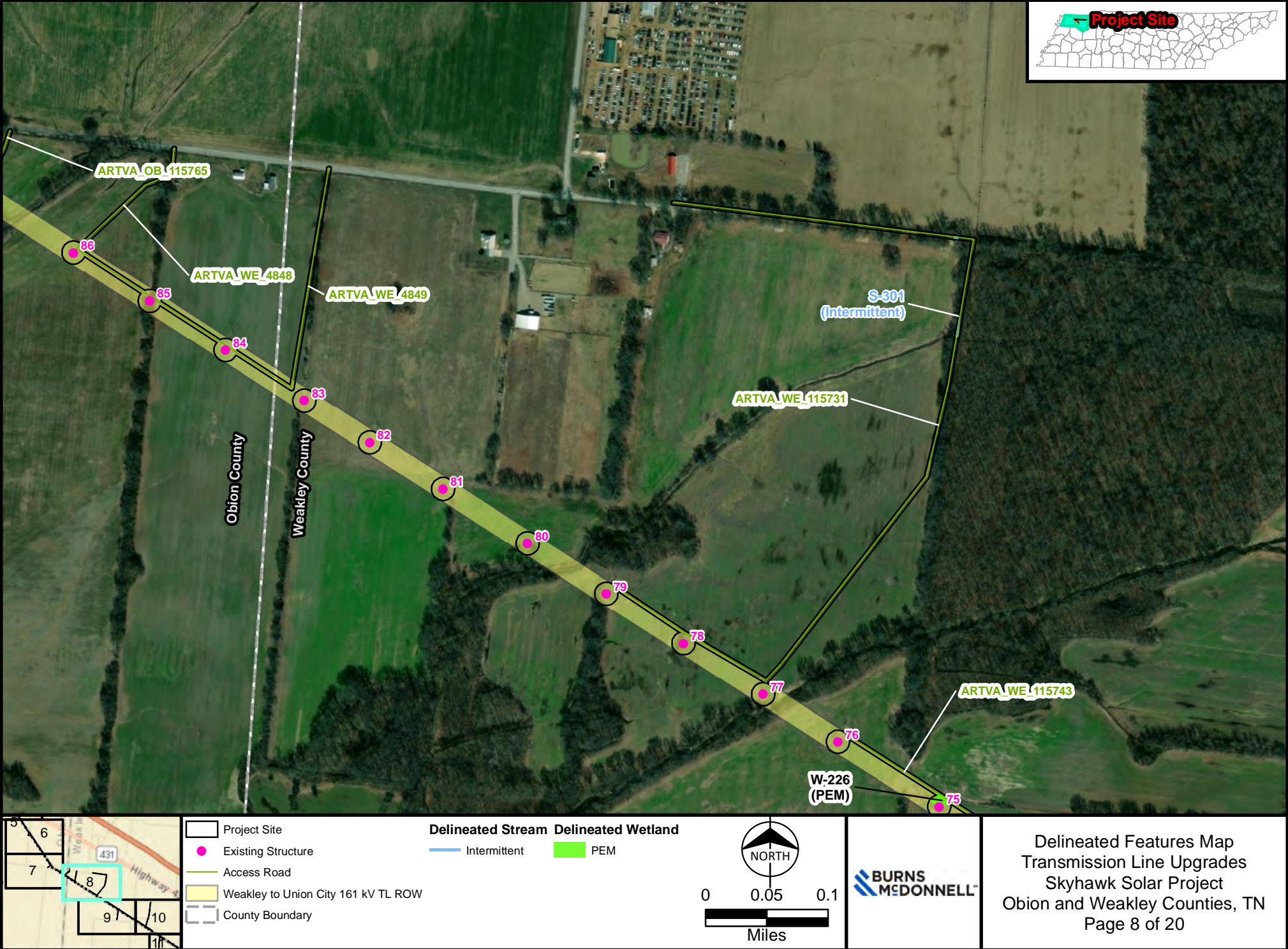


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

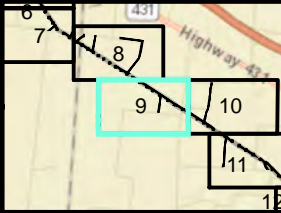


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
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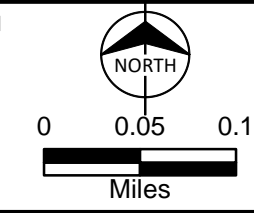






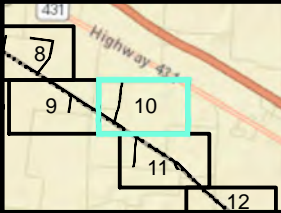
- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

- Delineated Stream**
- Intermittent
- Delineated Wetland**
- PEM

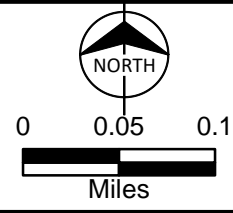


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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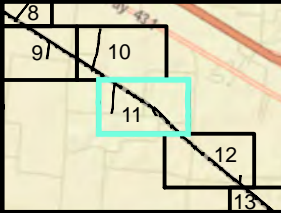


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary



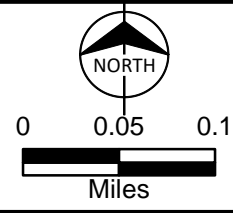
Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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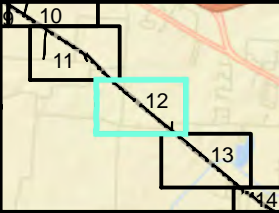
- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

**Delineated Stream**  
WWC (Non-Jurisdictional)

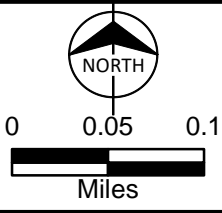


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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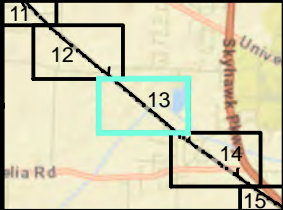


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary



Delineated Features Map  
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Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

**Delineated Wetland**

PEM

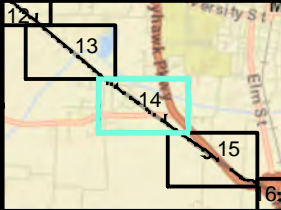
NORTH

0 0.05 0.1 Miles

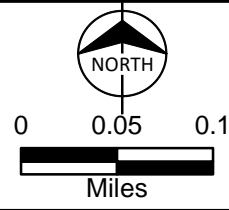


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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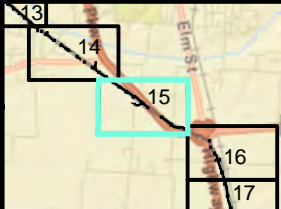


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

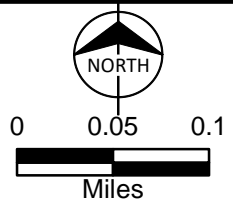


Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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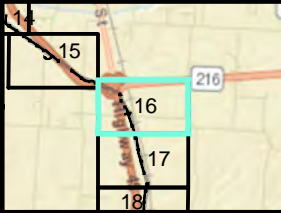


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

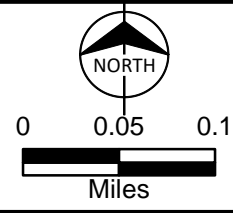


Delineated Features Map  
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Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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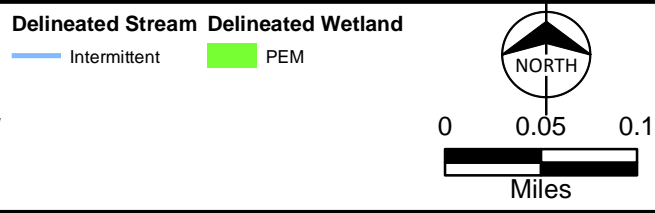
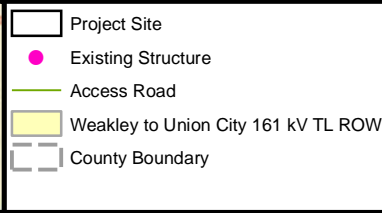
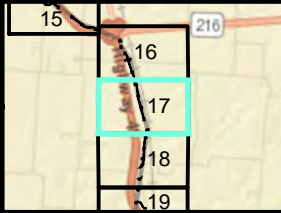


- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary



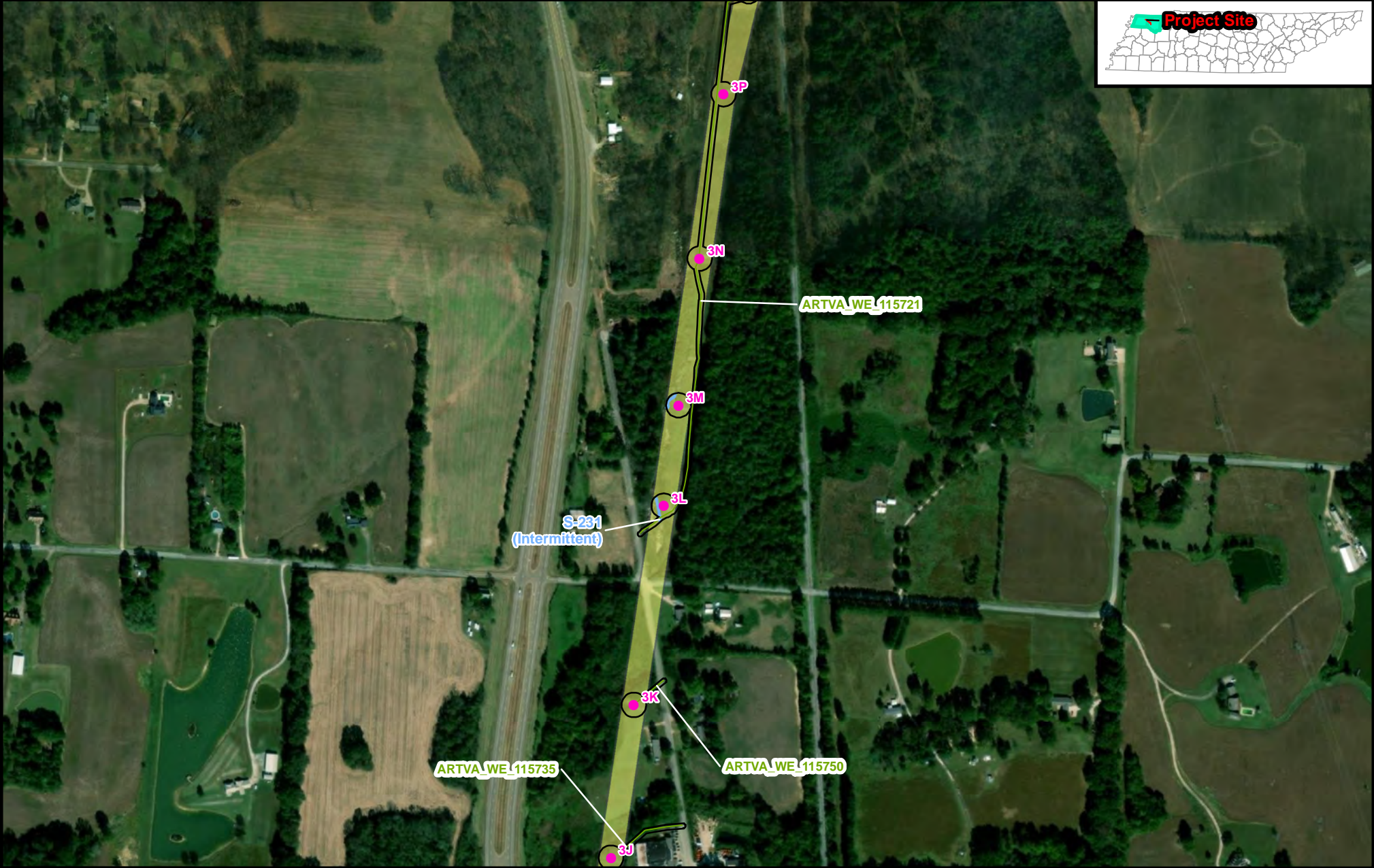
Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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	Project Site	<b>Delineated Stream</b> Intermittent	 NORTH	 0 0.05 0.1 Miles		<b>Delineated Features Map</b> Transmission Line Upgrades Skyhawk Solar Project Obion and Weakley Counties, TN Page 18 of 20
	Existing Structure Access Road Weakley to Union City 161 kV TL ROW County Boundary					





- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary

**Delineated Stream**

- Intermittent

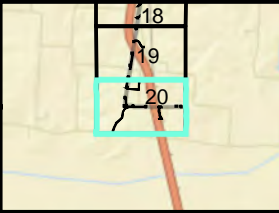
NORTH

0 0.05 0.1

Miles

Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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- Project Site
- Existing Structure
- Access Road
- Weakley to Union City 161 kV TL ROW
- County Boundary



Delineated Features Map  
Transmission Line Upgrades  
Skyhawk Solar Project  
Obion and Weakley Counties, TN  
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## **APPENDIX C – AGENCY CONSULTATIONS**





September 24, 2020

Ms. Morgan Morrissett  
District Conservationist  
Natural Resources Conservation Service  
235 Oil Well Road  
Jackson, TN 38305-7914

Re: Skyhawk Solar Project, Form AD-1006

Dear Ms. Morrissett:

The Tennessee Valley Authority (TVA) has entered into a power purchase agreement (PPA) with TN Solar 1, LLC (referred to herein as "TN Solar"), to purchase the power generated by the proposed Skyhawk Solar Facility ("Solar Facility") in Obion County, Tennessee. The Solar Facility would be constructed and operated by TN Solar and include up to approximately 150 megawatts (MW) of alternating current (AC) generating capacity.

The solar facility will be located within a rural agricultural area south of the North Obion River and State Route 22 and abutting the Everett-Stewart Regional Airport. The proposed Solar Facility would occupy about 705 acres of a Project Site consisting of five individual parcels of predominantly agricultural land. Approximately 692 acres (98 percent) of the Project Site are classified as prime farmland. All soil types on the Project Site are considered prime farmland with the exception of four: Grenada silt loam 5-8 percent slopes, eroded; Loring silt loam 5-8 percent slopes, eroded; Loring silt loam 8-12 percent slopes, eroded; and Routon silt loam 0-2 percent slopes. The attached map shows locations of prime farmland within the Project Site. The table below provides a list of soils within the Project Site.

During site preparation and grading activities, topsoil would be stockpiled and re-applied to the respective surface areas once grading is complete. Soils within the Project Site do not have characteristics that would require specific construction requirements or techniques. If the site is decommissioned and closure occurs, most facility components would be removed, and farming could subsequently be resumed with limited long-term loss of agriculture production.



Ms. Morgan Morrisett  
 Natural Resources Conservation Service  
 September 24, 2020  
 Page 2

**NRCS Soils Summary for the Skyhawk Solar Facility Project Site**

<b>Map Unit Name</b>	<b>Farmland Classification</b>	<b>Hydric Rating</b>	<b>Area (acres)</b>	<b>%</b>
Birds silt loam	All areas are prime farmland	100	133.67	19%
Calloway silt loam	All areas are prime farmland	0	39.23	6%
Center silt loam, 0 to 2 percent slopes	All areas are prime farmland	8	74.30	11%
Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	All areas are prime farmland	5	5.27	1%
Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase	Not rated or not available	0	0.02	0%
Fountain silt loam	All areas are prime farmland	100	8.61	1%
Grenada silt loam, 2 to 5 percent slopes	All areas are prime farmland	0	43.42	6%
Grenada silt loam, 2 to 5 percent slopes, eroded	All areas are prime farmland	0	25.61	4%
Grenada silt loam, 5 to 8 percent slopes, eroded	Not prime farmland	0	4.89	1%
Loring silt loam, 2 to 5 percent slopes	All areas are prime farmland	0	4.97	1%
Loring silt loam, 5 to 8 percent slopes, eroded	Not prime farmland	0	6.00	1%
Routon silt loam, 0 to 2 percent slopes	Not prime farmland	100	1.56	0%
Routon-Bonn silt loam complex	All areas are prime farmland	100	339.74	48%
Water	Not prime farmland	0	0.50	0%
Waverly silt loam	All areas are prime farmland	100	17.72	3%
<b>Totals</b>			<b>705.51</b>	<b>100%</b>





Ms. Morgan Morrisett  
Natural Resources Conservation Service  
September 24, 2020  
Page 3

In accordance with FPPA evaluation procedures, a USDA Farmland Conversion Impact Rating Form (Form AD-1006) must be completed for the Project Site. On behalf of TN Solar and TVA, I respectfully request your assistance in the completion of Form AD-1006. Once you've had an opportunity to review the attached maps and information, please let me know if you'd like to discuss the Project or if you have any questions or need additional information. I'm available via email at [rssusemihl@burnsmcd.com](mailto:rssusemihl@burnsmcd.com) or by phone at 470-268-9619.

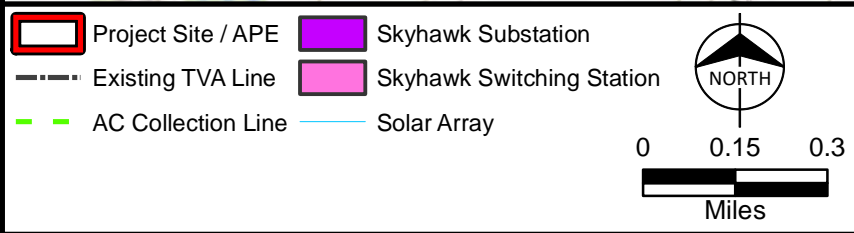
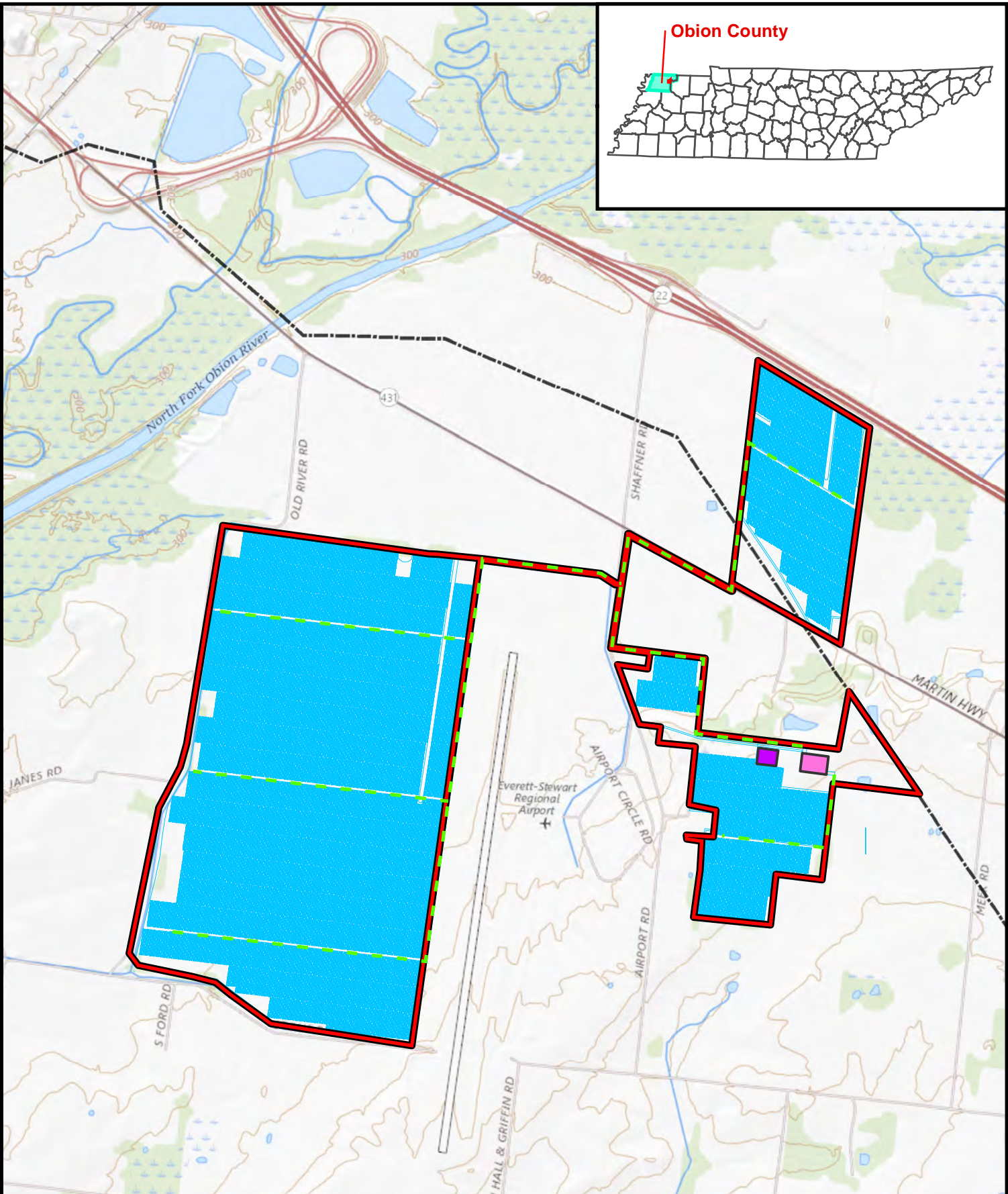
Sincerely,

A handwritten signature in black ink that reads "R.S. Susemihl".

Robyn Susemihl  
Burns & McDonnell  
Environmental Project Manager

Attachments





General Vicinity Map  
Skyhawk Solar Project  
Obion County, TN



Path: C:\Users\olhaney\Desktop\Projects\121610\_SkyhawkSolar\GIS\MXDs\EA\Soils\_Map.mxd olhaney 9/1/2020  
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



- |   |  |
|---|--|
| Project Site / APE  | Grenada silt loam, 2 to 5 percent slopes, eroded |
| Existing TVA Line   | Grenada silt loam, 5 to 8 percent slopes, eroded |
| Birds silt loam   | Loring silt loam, 2 to 5 percent slopes          |
| Calloway silt loam  | Loring silt loam, 5 to 8 percent slopes, eroded  |
| Center silt loam, 0 to 2 percent slopes   | Routon silt loam, 0 to 2 percent slopes          |
| Fountain silt loam  | Routon-Bonn silt loam complex                    |
| Grenada silt loam, 2 to 5 percent slopes  | Water  |
| Waverly silt loam   |  |
| Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration   |  |
| Feliciana silt loam, 12 to 20 percent slopes, moderately eroded, northern phase |  |

NRCS Soils Map  
Skyhawk Solar Project  
Obion County, TN








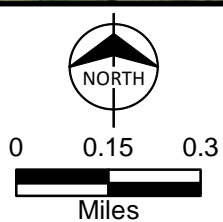
0 0.15 0.3  
Miles



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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



-  Project Site / APE
-  Existing TVA Line
-  All areas are prime farmland
-  Not prime farmland
-  Not rated or not available



 **BURNS  
MCDONNELL**

Farmland Classification Map  
Skyhawk Solar Project  
Obion County, TN



**From:** [Pilakowski, Ashley Anne](#)  
**To:** [Ashley Pilakowski](#)  
**Subject:** FW: Solar Farm FPPA Reviews  
**Date:** Friday, October 2, 2020 4:08:31 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)  
[image007.png](#)  
[image008.png](#)  
**Importance:** High

---

FYI – please see below. This is a brand new development for us. Please edit draft EAs as appropriate. We will use this email as our justification if we receive any pushback from the public.

Thank you,  
Ashley

---

**From:** Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>  
**Sent:** Friday, October 02, 2020 3:47 PM  
**To:** Pilakowski, Ashley Anne <aapilakowski@tva.gov>  
**Subject:** RE: Solar Farm FPPA Reviews

**This is an EXTERNAL EMAIL from outside TVA. THINK BEFORE you CLICK links or OPEN attachments. If suspicious, please click the “Report Phishing” button located on the Outlook Toolbar at the top of your screen.**

Ashley,

This will apply to all TVA solar farm RFPs where power is being purchased and no federal funding is involved in the construction process.

Best,

**Aaron Friend**

State Soil Scientist - Tennessee  
USDA-NRCS  
801 Broadway  
675 U.S. Courthouse  
Nashville, TN 37203  
Mobile: 615-202-6092

**“Helping People Help the Land”**

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---

**From:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>  
**Sent:** Friday, October 2, 2020 2:41 PM  
**To:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>



**Subject:** RE: Solar Farm FPPA Reviews

Hi Aaron,

Thank you so much for responding so quickly. Can you please just confirm that this conclusion applies to any solar farm in which TVA is only purchasing the power, and not funding the construction? If so, we will cease contacting your office for these projects moving forward.

Thank you,  
Ashley

---

**From:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>

**Sent:** Friday, October 02, 2020 3:28 PM

**To:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>

**Subject:** RE: Solar Farm FPPA Reviews

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Ashley,

I have followed up with all of my resources and have come to the conclusion that the solar farm in questions do not require an FPPA reviews. This decision is based on the fact that no federal funds are being used in the construction process. I hope this decision helps clarify and streamline activities on your end. Please let me know if you have any questions or concern.

Have a great weekend!

**Aaron Friend**

State Soil Scientist - Tennessee

USDA-NRCS

801 Broadway

675 U.S. Courthouse

Nashville, TN 37203

Mobile: 615-202-6092

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**From:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>

**Sent:** Friday, October 2, 2020 10:03 AM

**To:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>

**Subject:** RE: Solar Farm FPPA Reviews



Hi Aaron,

I tried calling your mobile, but it seems your VM is not set up. Please give me a call on my cell when you have a chance (240) 838-6348.

Thank you,  
Ashley

---

**From:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>

**Sent:** Thursday, October 01, 2020 5:20 PM

**To:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>

**Subject:** Re: Solar Farm FPPA Reviews

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Ashely,

I am available after 11:00. The mobile line is perfect.

Aaron

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---

**From:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>

**Sent:** Thursday, October 1, 2020 3:17:12 PM

**To:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>

**Subject:** RE: Solar Farm FPPA Reviews

Hi Aaron,

Are you available to discuss tomorrow? I'd like to talk through these projects if possible. Can I reach you on your mobile number listed below?

Thanks,

**Ashley Pilakowski**  
NEPA Specialist  
NEPA Program

Tennessee Valley Authority  
400 W. Summit Hill Drive, WT 11B  
Knoxville, TN 37902

865-632-2256 (w)



[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)



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---

**From:** Friend, Aaron - NRCS, Nashville, TN <[aaron.friend@usda.gov](mailto:aaron.friend@usda.gov)>

**Sent:** Thursday, October 01, 2020 2:25 PM

**To:** Pilakowski, Ashley Anne <[aapilakowski@tva.gov](mailto:aapilakowski@tva.gov)>

**Subject:** Solar Farm FPPA Reviews

**This is an EXTERNAL EMAIL from outside TVA. THINK BEFORE you CLICK links or OPEN attachments. If suspicious, please click the "Report Phishing" button located on the Outlook Toolbar at the top of your screen.**

Good afternoon Ashely,

I am the new Tennessee State Soil Scientist for the NRCS and point of contact for FPPA reviews within the state. We have recently received FPPA request for the Skyhawk Solar Facility and the McKellar Solar Facility. Based on our understanding of these projects, there is no need for an FPPA review since no federal funding is involved in the actual construction of these solar farms.

Can you please clarify any funding and/or contractual arrangement that may warrant an FPPA review?

Regards,

**Aaron Friend**

State Soil Scientist - Tennessee  
USDA-NRCS  
801 Broadway  
675 U.S. Courthouse  
Nashville, TN 37203  
Mobile: 615-202-6092

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

March 20, 2020

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Dear Sir/Madam:

TENNESSEE VALLEY AUTHORITY (TVA) INITIATION OF CONSULTATION FOR THE  
PROPOSED SKYHAWK SOLAR ARRAY AND ASSOCIATED TRANSMISSION LINE (TL)  
REBUILD, OBION AND WEAKLEY COUNTIES, TENNESSEE

TVA proposes to enter into a Power Purchase Agreement (PPA) with Origis Energy to purchase the electric power generated by a proposed solar photovoltaic (PV) facility in Obion and Weakley Counties, Tennessee. The project would consist of the solar array (located within five parcels), an internal TL with a 50-foot corridor, and a new TVA transmission interconnection including a new substation (total approximately 977 acres). The project may also require some



Sir/Madam  
Page 2  
March 20, 2020

maintenance to an existing 16-mile long TVA TL associated with the placement of optical ground wire (OPGW) upgrades. TVA is still in the process of analyzing what work needs to be done on certain portions of the TL which would require ground disturbance.

TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance, where physical effects could occur including the PV parcels, associated access routes, substations, and interconnect as well as areas within a half-mile radius of the project within which the project would be visible, where visual effects on above-ground resources could occur. For your review, please find Burns & McDonnell Engineering Company's research design for the Phase I Cultural Resources survey attached. Pursuant to 36 CFR § 800.4(b)(1), TVA finds that the design presented here is a reasonable and good faith effort to carry out identification efforts.

By this letter, TVA is initiating consultation regarding the proposed undertaking. TVA is proposing to do a Phase I Cultural Resources survey of the APE. Due to the size and scope of the project TVA proposes to proceed under phases as provided under 36 CFR § 800.4(b)(2) and § 800.5(a)(3).

By this letter, TVA is consulting with the following federally recognized tribes regarding historic properties within the APE that may be of religious and cultural significance and eligible for listing in the NRHP: Absentee Shawnee Tribe of Indians of Oklahoma, Cherokee Nation, The Chickasaw Nation, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, The Quapaw Nation, Shawnee Tribe, and United Keetoowah Band of Cherokee Indians in Oklahoma.

Please respond by April 19, 2020 if you have any comments on the proposed undertaking. If you have any questions, please contact me by phone, (865) 632-2464, or by email, [mmshuler@tva.gov](mailto:mmshuler@tva.gov).

Sincerely,



Marianne Shuler  
Archaeologist, Senior Specialist and Tribal Liaison  
Cultural Compliance



Sir/Madam  
Page 3  
March 20, 2020

MSH:ABM

Enclosures

cc (Enclosures):

Mr. Paul Barton  
Assistant Director of Cultural Preservation  
Eastern Shawnee Tribe of Oklahoma  
127 West Oneida  
Seneca, Missouri 64865

Ms. Sheila Bird  
Cultural Preservation Consultant  
Shawnee Tribe  
Post Office Box 189  
Miami, Oklahoma 74355

Ms. Charlotte Wolfe  
Section 106 Compliance Officer/Environmental Scientist  
United Keetoowah Band of Cherokee Indians in Oklahoma  
18263 W. Keetoowah Circle  
Tahlequah, Oklahoma 74464



May 20, 2020

Ms. Marianne Shuler, Senior Specialist,  
Archaeologist & Tribal Liaison  
Cultural Compliance  
Tennessee Valley Authority  
400 W. Summit Hill Drive  
460 WT 7D-K  
Knoxville, TN 37902

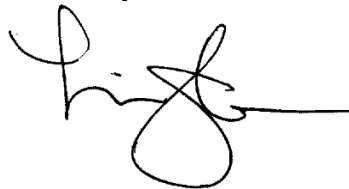
Dear Ms. Shuler:

Thank you for the letters of notification regarding the proposed projects delineated in the attached table. We accept the invitation to consult under Section 106 of the National Historic Preservation Act.

The Chickasaw Nation is in support of the proposed undertakings and is not presently aware of any specific historic properties, including those of traditional religious and cultural significance, in the project areas. In the event the agency becomes aware of the need to enforce other statutes we request to be notified under ARPA, AIRFA, NEPA, NAGPRA, NHPA and Professional Standards.

Your efforts to preserve and protect significant historic properties are appreciated. If you have any questions, please contact Ms. Karen Brunso, tribal historic preservation officer, at (580) 272-1106, or by email at [karen.brunso@chickasaw.net](mailto:karen.brunso@chickasaw.net).

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa John', with a long horizontal flourish extending to the right.

Lisa John, Secretary  
Department of Culture and Humanities

Cc: [mmshuler@tva.gov](mailto:mmshuler@tva.gov)

Enclosure



Project Description	Location
Proposed construction of a new 16 mile transmission line and 25 miles of associated access routes from Murray KY Substation to the Paris Board of Public Utilities' proposed new Eagle Creek, Tennessee Substation.	Calloway County Kentucky and Henry County, Tennessee.
Proposed Power Purchase Agreement with Orgis Energy from a proposed solar photovoltaic facility.	Obion and Weakley Counties, Tennessee



October 8, 2020

Ms. Marianne Shuler, Senior Specialist,  
Archaeologist and Tribal Liaison  
Cultural Compliance  
Tennessee Valley Authority  
400 West Summit Hill Drive  
460 WT 7D-K  
Knoxville, TN 37902

Dear Ms. Shuler:

Thank you for sending the letter and Phase I archaeological survey report for the proposed Power Purchase Agreement with Tennessee Solar I, LLC to purchase electric power from a new solar photovoltaic facility in Obion and Weakley Counties, Tennessee. We wish to consult under Section 106 of the National Historic Preservation Act.

The Chickasaw Nation supports the proposed undertaking and is not presently aware of any specific historic properties, including those of traditional religious and cultural significance, in the project area. In the event the agency becomes aware of the need to enforce other statutes we request to be notified under ARPA, AIRFA, NEPA, NAGPRA, NHPA and Professional Standards.

Your efforts to preserve and protect significant historic properties are appreciated. If you have any questions, please contact Ms. Karen Brunso, tribal historic preservation

[REDACTED]

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa John', with a stylized flourish extending to the right.

Lisa John, Secretary  
Department of Culture and Humanities

cc: [mmshuler@tva.gov](mailto:mmshuler@tva.gov)





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

March 20, 2020

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

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA) INITIATION OF CONSULTATION FOR THE  
PROPOSED SKYHAWK SOLAR ARRAY AND ASSOCIATED TRANSMISSION LINE (TL)  
REBUILD, OBION AND WEAKLEY COUNTIES, TENNESSEE

TVA proposes to enter into a Power Purchase Agreement (PPA) with Origis Energy to purchase the electric power generated by a proposed solar photovoltaic (PV) facility in Obion and Weakley Counties, Tennessee. The Project would consist of the solar array (located within five parcels), an internal TL with a 50-foot corridor, and a new TVA transmission interconnection including a new substation (total approximately 977 acres). The project may also require some maintenance to an existing 16-mile long TVA TL associated with the placement of optical ground wire (OPGW) upgrades. TVA is still in the process of analyzing what work needs to be done on certain portions of the TL which would require ground disturbance.

TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance, where physical effects could occur including the PV parcels, associated access routes, substations, and interconnect as well as areas within a half-mile radius of the project within which the project would be visible, where visual effects on above-ground resources could occur. For your review, please find Burns & McDonnell Engineering Company's research design for the Phase I Cultural Resources survey enclosed. Pursuant to 36 CFR § 800.4(b)(1), TVA finds that the design presented here is a reasonable and good faith effort to carry out identification efforts.

By this letter, TVA is initiating consultation regarding the proposed undertaking. TVA is proposing to do a Phase I Cultural Resources survey of the APE as described in the enclosed research design. Due to the size and scope of the project TVA proposes to proceed under phases as provided under 36 CFR § 800.4(b)(2) and § 800.5(a)(3).

Pursuant to 36 C.F.R. Part 800.3(f)(2), TVA is consulting with federally recognized Indian tribes regarding historic properties within the proposed project's APE that may be of religious and cultural significance and are eligible for the National Register of Historic Places.



Mr. E. Patrick McIntyre, Jr.  
Page 2  
March 20, 2020

Please contact Michaelyn Harle by telephone (865) 632-2248 or by email, [mharle@tva.gov](mailto:mharle@tva.gov) with your comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Clinton E. Jones". The signature is fluid and cursive, with the first name "Clinton" and last name "Jones" clearly distinguishable.

Clinton E. Jones  
Manager  
Cultural Compliance

MSH:ABM  
Enclosures

cc (Enclosures):

Ms. Jennifer Barnett  
Tennessee Division of Archaeology  
1216 Foster Avenue, Cole Bldg. #3  
Nashville, Tennessee 37210





**TENNESSEE HISTORICAL COMMISSION**  
STATE HISTORIC PRESERVATION OFFICE  
2941 LEBANON PIKE  
NASHVILLE, TENNESSEE 37243-0442  
OFFICE: (615) 532-1550  
[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

March 24, 2020

Mr. Clinton E. Jones  
Tennessee Valley Authority  
400 West Summit Hill Drive  
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Proposed Skyhawk Solar Array and Associated  
Transmission Line Rebuild, Multiple Counties, Obion and Weakley Counties, TN

Dear Mr. Jones:

In response to your request, we have reviewed the documents submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). We concur with your agency that a process of phased compliance is appropriate for this undertaking. As the project progresses, please submit detailed documentation to this office for each phase of the proposed undertaking for our continued review and comment.

If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Casey Lee at Casey.Lee@tn.gov.

Your continued cooperation is appreciated.

Sincerely,

cjl

E. Patrick McIntyre, Jr.  
Executive Director and  
State Historic Preservation Officer

EPM/cjl





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

September 29, 2020

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

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA) THE PROPOSED SKYHAWK SOLAR ARRAY AND ASSOCIATED TRANSMISSION LINE (TL) REBUILD, OBION AND WEAKLEY COUNTIES, TENNESSEE (36.396033, -88.986623)

In a letter dated March 19, 2020, we initiated consultation with your office regarding TVA's proposal to enter into a Power Purchase Agreement (PPA) with TN Solar 1, LLC to purchase the electric power generated by a proposed 829-acre solar photovoltaic (PV) facility in Obion and Weakley Counties, Tennessee. The undertaking also requires upgrades to TVA's Union City -Weakley #2 TL, as well as the installation of a new fiber optic line within the right-of-way (ROW). TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance, where physical effects could occur within the 829-acre PV parcels as well as areas within a half-mile radius of the project which the project would be visible, where visual effects on above-ground resources could occur. As the exact locations of direct impacts from the planned TL upgrades and installation of the fiber optic line has not been identified at this time, the survey consisted of the entire 16-mile-long by 100-foot-wide TL ROW, as well as the possible 68 associated access routes. Any pole changes associated with the TL upgrades would not exceed 10 feet; therefore, the proposed upgrades would not have an appreciable difference on the viewshed that has the potential to cause additional visual effects.

TN Solar 1, LLC contracted with Burns & McDonnell to conduct a Phase I Cultural Resources survey, per the scope of work provided to your office. The resulting report for the solar array titled *Phase I Cultural Resources Survey for the Skyhawk Solar Project*, and the TL ROW titled *Phase I Archaeological Resources Survey for the Skyhawk Solar Project Transmission Line/16-Mile TVA ROW Corridor*, can be downloaded.

The background research identified two previously recorded archaeological sites, 40OB207, Embury-Riddle Airfield (also known as the Everett-Stewart Airport), and 40OB208, the Stanley House, within the PV project area. One previously recorded historic archaeological site, 40OB226, is located within the TL ROW. Sites 40OB208 and 40OB226 were previously

Mr. E. Patrick McIntyre, Jr.  
Page 2  
September 29, 2020

recommended not eligible for listing in the National Register of Historic Places (NRHP). During the PV parcels survey, Burns & McDonnell identified eleven historic-era sites (40OB232-40OB237, 40OB239-40OB243) and one multicomponent pre-contact and historic-era site (40OB238). Portions of two of these sites (40OB237 and 40OB238) also fall within the existing TL ROW. Burns & McDonnell recommend sites 40OB232-40OB243 ineligible for the NRHP based on lack of integrity and research value. In addition, Burns & McDonnell identified portions of two historic farmstead sites (40WK120 and 40OB231) within the TL ROW survey area. The portions of sites 40WK120 and 40OB231 within the TL ROW lack integrity and offer little research value and are recommended as non-contributing to the eligibility of the sites. Burns & McDonnell identified 82 historic architectural resources within the viewshed. Burns & McDonnell recommends that none of the properties, either individually or collectively, meets the criteria for NRHP inclusion due to a lack of significance and/or architectural integrity.

TVA has read Burns & McDonnell reports and agrees with their recommendations. Pursuant to 36 CFR Part 800.4(d)(1) we are notifying you of TVA's finding of no historic properties affected, providing the documentation specified in § 800.11(d); and inviting you to review the finding. In addition, we are seeking your agreement with TVA's eligibility determinations and finding that the undertaking as currently planned will have no effects on historic properties. TVA will provide a separate letter and report with the results of the archaeological survey.

Please contact Michaelyn Harle by email, [mharle@tva.gov](mailto:mharle@tva.gov) with your comments.

Sincerely,



Clinton E. Jones  
Manager  
Cultural Compliance

MSH:ABM  
Enclosures

cc (Enclosures):

Ms. Jennifer Barnett  
Tennessee Division of Archaeology  
1216 Foster Avenue, Cole Bldg. #3  
Nashville, Tennessee 37210



INTERNAL COPIES NOT TO BE INCLUDED WITH OUTGOING LETTER:

S. Dawn Booker, BR 2C-C  
Michael C. Easley, BR 2C-C  
Michaelyn S. Harle, WT 11C-K  
Brandon J. Hartline, BR 2C-C  
Susan R. Jacks, WT 11C-K  
Rebecca C. Tolene, WT 11C-K  
Ashley A. Pilakowski, WT 11C-K  
ECM, ENVRecords



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**STATE HISTORIC PRESERVATION OFFICE**  
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NASHVILLE, TENNESSEE 37243-0442  
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[www.tnhistoricalcommission.org](http://www.tnhistoricalcommission.org)

September 30, 2020

Mr. Clinton E. Jones  
Tennessee Valley Authority  
Biological and Cultural Compliance  
400 West Summit Hill Drive  
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Proposed Skyhawk Solar Array and Associated Transmission Line  
Rebuild, Obion and Weakley Counties, TN

Dear Mr. Jones:

In response to your request, we have reviewed the cultural resources survey reports and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

In the final reports, please edit the reports so that both the cover pages and report covers identify the reports as Cultural Resource investigations, not strictly archaeological investigations. Additionally, please remove the TN Division of Archaeology site records from the reports. The versions appended to the reports are not the TDOA finalized versions. Please retain the maps and figures associated with the draft site records, as those figures are the only specific maps and survey documentation associated with the newly-recorded sites included in the report.

Considering the information provided, we concur that sites 40OB232, 40OB233, 40OB234, 40OB235, 40OB236, 40OB237, 40OB238, 40OB239, 40OB240, 40OB241, 40OB242, and 40OB243 are not eligible for the National Register. We also concur that the portions of sites 40OB231 and 40WK120 within the area of potential effect do not retain integrity and do not contain information that contributes to the possible eligibility of the overall sites. Finally, we concur that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking.

If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Jennifer Barnett (615) 687-4780, [Jennifer.Barnett@tn.gov](mailto:Jennifer.Barnett@tn.gov).

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.  
Executive Director and  
State Historic Preservation Officer

EPM/jmb



## **APPENDIX D – WETLAND AND WATERBODY DELINEATION REPORT**

# 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 <sup>a</sup>	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
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	0.8409	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 <sup>a</sup>	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
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
		<b>10.84</b>	<b>10.36</b>		

(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 <sup>a</sup>
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 <sup>b</sup>	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 <sup>a</sup>
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 <sup>b</sup>	Intermittent	3,872	0	15	Yes
<b>Total:</b>		<b>66,317</b>	<b>47,711</b>		

(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](mailto:jabrown3@burnsmcd.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Jesse A. Brown". The signature is fluid and cursive, with a long, sweeping underline.

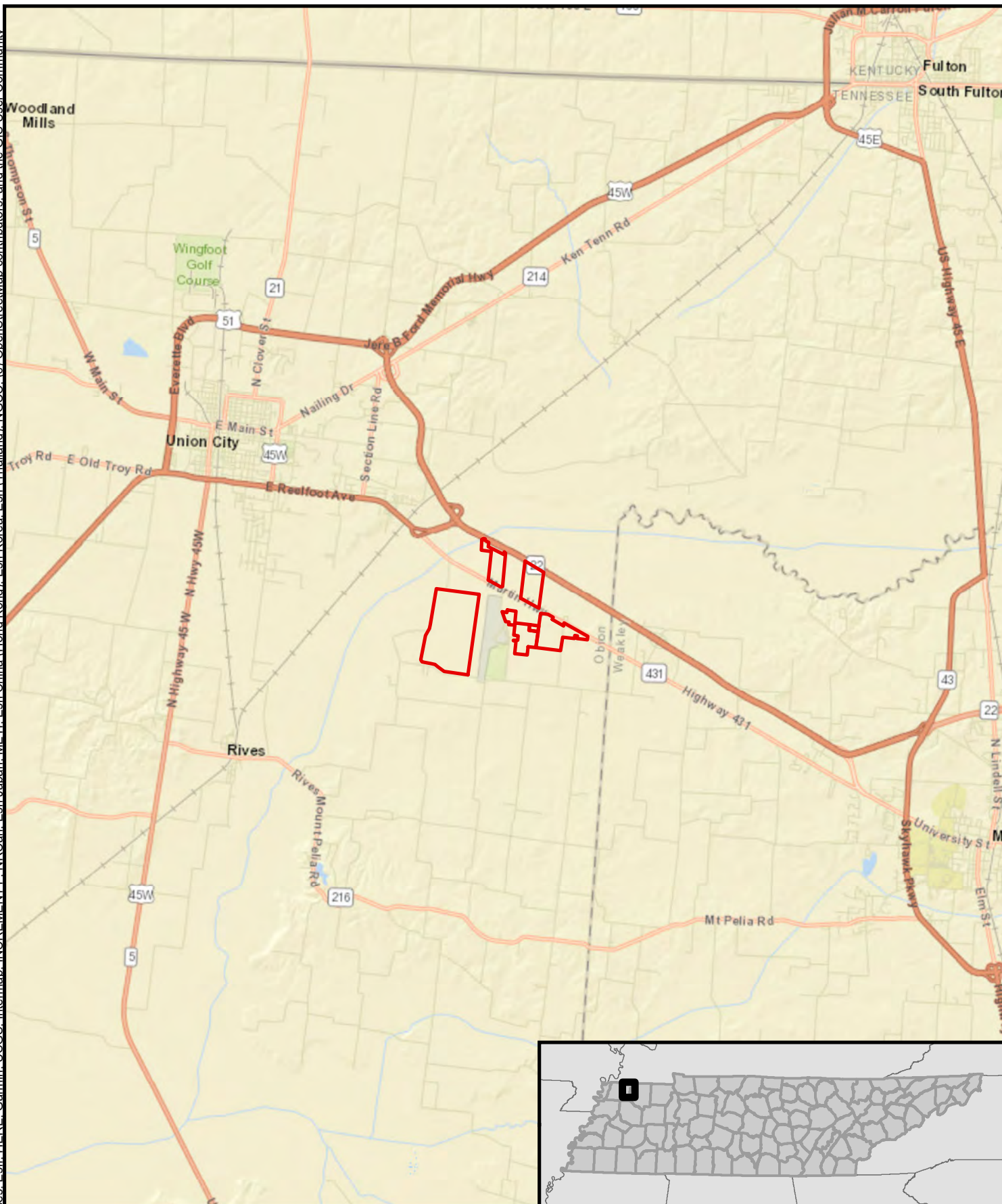
Jesse A Brown  
Senior Environmental Scientist  
Burns and McDonnell

Attachments:

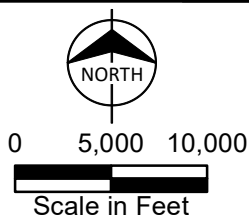
- Appendix A - FIGURES
- Appendix B - ROUTINE WETLAND DETERMINATION DATA FORMS, ATLANTIC  
AND GULF COAST PLAIN REGION
- Appendix C - SITE PHOTOGRAPHS

## **APPENDIX A - FIGURES**





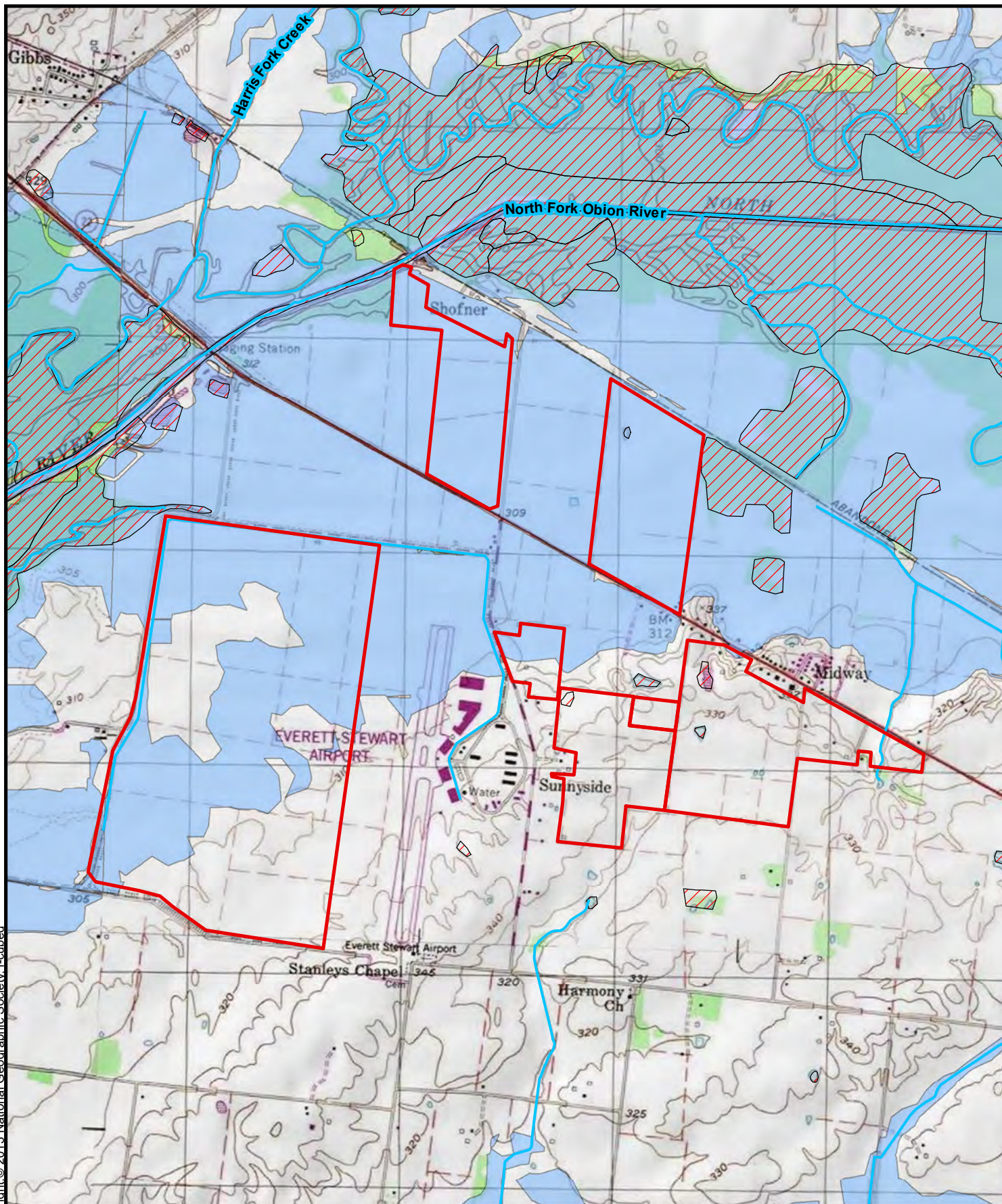
 Parcels



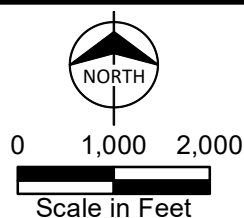
 **BURNS  
MCDONNELL**

Figure A-1  
Site Location Map  
Skyhawk Solar Project





- Parcels
- NHD Flowline
- NWI-Mapped Wetland
- Floodplain



**BURNS  
MCDONNELL**

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



# Map Unit Symbol & Name

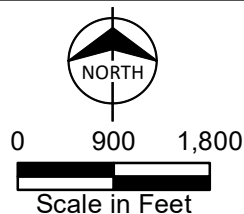
Bd - Birds silt loam\*  
 Ca - Calloway silt loam  
 Ce - Center silt loam, 0 to 2 % slopes\*  
 Cl - Collins silt loam  
 Fa - Falaya silt loam, 0 to 2 % slopes, occasionally flooded, brief duration\*  
 FcB - Felician silt loam, 2 to 5 % slopes, northern phase

FcE2 - Felician 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\*



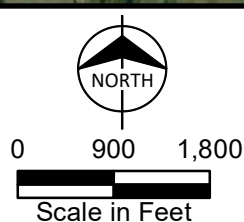
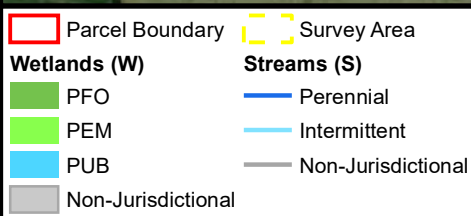
Survey Area  
 Parcels  
 SSURGO Soils Map Unit



BURNS  
 McDONNELL

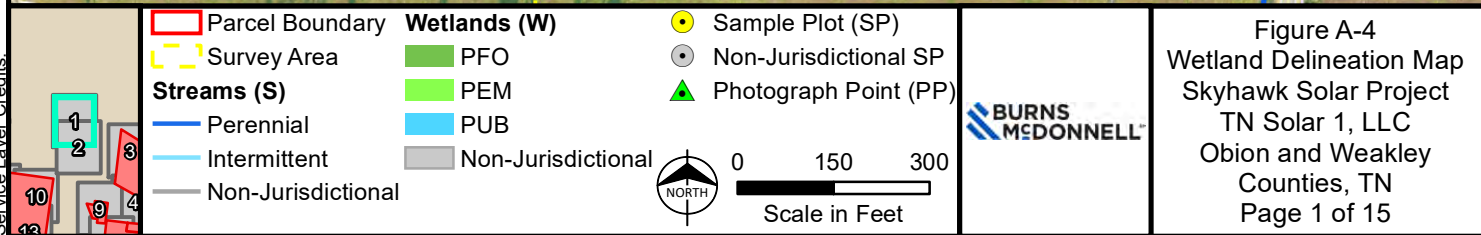
Figure A-3  
 SSURGO Soils Map  
 Skyhawk Solar Project





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







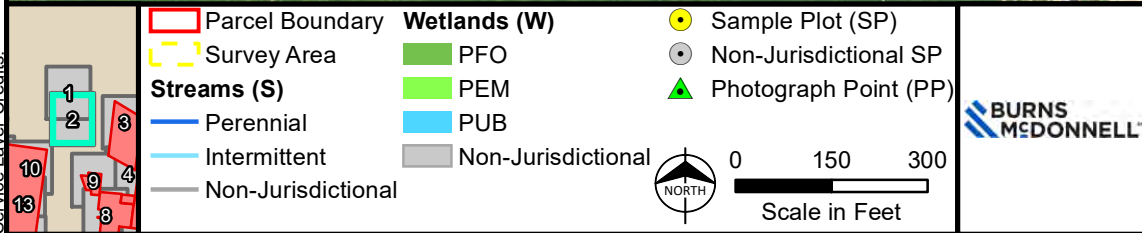


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 2 of 15



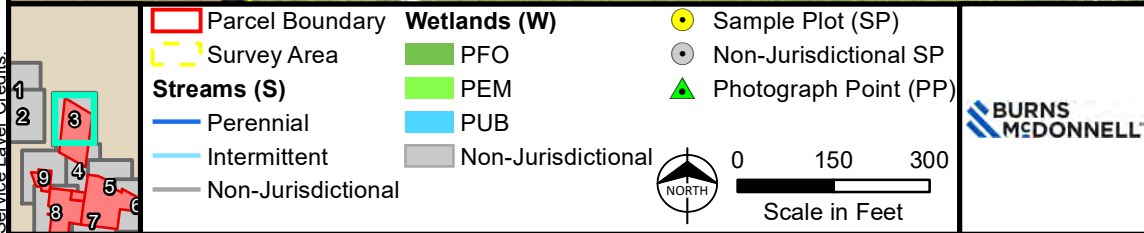
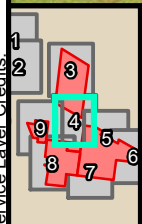


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 3 of 15





**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)

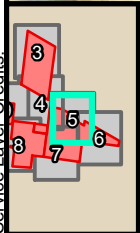
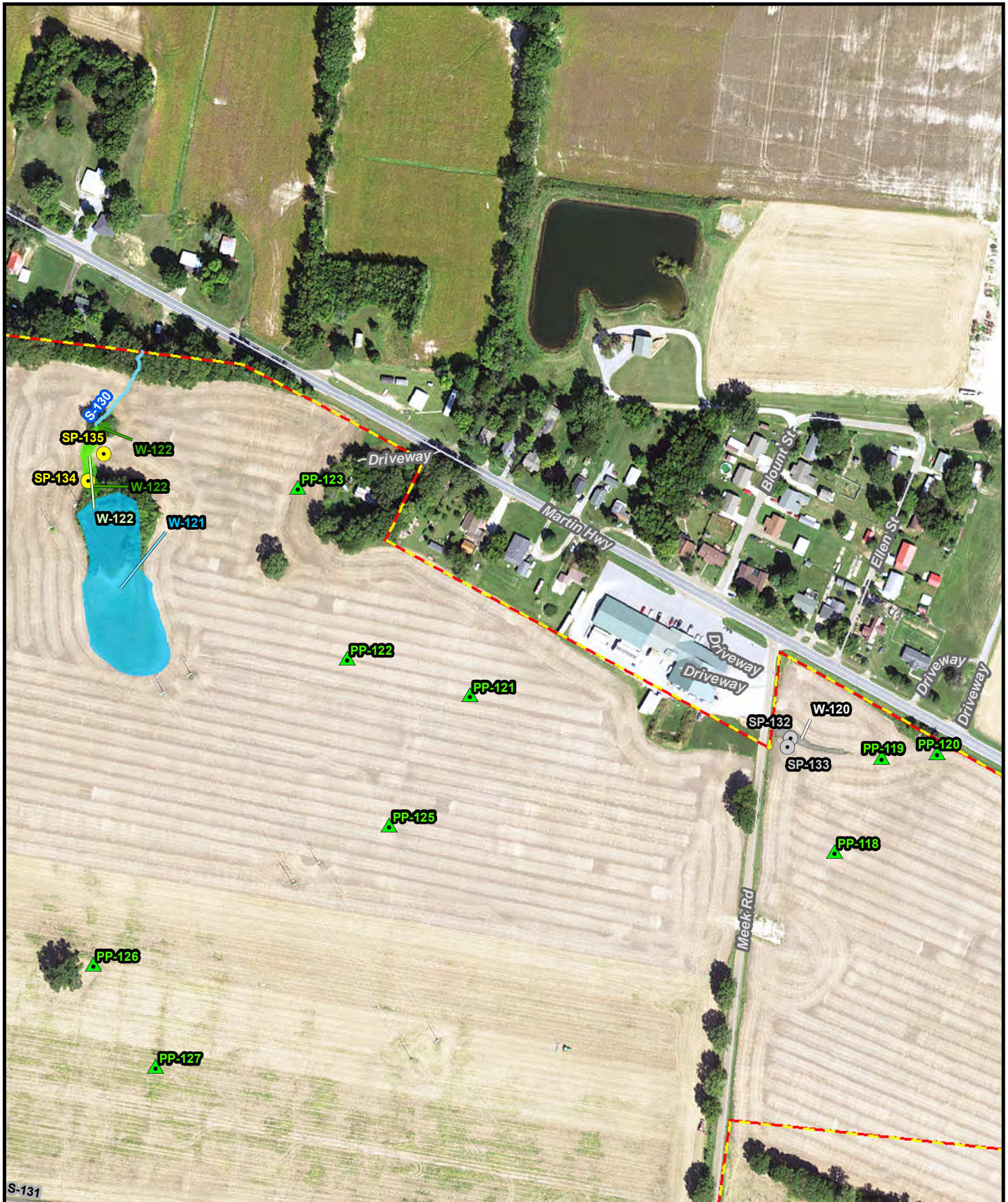


0 150 300  
Scale in Feet

BURNS  
MCDONNELL

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





**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)  
 Scale in Feet  
 0 150 300

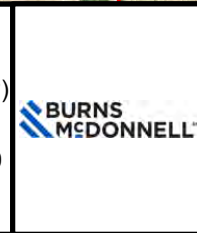


Figure A-4  
 Wetland Delineation Map  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion and Weakley  
 Counties, TN  
 Page 5 of 15



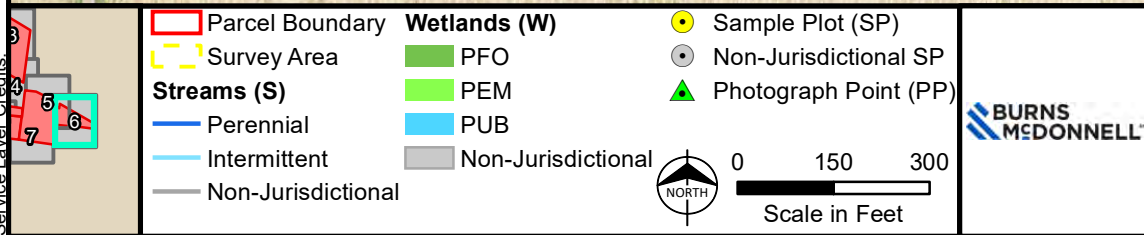
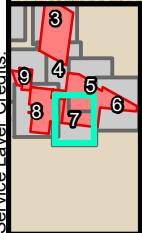


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 6 of 15





**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)

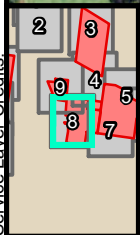


0 150 300  
Scale in Feet

BURNS  
MCDONNELL

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





**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)

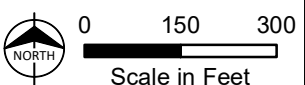
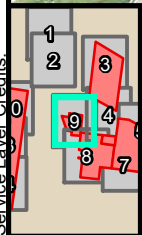


Figure A-4  
 Wetland Delineation Map  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion and Weakley  
 Counties, TN  
 Page 8 of 15





**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)



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



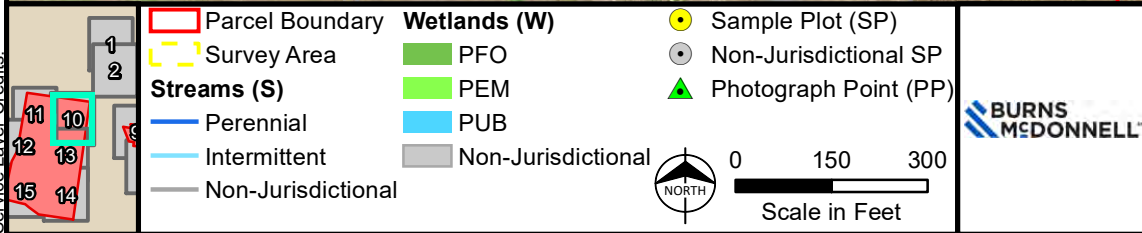
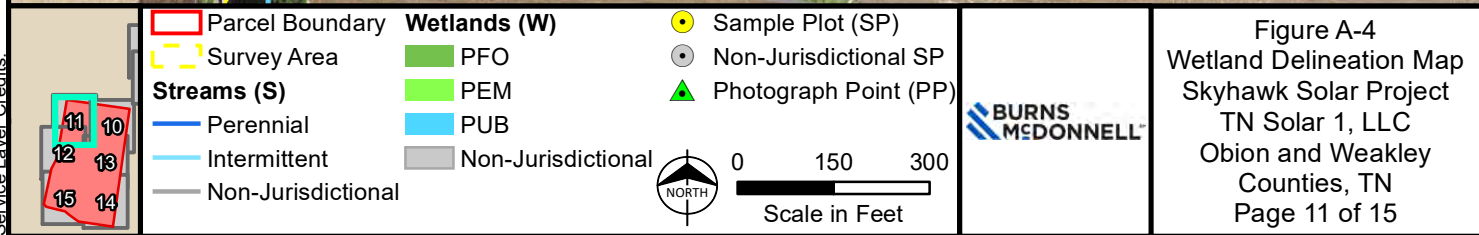


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 10 of 15









	<b>Parcel Boundary</b> [Red dashed line]	<b>Wetlands (W)</b> PFO [Green] PEM [Light Green] PUB [Blue] Non-Jurisdictional [Grey]	<b>Sample Plot (SP)</b> [Yellow circle] Non-Jurisdictional SP [Grey circle] <b>Photograph Point (PP)</b> [Green triangle]
	<b>Streams (S)</b> Perennial [Blue line] Intermittent [Light Blue line] Non-Jurisdictional [Grey line]		

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



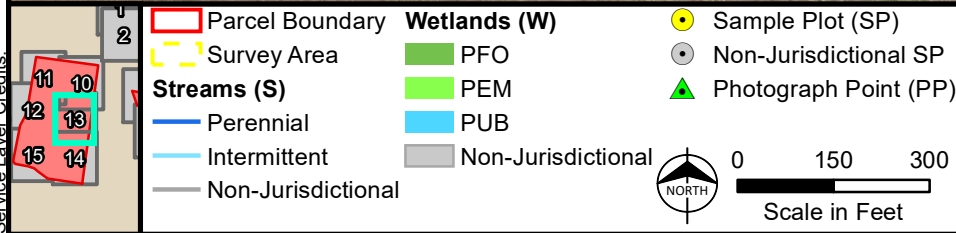


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 13 of 15



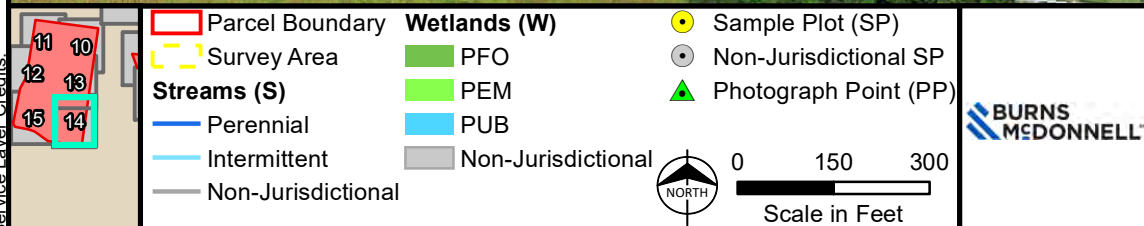


Figure A-4  
Wetland Delineation Map  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley  
Counties, TN  
Page 14 of 15





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



**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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	<b>Field Observations:</b>		
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (includes capillary fringe) Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (inches): _____ _____ _____	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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  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)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Echinochloa muricata</u>	100 %	Y	FACW															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
100 % = Total Cover																		
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.																		

**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



## SOIL

Sampling Point: SP-101

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



Sample Plot (SP)-101  
March 2, 2020  
Obion County, TN



# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					



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

 Sampling Point: SP-102

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>67%%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Agrostis stolonifera</u>	30 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Poa palustris</u>	15 %	Y	FAC															
3. <u>Lamium amplexicaule</u>	15 %	Y	UPL															
4. <u>Allium vineale</u>	10 %	N	FACU															
5. <u>Lamium purpureum</u>	5 %	N	UPL															
6. <u>Geranium carolinianum</u>	5 %	N	UPL															
7. <u>Stellaria media</u>	5 %	N	FACU															
8. <u>Cardamine pensylvanica</u>	3 %	N	FACW															
9. <u>Ranunculus abortivus</u>	3 %	N	FACW															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
91 % = Total Cover																		
50% of total cover: <u>45.5</u> 20% of total cover: <u>18.2</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-102

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	95	7.5YR 4/4	5	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-102  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																						
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																							
<b>Field Observations:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th><th>Yes</th><th>No</th><th>Depth (inches):</th></tr> </thead> <tbody> <tr> <td>Surface Water Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">3</td></tr> <tr> <td>Water Table Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td>Saturation Present? (includes capillary fringe)</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td><b>Wetland Hydrology Present?</b></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td></td></tr> </tbody> </table>				Yes	No	Depth (inches):	Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):																						
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3																						
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																						
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																						
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Cardamine pensylvanica</u>	1 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Poa palustris</u>	1 %	Y	FAC															
3. <u>Agrostis stolonifera</u>	1 %	Y	FACW															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
3 % = Total Cover																		
50% of total cover: <u>1.5</u> 20% of total cover: <u>0.2</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-103

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

[illegible]<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-103  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					



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

 Sampling Point: SP-104

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Poa palustris</u>	<u>65</u> %	<u>Y</u>	<u>FAC</u>															
2. <u>Alopecurus carolinianus</u>	<u>5</u> %	<u>N</u>	<u>FACW</u>															
3. <u>Stellaria media</u>	<u>3</u> %	<u>N</u>	<u>FACU</u>															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
_____ 73 % = Total Cover																		
50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-104

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	88	7.5YR 4/4	12	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-104  
March 2, 2020  
Obion County, TN

# 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? ☐ ☐ ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>4</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	15 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input checked="" type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Alopecurus carolinianus</u>	10 %	Y	FACW															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
25 % = Total Cover																		
50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rooted algae was observed, indicating persistent hydroogy. Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-105

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	93	10YR 4/6	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-105  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																				
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																					
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																				
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 50%;"></td> </tr> <tr> <td>Surface Water Present?</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">Depth (inches): <u>3</u></td> </tr> <tr> <td>Water Table Present?</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td><b>Wetland Hydrology Present?</b></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>		Yes	No		Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Depth (inches): <u>3</u>	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
	Yes	No																					
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Depth (inches): <u>3</u>																				
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>																				
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>																				
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																					
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  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)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Ranunculus abortivus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Alopecurus carolinianus</u>	2 %	Y	FACW															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
_____ 4 % = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>0.8</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.																		

**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

## SOIL

Sampling Point: SP-106

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-106  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)
<u>Primary Indicators (minimum of one required; check all that apply)</u>				
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> )	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)		
		<input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )		

Field Observations:	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Remarks: Hydrology indicators are not met.				



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

 Sampling Point: SP-107

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	35 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Allium vineale</u>	25 %	Y	FACU															
3. <u>Cardamine pensylvanica</u>	5 %	N	FACW															
4. <u>Stellaria media</u>	2 %	N	FACU															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
67 % = Total Cover																		
50% of total cover: <u>33.5</u> 20% of total cover: <u>13.4</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Indicators of hydrophytic vegetation are not met.																		

**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

## SOIL

Sampling Point: SP-107

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	95	10YR 4/4	5	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-107  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  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)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Cardamine pensylvanica</u>	1 %	Y	FACW															
3. <u>Packera aurea</u>	1 %	Y	FACW															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
_____ 4 % = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>0.8</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	92	7.5YR 4/4	8	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-108  
March 2, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  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)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW															
2. <u>Stellaria alsine</u>	2 %	Y	OBL															
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
4 % = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>0.8</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														

## SOIL

Sampling Point: SP-109

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-109  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)			<u>Secondary Indicators (2 or more required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																				
<b>Field Observations:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th><th>Yes</th><th>No</th><th>Depth (inches):</th></tr> </thead> <tbody> <tr> <td>Surface Water Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">2</td></tr> <tr> <td>Water Table Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td>Saturation Present? (includes capillary fringe)</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td><b>Wetland Hydrology Present?</b></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td></td></tr> </tbody> </table>		Yes	No	Depth (inches):	Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):																				
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2																				
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																				
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																				
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																					
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)																
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____ %	x 1 = <u>0</u>																			
FACW species _____ %	x 2 = <u>0</u>																			
FAC species _____ %	x 3 = <u>0</u>																			
FACU species _____ %	x 4 = <u>0</u>																			
UPL species _____ %	x 5 = <u>0</u>																			
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																				
1. <u>Alopecurus carolinianus</u>	3 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																
2. <u>Poa palustris</u>	3 %	Y	FAC																	
3. <u>Stellaria alsine</u>	2 %	Y	OBL																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
9. _____	_____ %	_____	_____																	
10. _____	_____ %	_____	_____																	
11. _____	_____ %	_____	_____																	
12. _____	_____ %	_____	_____																	
_____ 8 % = Total Cover																				
50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: Dominance test is met.																				

**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

## SOIL

Sampling Point: SP-110

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	92	10YR 4/4	8	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-110  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)																				
<u>Primary Indicators (minimum of one required; check all that apply)</u>																								
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																						
<b>Field Observations:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%;"></th> <th style="width: 10%;">Yes</th> <th style="width: 10%;">No</th> <th style="width: 40%;">Depth (inches):</th> </tr> <tr> <td>Surface Water Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Water Table Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td><b>Wetland Hydrology Present?</b></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> </tr> </table>					Yes	No	Depth (inches):	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
	Yes	No	Depth (inches):																					
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																						
Remarks: Hydrology indicators are not met.																								



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

 Sampling Point: SP-111

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Poa palustris</u>	60 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Allium vineale</u>	10 %	N	FACU															
3. <u>Cardamine pensylvanica</u>	10 %	N	FACW															
4. <u>Erigeron annuus</u>	5 %	N	FACU															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
85 % = Total Cover																		
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-111

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	93	10YR 4/4	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-111  
March 2, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>2</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  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)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
2. <u>Ranunculus abortivus</u>	2 %	Y	FACW															
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
4 % = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>0.8</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/2	90	10YR 4/6	10	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-112  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicator C8 is met.					



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

 Sampling Point: SP-113

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> % (A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> % (A)	<u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	65 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Allium vineale</u>	10 %	N	FACU															
3. <u>Cardamine pensylvanica</u>	5 %	N	FACW															
4. <u>Erigeron annuus</u>	5 %	N	FACU															
5. <u>Taraxacum officinale</u>	5 %	N	FACU															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
90 % = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/2	80	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/1	10	D	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-113  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>				<u>Secondary Indicators (2 or more required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  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)																
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	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 = _____	
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 = _____																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 feet</u> )																				
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																
2. <u>Ranunculus abortivus</u>	1 %	Y	FACW																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
9. _____	_____ %	_____	_____																	
10. _____	_____ %	_____	_____																	
11. _____	_____ %	_____	_____																	
12. _____	_____ %	_____	_____																	
_____ 3 % = Total Cover																				
50% of total cover: <u>1.5</u> 20% of total cover: <u>0.6</u>																				
Woody Vine Stratum (Plot size: <u>30 feet</u> )																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: Rapid test is met.																				

**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

## SOIL

Sampling Point: SP-114

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/1	88	7.5YR 4/6	12	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-114  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					



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

 Sampling Point: SP-115

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	<u>95</u> %	<u>Y</u>	<u>FAC</u>															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
_____ 95 % = Total Cover																		
50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ Rapid Test for Hydrophytic Vegetation  
☒ Dominance Test is >50%  
☐ Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup> 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

## SOIL

Sampling Point: SP-115

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	85	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/1	5	D	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-115  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)			<u>Secondary Indicators (2 or more required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	
<b>Field Observations:</b> Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Water Table Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (includes capillary fringe) <b>Wetland Hydrology Present?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (inches): <u>3</u> <u>0</u> <u>0</u>	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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	5 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Cardamine pensylvanica</u>	3 %	Y	FACW															
3. <u>Alopecurus carolinianus</u>	3 %	Y	FACW															
4. <u>Ranunculus abortivus</u>	2 %	N	FACW															
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
13 % = Total Cover																		
50% of total cover: <u>6.5</u> 20% of total cover: <u>2.6</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-116

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/1	92	7.5YR 4/4	8	C	M/PL	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-116  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicator C8 is met.					



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

 Sampling Point: SP-117

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	80 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input checked="" type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Allium vineale</u>	10 %	N	FACU															
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
90 % = Total Cover																		
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-117

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/3	83	10YR 4/2	15	D	M	silty clay loam	
			10YR 4/6	2	C	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-117  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																						
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	<b>Field Observations:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th><th>Yes</th><th>No</th><th>Depth (inches):</th></tr> </thead> <tbody> <tr> <td>Surface Water Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">4</td></tr> <tr> <td>Water Table Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td>Saturation Present? (includes capillary fringe)</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">0</td></tr> <tr> <td><b>Wetland Hydrology Present?</b></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td></td></tr> </tbody> </table>				Yes	No	Depth (inches):	Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Yes	No	Depth (inches):																						
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4																						
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																						
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																						
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  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)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = _____	FACW species _____ %	x 2 = _____	FAC species _____ %	x 3 = _____	FACU species _____ %	x 4 = _____	UPL species _____ %	x 5 = _____	Column Totals: _____ 0 %	(A) _____ 0 (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = _____																	
FACW species _____ %	x 2 = _____																	
FAC species _____ %	x 3 = _____																	
FACU species _____ %	x 4 = _____																	
UPL species _____ %	x 5 = _____																	
Column Totals: _____ 0 %	(A) _____ 0 (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Ranunculus abortivus</u>	2 %	Y	FACW															
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
4 % = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>0.8</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																		
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-118  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (includes capillary fringe) Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (inches): _____ _____ _____	_____ _____ _____			
Remarks: Hydrology indicators B3 and C8 are met.					



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

 Sampling Point: SP-119

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>67%%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
<u>0 %</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> % (A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> % (A)	<u>0</u> (B)																	
<u>0 %</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
<u>0 %</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Poa palustris</u>	15 %	Y	FAC															
2. <u>Ranunculus abortivus</u>	15 %	Y	FACW															
3. <u>Stellaria media</u>	15 %	Y	FACU															
4. <u>Allium vineale</u>	5 %	N	FACU															
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
<u>50 %</u> = Total Cover 50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
<u>0 %</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.				<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														

## SOIL

Sampling Point: SP-119

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/1	85	7.5YR 4/4	15	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-119  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicator C8 is met.					



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

 Sampling Point: SP-120

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Poa palustris</u>	40 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Stellaria media</u>	10 %	N	FACU															
3. <u>Lamium amplexicaule</u>	10 %	N	UPL															
4. <u>Allium vineale</u>	5 %	N	FACU															
5. <u>Ranunculus abortivus</u>	5 %	N	FACW															
6. <u>Packera aurea</u>	3 %	N	FACW															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
73 % = Total Cover																		
50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	_____ %	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.)

[illegible]<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-120  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																				
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																					
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																				
<table border="0" style="width: 100%;"> <tr> <td style="width: 60%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 20%; text-align: center;">Depth (inches):</td> </tr> <tr> <td>Surface Water Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">_____</td> </tr> <tr> <td>Water Table Present?</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">_____ 2 _____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">_____ 2 _____</td> </tr> <tr> <td><b>Wetland Hydrology Present?</b></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> </tr> </table>		Yes	No	Depth (inches):	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ 2 _____	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ 2 _____	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Remarks: Hydrology indicator A2, A3, and C3 are met.		
	Yes	No	Depth (inches):																				
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																				
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ 2 _____																				
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ 2 _____																				
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																					



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

 Sampling Point: SP-121

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Allium vineale</u>	15 %	Y	FACU	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Stellaria media</u>	15 %	Y	FACU															
3. <u>Lamium amplexicaule</u>	15 %	Y	UPL															
4. <u>Poa palustris</u>	10 %	N	FAC															
5. <u>Ranunculus abortivus</u>	5 %	N	FACW															
6. <u>Geranium carolinianum</u>	5 %	N	UPL															
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
65 % = Total Cover																		
50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Indicators of hydrophytic vegetation are not met.				Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No														

## SOIL

Sampling Point: SP-121

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/1	90	7.5YR 4/6	10	C	M/PL	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-121  
March 3, 2020  
Obion County, TN

# 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? ☐ ☐ ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																						
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																							
<b>Field Observations:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <th></th><th>Yes</th><th>No</th><th>Depth (inches):</th></tr> <tr> <td>Surface Water Present?</td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td></tr> <tr> <td>Water Table Present?</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">3</td></tr> <tr> <td>Saturation Present? (includes capillary fringe)</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td style="text-align: center;">3</td></tr> <tr> <td><b>Wetland Hydrology Present?</b></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td></td></tr> </table>				Yes	No	Depth (inches):	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):																						
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																							
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3																						
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3																						
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	%			<b>Dominance Test worksheet:</b>  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)																
2. _____	%																			
3. _____	%																			
4. _____	%																			
5. _____	%																			
6. _____	%																			
7. _____	%																			
8. _____	%																			
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	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 = _____	
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 = _____																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																				
1. _____	%																			
2. _____	%																			
3. _____	%																			
4. _____	%																			
5. _____	%																			
6. _____	%																			
7. _____	%																			
8. _____	%																			
0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 feet</u> )																				
1. <u>Packera aurea</u>	10 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																
2. _____	%																			
3. _____	%																			
4. _____	%																			
5. _____	%																			
6. _____	%																			
7. _____	%																			
8. _____	%																			
9. _____	%																			
10. _____	%																			
11. _____	%																			
12. _____	%																			
10 % = Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
Woody Vine Stratum (Plot size: <u>30 feet</u> )																				
1. _____	%																			
2. _____	%																			
3. _____	%																			
4. _____	%																			
5. _____	%																			
0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: Rapid test is met.																				

**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

## SOIL

Sampling Point: SP-122

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/1	86	7.5YR 4/4	12	C	M	silty clay loam	
			N 2.5/	2	C	M	Manganese concretions	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-122  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																								
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 20%;">Field Observations:</th> <th style="width: 10%;">Yes</th> <th style="width: 10%;">No</th> <th style="width: 10%;">Depth (inches):</th> <th style="width: 50%;">Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:</th> </tr> <tr> <td>Surface Water Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> <td rowspan="4"></td> </tr> <tr> <td>Water Table Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>_____</td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table>			Field Observations:	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Field Observations:	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																							
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																								
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																								
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																								
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>																									
Remarks: Hydrology indicators are not met.																											



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

 Sampling Point: SP-123

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Bromus inermis</u>	30 %	Y	UPL															
2. <u>Stellaria media</u>	3 %	N	FACU															
3. <u>Packera aurea</u>	2 %	N	FACW															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
35 % = Total Cover																		
50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Indicators of hydrophytic vegetation are not met.																		

**Hydrophytic Vegetation Indicators:**  
☐ Rapid Test for Hydrophytic Vegetation  
☐ Dominance Test is >50%  
☐ Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup> 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

## SOIL

Sampling Point: SP-123

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/3	100					silty clay loam	
4-16	10YR 4/1	90	10YR 4/4	10	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-123  
March 3, 2020  
Obion County, TN

# 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)  
Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>			<u>Secondary Indicators (2 or more required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>				
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> )		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)		<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Shallow Aquitard (D3)	
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)			<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
			<input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	
<b>Field Observations:</b>	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>2</u>	
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>	
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  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)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Echinochloa muricata</u>	90 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
90 % = Total Cover																		
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.																		

**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

## SOIL

Sampling Point: SP-124

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/1	85	7.5YR 4/4	15	C	M/PL	silty clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-124  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
Significantly Disturbed? ☐ ☐ ☐  
Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>			<u>Secondary Indicators (2 or more required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>				
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> )		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)		<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)			<input type="checkbox"/> FAC-Neutral Test (D5)	
			<input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	
<b>Field Observations:</b>	Yes	No	Depth (inches):	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Remarks: Hydrology indicators are not met.				



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

 Sampling Point: SP-125

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>33%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Bromus inermis</u>	<u>60</u> %	<u>Y</u>	<u>UPL</u>															
2. <u>Phytolacca americana</u>	<u>10</u> %	<u>N</u>	<u>FACU</u>															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
70 % = Total Cover																		
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. <u>Smilax rotundifolia</u>	<u>10</u> %	<u>Y</u>	<u>FAC</u>															
2. <u>Lonicera japonica</u>	<u>10</u> %	<u>Y</u>	<u>FACU</u>															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
20 % = Total Cover																		
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
Remarks: Indicators of hydrophytic vegetation are not met.																		

**Hydrophytic Vegetation Indicators:**  
☐ Rapid Test for Hydrophytic Vegetation  
☐ Dominance Test is >50%  
☐ Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
  
<sup>1</sup> 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

## SOIL

Sampling Point: SP-125

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	75	10YR 4/3	25	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-125  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Ficaria verna</u>	2 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
2 % = Total Cover																		
50% of total cover: <u>1</u> 20% of total cover: <u>0.4</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														

## SOIL

Sampling Point: SP-126

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	2.5Y 6/1	80	7.5YR 4/4	20	C	M	silty clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-126  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																								
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;"> <b>Field Observations:</b> </td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> <td style="width: 10%; text-align: center;">Depth (inches):</td> <td style="width: 40%;"></td> </tr> <tr> <td>Surface Water Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">_____</td> <td rowspan="4" style="vertical-align: top;">Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:</td> </tr> <tr> <td>Water Table Present?</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">_____</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">_____</td> </tr> <tr> <td><b>Wetland Hydrology Present?</b></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td></td> </tr> </table>			<b>Field Observations:</b>	Yes	No	Depth (inches):		Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Field Observations:</b>	Yes	No	Depth (inches):																								
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:																							
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																								
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____																								
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																									
Remarks: Hydrology indicators are not met.																											



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

 Sampling Point: SP-127

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> % (A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> % (A)	<u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	85 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Lamium amplexicaule</u>	7 %	N	UPL															
3. <u>Stellaria media</u>	5 %	N	FACU															
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
97 % = Total Cover																		
50% of total cover: <u>48.5</u> 20% of total cover: <u>19.4</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														

## SOIL

Sampling Point: SP-127

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/3	80	10YR 4/4	10	C	M	silty clay loam	
			10YR 4/2	10	D	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-127  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  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)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
_____ 2 % = Total Cover																		
50% of total cover: <u>1</u> 20% of total cover: <u>0.4</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.																		

**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

## SOIL

Sampling Point: SP-128

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	2.5Y 6/1	90	7.5YR 4/4	10	C	M	silty clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-128  
March 3, 2020  
Obion County, TN



# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					

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

 Sampling Point: SP-129

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)																
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____ %	x 1 = <u>0</u>																			
FACW species _____ %	x 2 = <u>0</u>																			
FAC species _____ %	x 3 = <u>0</u>																			
FACU species _____ %	x 4 = <u>0</u>																			
UPL species _____ %	x 5 = <u>0</u>																			
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																			
Prevalence Index = B/A = _____																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 feet</u> )																				
1. <u>Poa palustris</u>	95 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input checked="" type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																
2. <u>Lamium amplexicaule</u>	2 %	N	UPL																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
6. _____	_____ %	_____	_____																	
7. _____	_____ %	_____	_____																	
8. _____	_____ %	_____	_____																	
9. _____	_____ %	_____	_____																	
10. _____	_____ %	_____	_____																	
11. _____	_____ %	_____	_____																	
12. _____	_____ %	_____	_____																	
_____ 97 % = Total Cover																				
50% of total cover: <u>48.5</u> 20% of total cover: <u>19.4</u>																				
Woody Vine Stratum (Plot size: <u>30 feet</u> )																				
1. _____	_____ %	_____	_____																	
2. _____	_____ %	_____	_____																	
3. _____	_____ %	_____	_____																	
4. _____	_____ %	_____	_____																	
5. _____	_____ %	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: Dominance test is met.																				

**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

## SOIL

Sampling Point: SP-129

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	93	10YR 4/4	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-129  
March 3, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>2</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  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)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____	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)
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)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Ranunculus abortivus</u>	1 %	Y	FACW															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
1 % = Total Cover																		
50% of total cover: <u>0.5</u> 20% of total cover: <u>0.2</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Rapid test is met.																		

**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



## SOIL

Sampling Point: SP-130

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	2.5Y 6/1	90	7.5YR 4/6	10	C	M	silty clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-130  
March 3, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					



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

 Sampling Point: SP-131

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	100 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
100 % = Total Cover																		
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/2	95	10YR 4/4	5	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-131  
March 3, 2020  
Obion County, TN



# 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? ☐ ☒ ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

Remarks: Hydrology indicators B10 and D2 are met.

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

 Sampling Point: SP-132

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____ %	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Panicum virgatum</u>	<u>95</u> %	<u>Y</u>	<u>FAC</u>															
2. <u>Rumex crispus</u>	<u>2</u> %	<u>N</u>	<u>FAC</u>															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
6. _____	_____ %	_____	_____															
7. _____	_____ %	_____	_____															
8. _____	_____ %	_____	_____															
9. _____	_____ %	_____	_____															
10. _____	_____ %	_____	_____															
11. _____	_____ %	_____	_____															
12. _____	_____ %	_____	_____															
_____ 97 % = Total Cover																		
50% of total cover: <u>0.5</u> 20% of total cover: <u>0.2</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	_____ %	_____	_____															
2. _____	_____ %	_____	_____															
3. _____	_____ %	_____	_____															
4. _____	_____ %	_____	_____															
5. _____	_____ %	_____	_____															
_____ 0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-132

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 4/3	98	10YR 4/4	2	C	M	silty clay loam	
8-16	10YR 4/3	85	10YR 5/1	10	D	M	silty clay loam	
			10YR 4/4	5	C	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-132  
March 4, 2020  
Obion County, TN

# 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)  
 Significantly Disturbed? Vegetation ☐ Soil ☐ Hydrology ☐ Are "Normal Circumstances" present? ☐ Yes ☒ No  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	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.
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (includes capillary fringe) Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (inches): _____ _____ _____				
Remarks: Hydrology indicators are not met.					

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

 Sampling Point: SP-133

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%			<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> % (A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> % (A)	<u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%																	
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	85 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Lamium amplexicaule</u>	5 %	N	UPL															
3. <u>Stellaria media</u>	5 %	N	FACU															
4. _____	%																	
5. _____	%																	
6. _____	%																	
7. _____	%																	
8. _____	%																	
9. _____	%																	
10. _____	%																	
11. _____	%																	
12. _____	%																	
95 % = Total Cover																		
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	%																	
3. _____	%																	
4. _____	%																	
5. _____	%																	
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/3	100					silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-133  
March 4, 2020  
Obion County, TN

# 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: Felician 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)  
 Significantly Disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0.5</u>		
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>0</u>		
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
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

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 feet</u> )																		
1. <u>Acer rubrum</u>	<u>50 %</u>	<u>Y</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	<u>%</u>	_____	_____															
3. _____	<u>%</u>	_____	_____															
4. _____	<u>%</u>	_____	_____															
5. _____	<u>%</u>	_____	_____															
6. _____	<u>%</u>	_____	_____															
7. _____	<u>%</u>	_____	_____															
8. _____	<u>%</u>	_____	_____															
<u>50 %</u> = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 feet</u> )																		
1. _____	<u>%</u>	_____	_____															
2. _____	<u>%</u>	_____	_____															
3. _____	<u>%</u>	_____	_____															
4. _____	<u>%</u>	_____	_____															
5. _____	<u>%</u>	_____	_____															
6. _____	<u>%</u>	_____	_____															
7. _____	<u>%</u>	_____	_____															
8. _____	<u>%</u>	_____	_____															
<u>0 %</u> = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum</b> (Plot size: <u>5 feet</u> )																		
1. <u>Echinochloa muricata</u>	<u>40 %</u>	<u>Y</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input checked="" type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>														
2. <u>Panicum dichotomiflorum</u>	<u>15 %</u>	<u>Y</u>	<u>FACW</u>															
3. _____	<u>%</u>	_____	_____															
4. _____	<u>%</u>	_____	_____															
5. _____	<u>%</u>	_____	_____															
6. _____	<u>%</u>	_____	_____															
7. _____	<u>%</u>	_____	_____															
8. _____	<u>%</u>	_____	_____															
9. _____	<u>%</u>	_____	_____															
10. _____	<u>%</u>	_____	_____															
11. _____	<u>%</u>	_____	_____															
12. _____	<u>%</u>	_____	_____															
<u>55 %</u> = Total Cover																		
50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 feet</u> )																		
1. _____	<u>%</u>	_____	_____															
2. _____	<u>%</u>	_____	_____															
3. _____	<u>%</u>	_____	_____															
4. _____	<u>%</u>	_____	_____															
5. _____	<u>%</u>	_____	_____															
<u>0 %</u> = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/1	85	7.5YR 4/6	15	C	M/PL	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-134  
March 4, 2020  
Obion County, TN



# 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: Felician 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydric Soil Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)
<u>Primary Indicators (minimum of one required; check all that apply)</u>				
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )
<b>Field Observations:</b>				
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (includes capillary fringe)				
<b>Wetland Hydrology Present?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Remarks: Hydrology indicators are not met.				

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

 Sampling Point: SP-135

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5 feet</u> )																		
1. <u>Poa palustris</u>	35 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Lamium purpureum</u>	35 %	Y	UPL															
3. <u>Lamium amplexicaule</u>	15 %	N	UPL															
4. <u>Stellaria media</u>	10 %	N	FACU															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
95 % = Total Cover																		
50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>																		
Woody Vine Stratum (Plot size: <u>30 feet</u> )																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Indicators of hydrophytic vegetation are not met.																		

**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

## SOIL

Sampling Point: SP-135

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/3	100					silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-135  
March 4, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>																				
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )																					
<b>Field Observations:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th>Depth (inches):</th> </tr> </thead> <tbody> <tr> <td>Surface Water Present?</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td style="text-align: center;">2</td> </tr> <tr> <td>Water Table Present?</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td style="text-align: center;">0</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td style="text-align: center;">0</td> </tr> <tr> <td><b>Wetland Hydrology Present?</b></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table>		Yes	No	Depth (inches):	Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:	
	Yes	No	Depth (inches):																				
Surface Water Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2																				
Water Table Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																				
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0																				
<b>Wetland Hydrology Present?</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																					
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: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  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)																
2. _____	%	_____	_____																	
3. _____	%	_____	_____																	
4. _____	%	_____	_____																	
5. _____	%	_____	_____																	
6. _____	%	_____	_____																	
7. _____	%	_____	_____																	
8. _____	%	_____	_____																	
_____ 0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 %</td> <td>(A) _____ 0 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	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 = _____	
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 = _____																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )																				
1. _____	%	_____	_____																	
2. _____	%	_____	_____																	
3. _____	%	_____	_____																	
4. _____	%	_____	_____																	
5. _____	%	_____	_____																	
6. _____	%	_____	_____																	
7. _____	%	_____	_____																	
8. _____	%	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5 feet</u> )																				
1. <u>Alopecurus carolinianus</u>	2 %	Y	FACW	<b>Hydrophytic Vegetation Indicators:</b>  <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation  <input type="checkbox"/> Dominance Test is >50%  <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <small><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>																
2. <u>Ranunculus abortivus</u>	2 %	Y	FACW																	
3. _____	%	_____	_____																	
4. _____	%	_____	_____																	
5. _____	%	_____	_____																	
6. _____	%	_____	_____																	
7. _____	%	_____	_____																	
8. _____	%	_____	_____																	
9. _____	%	_____	_____																	
10. _____	%	_____	_____																	
11. _____	%	_____	_____																	
12. _____	%	_____	_____																	
_____ 4 % = Total Cover																				
50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>																				
Woody Vine Stratum (Plot size: <u>30 feet</u> )																				
1. _____	%	_____	_____																	
2. _____	%	_____	_____																	
3. _____	%	_____	_____																	
4. _____	%	_____	_____																	
5. _____	%	_____	_____																	
_____ 0 % = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: Rapid test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																



## SOIL

Sampling Point: SP-136

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/2	93	10YR 4/4	7	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-136  
March 2, 2020  
Obion County, TN

# 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 Are "Normal Circumstances" present? ☐ Yes ☒ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☒ (If needed, explain any answers in Remarks)

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

	Yes	No	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.
Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hydric Soil Present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Wetland Hydrology Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the Sampled Area within a Wetland?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) ( <b>LRR U</b> ) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum Moss (D8) ( <b>LRR T, U</b> )			
<b>Field Observations:</b>			Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:		
	Yes	No	Depth (inches):		
Surface Water Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Water Table Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
Saturation Present? (includes capillary fringe)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____		
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Remarks: Hydrology indicators are not met.					



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

 Sampling Point: SP-137

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	%	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> %</td> <td>(A) <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____ %	x 1 = <u>0</u>	FACW species _____ %	x 2 = <u>0</u>	FAC species _____ %	x 3 = <u>0</u>	FACU species _____ %	x 4 = <u>0</u>	UPL species _____ %	x 5 = <u>0</u>	Column Totals: <u>0</u> %	(A) <u>0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____ %	x 1 = <u>0</u>																	
FACW species _____ %	x 2 = <u>0</u>																	
FAC species _____ %	x 3 = <u>0</u>																	
FACU species _____ %	x 4 = <u>0</u>																	
UPL species _____ %	x 5 = <u>0</u>																	
Column Totals: <u>0</u> %	(A) <u>0</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
6. _____	%	_____	_____															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>																		
1. <u>Poa palustris</u>	50 %	Y	FAC	<b>Hydrophytic Vegetation Indicators:</b>  <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic														
2. <u>Alopecurus carlinianus</u>	15 %	N	FACW															
3. <u>Cardamine pensylvanica</u>	5 %	N	FACW															
4. <u>Erigeron annuus</u>	5 %	N	FACU															
5. <u>Stellaria media</u>	5 %	N	FACU															
6. <u>Lamium amplexicaule</u>	2 %	N	UPL															
7. _____	%	_____	_____															
8. _____	%	_____	_____															
9. _____	%	_____	_____															
10. _____	%	_____	_____															
11. _____	%	_____	_____															
12. _____	%	_____	_____															
82 % = Total Cover																		
50% of total cover: <u>41</u> 20% of total cover: <u>16.4</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>																		
1. _____	%	_____	_____															
2. _____	%	_____	_____															
3. _____	%	_____	_____															
4. _____	%	_____	_____															
5. _____	%	_____	_____															
0 % = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: Dominance test is met.																		

**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

## SOIL

Sampling Point: SP-137

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/2	92	10YR 4/6	8	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-137  
March 2, 2020  
Obion County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>✓</u> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>3</u></td> <td>x 1 = <u>3</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>3</u> (A)</td> <td><u>3</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>3</u>	x 1 = <u>3</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>3</u> (A)	<u>3</u> (B)	Prevalence Index = B/A = <u>1</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>3</u>	x 1 = <u>3</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>3</u> (A)	<u>3</u> (B)																			
Prevalence Index = B/A = <u>1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: <u>30 ft r</u> )																				
1. <u>Ludwigia palustris</u>	<u>3</u>	<u>✓</u>	<u>OBL</u>																	
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: <u>2</u> 20% of total cover: <u>1</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
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).																				

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☒ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_

## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/1	85	10YR 4/6	15	C	PL / M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: super saturatedDepth (inches): 8Hydric 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.

TN Solar 1, LLC  
Skyhawk Solar



SP-237  
April 16, 2020  
Obion County, TN

# 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 ☒ 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>430</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.9</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>430</u> (B)	Prevalence Index = B/A = <u>3.9</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>100</u>	x 4 = <u>400</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>430</u> (B)																			
Prevalence Index = B/A = <u>3.9</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Hordeum pusillum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Poa annua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
3. <u>Ranunculus sardous</u>	<u>5</u>	_____	<u>FAC</u>																	
4. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FAC</u>																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
110% = Total Cover																				
50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-238  
April 16, 2020  
Obion County, TN

# 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 ☒ 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>40</u> (A)</td> <td><u>70</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.8</u>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>40</u> (A)	<u>70</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>30</u>	x 1 = <u>30</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>40</u> (A)	<u>70</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Lemna minor</u>	<u>30</u>	<u>✓</u>	<u>OBL</u>															
2. <u>Hordeum pusillum</u>	<u>10</u>	<u>✓</u>	<u>FACU</u>															
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: <u>20</u> 20% of total cover: <u>8</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Prevalence index is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_

## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input checked="" type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-239  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>510</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>510</u> (B)	Prevalence Index = B/A = <u>3.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>105</u>	x 4 = <u>420</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>135</u> (A)	<u>510</u> (B)																			
Prevalence Index = B/A = <u>3.8</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Hordeum pusillum</u>	60	✓	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Poa annua</u>	45	✓	FACU																	
3. <u>Ranunculus sardous</u>	20		FAC																	
4. <u>Cerastium fontanum</u>	5		FAC																	
5. <u>Valerianella radiata</u>	5		FAC																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
135% = Total Cover																				
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.																				

**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 ✓

## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-240  
April 16, 2020  
Obion County, TN

# 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 ☒ 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Quercus phellos</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
70% = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>60</u></td> <td>x 1 = <u>60</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td><u>325</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.9</u>	Total % Cover of:	Multiply by:	OBL species <u>60</u>	x 1 = <u>60</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>170</u> (A)	<u>325</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>60</u>	x 1 = <u>60</u>																	
FACW species <u>70</u>	x 2 = <u>140</u>																	
FAC species <u>35</u>	x 3 = <u>105</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>170</u> (A)	<u>325</u> (B)																	
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
1. _____	<u>0</u>																	
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Juncus effusus</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. <u>Toxicodendron radicans</u>	<u>15</u>		<u>FAC</u>															
3. <u>Rubus argutus</u>	<u>5</u>		<u>FAC</u>															
4. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>															
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
9. _____	<u>0</u>																	
10. _____	<u>0</u>																	
11. _____	<u>0</u>																	
12. _____	<u>0</u>																	
85% = Total Cover																		
50% of total cover: <u>43</u> 20% of total cover: <u>17</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Smilax rotundifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														
2. <u>Vitis rotundifolia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
15% = Total Cover																		
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																		
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

TN Solar 1, LLC  
Skyhawk Solar



SP-288  
April 20, 2020  
Obion County, TN

## **APPENDIX C - HYDROLOGIC DETERMINATION FIELD DATA SHEETS**



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 3/2/20
Assessors/Affiliation:		Project ID : Skyhawk Solar Project
Site Name/Description: S-102		
Site Location: Obion County Property west of Everett-Stewart Regional Airport		
HUC (12 digit): 080102020208		Lat/Long: 36°23'7.21"N. 88°59'17.00"W
Previous Rainfall (7-days) : 0.97 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Center silt loam, 0 to 2 percent slopes and Routon-Bonn silt loam complex Source:NRCS/USDA		
Surrounding Land Use : Agriculture to the north, south, and west; regional airport to the east,		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <u>Severe</u> Moderate Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 16**

#### Justification / Notes :

A very recent alteration (see photo ID C-1) has re-channelized this watercourse into a straight agricultural ditch. Likely part of annual maintenance. Surrounding vegetation is soy beans which is annually planted and farmed. No vegetation or roots present because it was recently excavated. Manmade agricultural drainage. Was excavated shortly before March 2, 2020. The reach of this conveyance is approximately 2,385 feet. It flows into a perennial unnamed tributary to the North Fork Obion River.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 4.5)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	✓ 3
2. Sinuous channel	✓ 0	1	2	3
3. In-channel structure: riffle-pool sequences	✓ 0	1	2	3
4. Sorting of soil textures or other substrate	✓ 0	1	2	3
5. Active/relic floodplain	0	0.5	1	✓ 1.5
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	✓ 0	0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	✓ 0	1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	✓ 0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	✓ No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 5.5)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	✓ 2	3
15. Water in channel and >48 hours since sig. rain	0	1	✓ 2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	✓ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	✓ 0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	✓ No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 6)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	✓ 3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	✓ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✓ 0	1	2	3
23. Bivalves/mussels	✓ 0	1	2	3
24. Amphibians	✓ 0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	✓ 0	1	2	3
26. Filamentous algae; periphyton	✓ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✓ 0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	✓ 0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 16

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

**Notes :** Scored out at a 16; however due to location within agricultural field and having recently been excavated, numbers 16, 20, and 21 are not really applicable, but were scored out regardless.

Photo (right) facing downstream. Little to no flow.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 3/2/20
Assessors/Affiliation:		Project ID :
Site Name/Description: S-112		Skyhawk Solar Project
Site Location: Obion County Property west of Everett-Stewart Regional Airport		
HUC (12 digit): 080102020208		Lat/Long: 36°23'10.13"N, 88°59'53.33"W
Previous Rainfall (7-days) : 0.97 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres		County: Obion
Soil Type(s) / Geology : Birds silt loam and Routon-Bonn silt loam complex		Source: NRCS/USDA
Surrounding Land Use : Agriculture to the north, south, and west; regional airport to the east,		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :		
<div style="display: flex; justify-content: space-around;"> <span><u>Severe</u></span> <span>Moderate</span> <span>Slight</span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		✓ WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination =** WWC

**Secondary Indicator Score (if applicable) =** 16

#### Justification / Notes :

A recent drainage alteration (see photo ID C-2) has re-channelized this watercourse into a straight agricultural ditch. Likely part of annual maintenance. Surrounding vegetation is soy beans which is annually planted and farmed.

Manmade agricultural drainage. Was re-excavated shortly before March 2, 2020.

The reach of this conveyance is approximately 2,105 feet from the lat/long.

It flows into an intermittent unnamed tributary to the North Fork Obion River.

Have not reviewed this feature under normal levels of precipitation.



## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 4.5)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	✓ 3
2. Sinuous channel	✓ 0	1	2	3
3. In-channel structure: riffle-pool sequences	✓ 0	1	2	3
4. Sorting of soil textures or other substrate	✓ 0	1	2	3
5. Active/relic floodplain	0	0.5	1	✓ 1.5
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	✓ 0	0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	✓ 0	1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	✓ 0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	✓ No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 5.5)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	✓ 2	3
15. Water in channel and >48 hours since sig. rain	0	1	✓ 2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	✓ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	✓ 0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	✓ No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 6)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	✓ 3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	✓ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✓ 0	1	2	3
23. Bivalves/mussels	✓ 0	1	2	3
24. Amphibians	✓ 0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	✓ 0	1	2	3
26. Filamentous algae; periphyton	✓ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✓ 0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	✓ 0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 16

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

**Notes :** Scored out at a 16; however due to location within agricultural field and having recently been excavated, secondary indicators 16, 20, and 21 are not completely applicable, but were scored out as "absent" due to recent deep excavation.

Photo (right) taken facing downstream.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 3/2/20
Assessors/Affiliation:		Project ID : Skyhawk Solar Project
Site Name/Description: S-113		
Site Location: Obion County Property west of Everett-Stewart Regional Airport		
HUC (12 digit): 080102020208		Lat/Long: 36°23'3.15"N. 88°59'53.74"W
Previous Rainfall (7-days) : 0.97 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Birds silt loam and Routon-Bonn silt loam complex		Source:NRCS/USDA
Surrounding Land Use : Agriculture to the north, south, and west; regional airport to the east,		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <u>Slight</u> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		✓ WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		✓ WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 6**

#### Justification / Notes :

Surrounding vegetation is soy beans which is annually planted and farmed.

This manmade channel is dominated by upland vegetation and grass. Channel lacks bed definition.

The reach of this conveyance is approximately 2,025 feet from the lat/long.

It flows into an intermittent unnamed tributary to the North Fork Obion River.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 2.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	✓ 1	2	3
2. Sinuous channel	✓ 0	1	2	3
3. In-channel structure: riffle-pool sequences	✓ 0	1	2	3
4. Sorting of soil textures or other substrate	✓ 0	1	2	3
5. Active/relic floodplain	0	0.5	1	✓ 1.5
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	✓ 0	0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	✓ 0	1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	✓ 0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	✓ No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 3.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	✓ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	✓ 2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	✓ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	✓ 0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	✓ No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	✓ 0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	✓ 0
22. Crayfish in stream (exclude in floodplain)	✓ 0	1	2	3
23. Bivalves/mussels	✓ 0	1	2	3
24. Amphibians	✓ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✓ 0	1	2	3
26. Filamentous algae; periphyton	✓ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✓ 0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	✓ 0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 6

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

**Notes :** Manmade channel within agricultural field. Hardly any leaf litter because there are no trees nearby.

Photo to right taken facing upstream.





# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 3/16/20 14:30
Assessors/Affiliation:		Project ID : Skyhawk Solar Project
Site Name/Description: S-216		
Site Location: Obion County Property between State Hwy 22 and State Hwy 431 (Martin Hwy)		
HUC (12 digit): 080102020208		Lat/Long: 36°23'50.60"N. 88°58'15.05"W
Previous Rainfall (7-days) : 1.39 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres		County: Obion
Soil Type(s) / Geology : Roton-Bonn silt loam complex		Source: NRCS/USDA
Surrounding Land Use : State Hwy 22 and State Hwy 431 make up north and south (respectively boundry). Agriculture to the east and west.		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 10

#### Justification / Notes :

Surrounding vegetation is soy beans which is annually planted and farmed. Stabilized with grasses during early spring.
The reach of this conveyance is approximately 862 feet from the lat/long.
It flows into an unnamed tributary (roadside ditch of State Hwy 22) to the North Fork Obion River.
Channel flows into roadside ditch, which flows into a manmade pond, which then flows into the North Fork Obion River.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 3 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	<u>2</u>	3
2. Sinuous channel	<u>0</u>	1	2	3
3. In-channel structure: riffle-pool sequences	<u>0</u>	1	2	3
4. Sorting of soil textures or other substrate	<u>0</u>	1	2	3
5. Active/relic floodplain	0	0.5	<u>1</u>	1.5
6. Depositional bars or benches	<u>0</u>	1	2	3
7. Braided channel	<u>0</u>	1	2	3
8. Recent alluvial deposits	<u>0</u>	0.5	1	1.5
9. Natural levees	<u>0</u>	1	2	3
10. Headcuts	<u>0</u>	1	2	3
11. Grade controls	<u>0</u>	0.5	1	1.5
12. Natural valley or drainageway	<u>0</u>	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	<u>No = 0</u>		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	<u>1</u>	2	3
15. Water in channel and >48 hours since sig. rain	0	1	<u>2</u>	3
16. Leaf litter in channel (January – September)	<u>1.5</u>	1	0.5	0
17. Sediment on plants or on debris	0	<u>0.5</u>	1	1.5
18. Organic debris lines or piles (wrack lines)	<u>0</u>	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	<u>No = 0</u>		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	<u>1</u>	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	<u>1</u>	0
22. Crayfish in stream (exclude in floodplain)	<u>0</u>	1	<u>2</u>	3
23. Bivalves/mussels	<u>0</u>	1	2	3
24. Amphibians	<u>0</u>	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	<u>0</u>	1	2	3
26. Filamentous algae; periphyton	<u>0</u>	1	2	3
27. Iron oxidizing bacteria/fungus	<u>0</u>	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	<u>0</u>	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 10

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Man made drainage. Roots within channel. Recently rained.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 4/20/20
Assessors/Affiliation:		Project ID : Skyhawk Solar Project
Site Name/Description: S-241		
Site Location: Obion County Property west of Everett-Stewart Regional Airport		
HUC (12 digit): 080102020208		Lat/Long: 36°22'59.31"N, 88°59'57.18"W
Previous Rainfall (7-days) : 1.44 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Birds silt loam and Routon-Bonn silt loam complex		Source: NRCS/USDA
Surrounding Land Use : Agriculture to the north, south, and west; regional airport to the east,		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 7.5**

#### Justification / Notes :

Surrounding vegetation is soy beans which is annually planted and farmed.

This manmade channel may have historically been associated with a fence row but is now providing agricultural drainage after rain events.

The reach of this conveyance is approximately 2,349 feet from the lat/long.

It flows into an intermittent unnamed tributary to the North Fork Obion River.



## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 1.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 4 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 7.5

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Manmade drainage through actively cultivated

agricultural field. Field was recently disced for planting.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 4/20/20
Assessors/Affiliation:		Project ID : Skyhawk Solar Project
Site Name/Description: S-242		
Site Location: Obion County Property west of Everett-Stewart Regional Airport		
HUC (12 digit): 080102020208		Lat/Long: 36°22'51.71"N, 88°59'58.81"W
Previous Rainfall (7-days) : 1.44 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Birds silt loam and Routon-Bonn silt loam complex		Source: NRCS/USDA
Surrounding Land Use : Agriculture to the north, south, and west; regional airport to the east,		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <u>Slight</u> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		✓ WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 7**

#### Justification / Notes :

Surrounding vegetation is soy beans which is annually planted and farmed.

This manmade channel may have historically been associated with a fence row but is now providing agricultural drainage after rain events.

The reach of this conveyance is approximately 2,110 feet from the lat/long.

It flows into an intermittent unnamed tributary to the North Fork Obion River.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	(1)	2	3
2. Sinuous channel	(0)	1	2	3
3. In-channel structure: riffle-pool sequences	(0)	1	2	3
4. Sorting of soil textures or other substrate	(0)	1	2	3
5. Active/relic floodplain	0	0.5	(1)	1.5
6. Depositional bars or benches	(0)	1	2	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	(0)	0.5	1	1.5
9. Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	(0)	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	(0)	1	2	3
15. Water in channel and >48 hours since sig. rain	0	(1)	2	3
16. Leaf litter in channel (January – September)	1.5	(1)	0.5	0
17. Sediment on plants or on debris	(0)	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	(0)	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 3 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	(1)	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	(2)	1	0
22. Crayfish in stream (exclude in floodplain)	(0)	1	2	3
23. Bivalves/mussels	(0)	1	2	3
24. Amphibians	(0)	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	(0)	1	2	3
26. Filamentous algae; periphyton	(0)	1	2	3
27. Iron oxidizing bacteria/fungus	(0)	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	(0)	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 7

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Field was recently disced by farmers. Rain event prior to survey. Flows into intermittent unnamed tributary of North Fork Obion River.





## **APPENDIX D - 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.

TN Solar 1, LLC  
Skyhawk Solar



Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





Photograph C-3: View of PUB W-121, facing west.



Photograph C-4: View of PUB W-218, facing south.

TN Solar 1, LLC  
Skyhawk Solar



Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





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.

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Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





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.

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Skyhawk Solar



Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





Photograph C-13: View of ephemeral S-106, facing upstream.



Photograph C-14: View of intermittent S-107, facing upstream.

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Photograph C-15: View of ephemeral S-108, facing upstream.



Photograph C-16: View of ephemeral S-109, facing downstream.

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Photograph C-17: View of ephemeral S-110, facing downstream.



Photograph C-18: View of ephemeral S-111, facing downstream.

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Photograph C-19: View of ephemeral S-112, facing downstream.



Photograph C-20: View of ephemeral S-113, facing upstream.

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Photograph C-21: View of ephemeral S-114, facing upstream.



Photograph C-22: View of ephemeral S-115, facing upstream.

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Photograph C-23: View of perennial S-116, facing downstream.



Photograph C-24: View of ephemeral S-117, facing upstream.

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Photographs  
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Photograph C-25: View of ephemeral S-118, facing downstream.



Photograph C-26: View of ephemeral S-119, facing downstream.

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Photographs  
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Photograph C-27: View of ephemeral S-120, facing upstream.



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.

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Photographs  
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Photograph C-31: View of ephemeral S-125, facing upstream.



Photograph C-32: View of ephemeral S-126, facing downstream.

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Photographs  
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Photograph C-33: View of ephemeral S-127, facing downstream.



Photograph C-34: View of ephemeral S-128, facing upstream.

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Photographs  
March 2-4, April 16, and April 20,  
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Photograph C-35: View ephemeral S-129, facing downstream.



Photograph C-36: View of intermittent S-130, facing upstream.

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Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





Photograph C-37: View of ephemeral S-131, facing upstream.



Photograph C-38: View of perennial S-132, facing downstream.

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Photographs  
March 2-4, April 16, and April 20,  
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Photograph C-39: View of ephemeral S-133, facing downstream.



Photograph C-40: View of ephemeral S-134, facing upstream.

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Photographs  
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Photograph C-41: View of ephemeral S-135, facing downstream.



Photograph C-42: View of ephemeral S-216, facing upstream.

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Photographs  
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Photograph C-43: View of intermittent S-240, facing downstream.



Photograph C-44: View of ephemeral S-241, facing upstream.

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March 2-4, April 16, and April 20,  
2020  
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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.

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Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee





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.

TN Solar 1, LLC  
Skyhawk Solar



Photographs  
March 2-4, April 16, and April 20,  
2020  
Obion County, Tennessee

# 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 existing 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 (*Ranunculus 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**

<b>Wetland Number</b>	<b>Wetland Type<sup>a</sup></b>	<b>Area of Wetland (acre)</b>	<b>Area of Wetland (acre) in Survey Area</b>	<b>Figure A-4 Page Number</b>	<b>Jurisdictional<sup>b</sup></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 <sup>a</sup>	Area of Wetland (acre)	Area of Wetland (acre) in Survey Area	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
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
<b>Total:</b>		<b>12.97</b>	<b>8.72</b>		

(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 <sup>a</sup>
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 <sup>a</sup>
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 <sup>a</sup>
	<b>Total:</b>	<b>18,369</b>	<b>8,622</b>		

(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](mailto:jabrown3@burnsmcd.com).

Sincerely,

A handwritten signature in blue ink, appearing to read "Jesse A. Brown". The signature is fluid and cursive, with a long, sweeping underline.

Jesse A. Brown  
Senior Environmental Scientist  
Burns and McDonnell

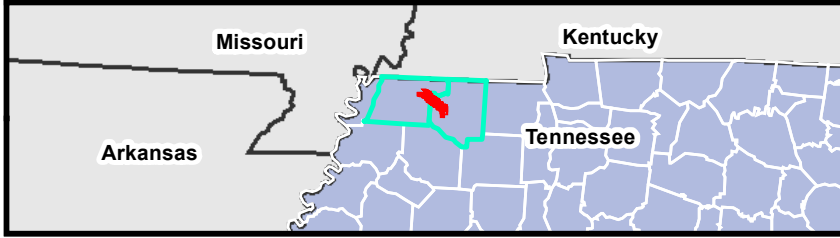
Attachments:

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

## **APPENDIX A - FIGURES**



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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

Access Road Centerline

NORTH

1.50.7501.5

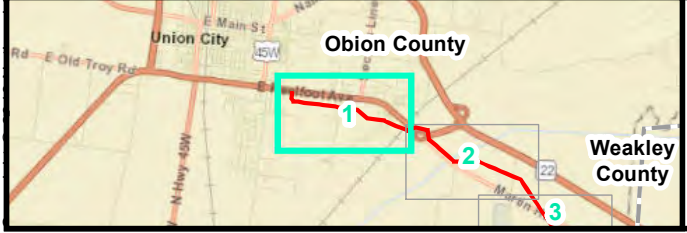
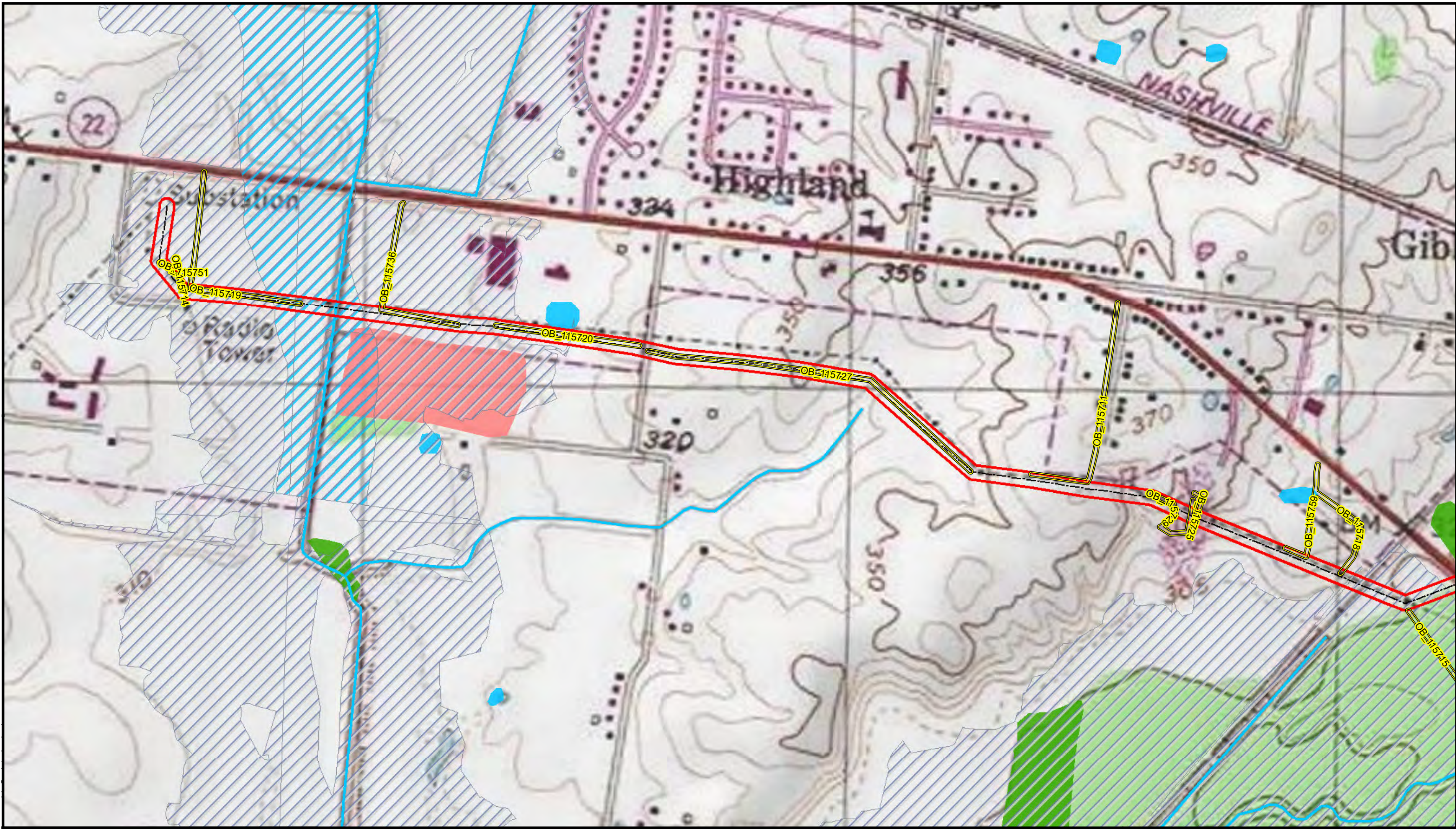
Scale in Miles

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



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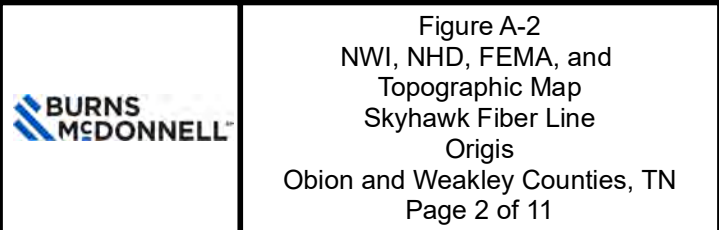
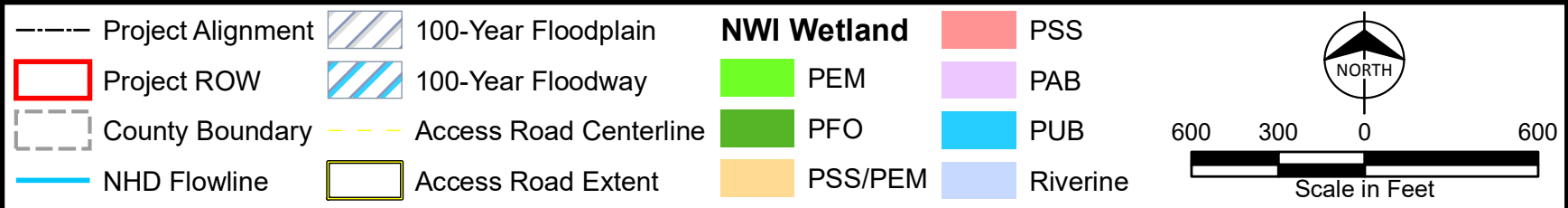
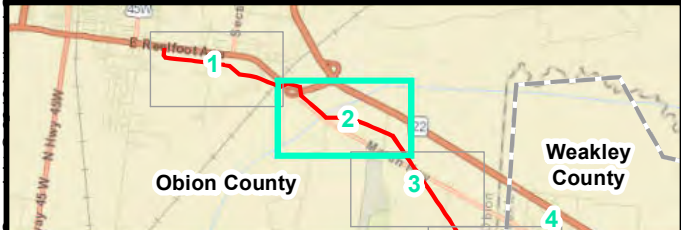
--- Project Alignment	100-Year Floodplain	<b>NWI Wetland</b>	PSS
Project ROW	100-Year Floodway	PEM	PAB
County Boundary	Access Road Centerline	PFO	PUB
NHD Flowline	Access Road Extent	PSS/PEM	Riverine

Scale in Feet  
600 300 0 600

Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 1 of 11

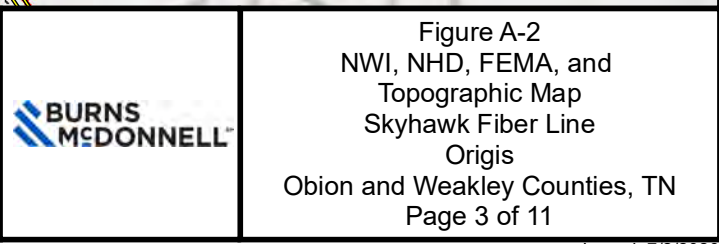
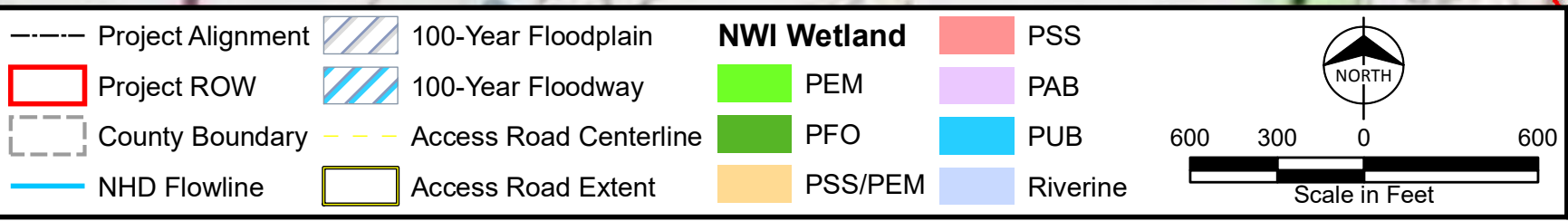
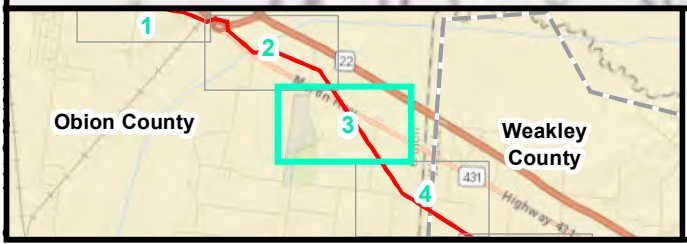


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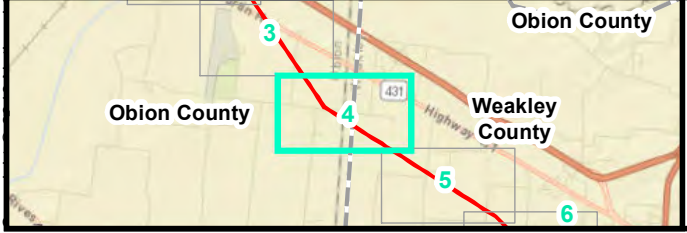
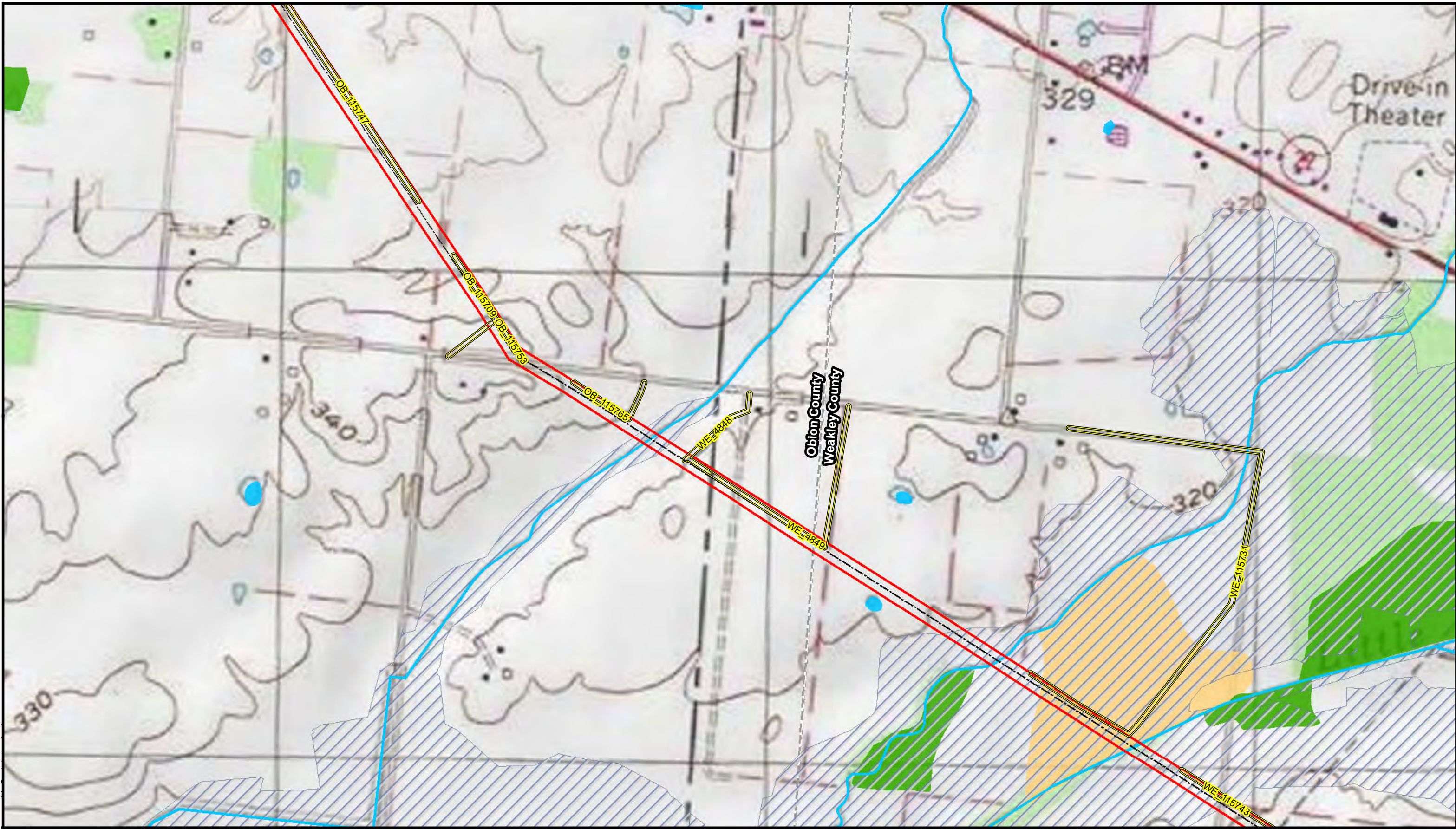


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--- Project Alignment	100-Year Floodplain	<b>NWI Wetland</b>	PSS
Project ROW	100-Year Floodway	PEM	PAB
County Boundary	Access Road Centerline	PFO	PUB
NHD Flowline	Access Road Extent	PSS/PEM	Riverine

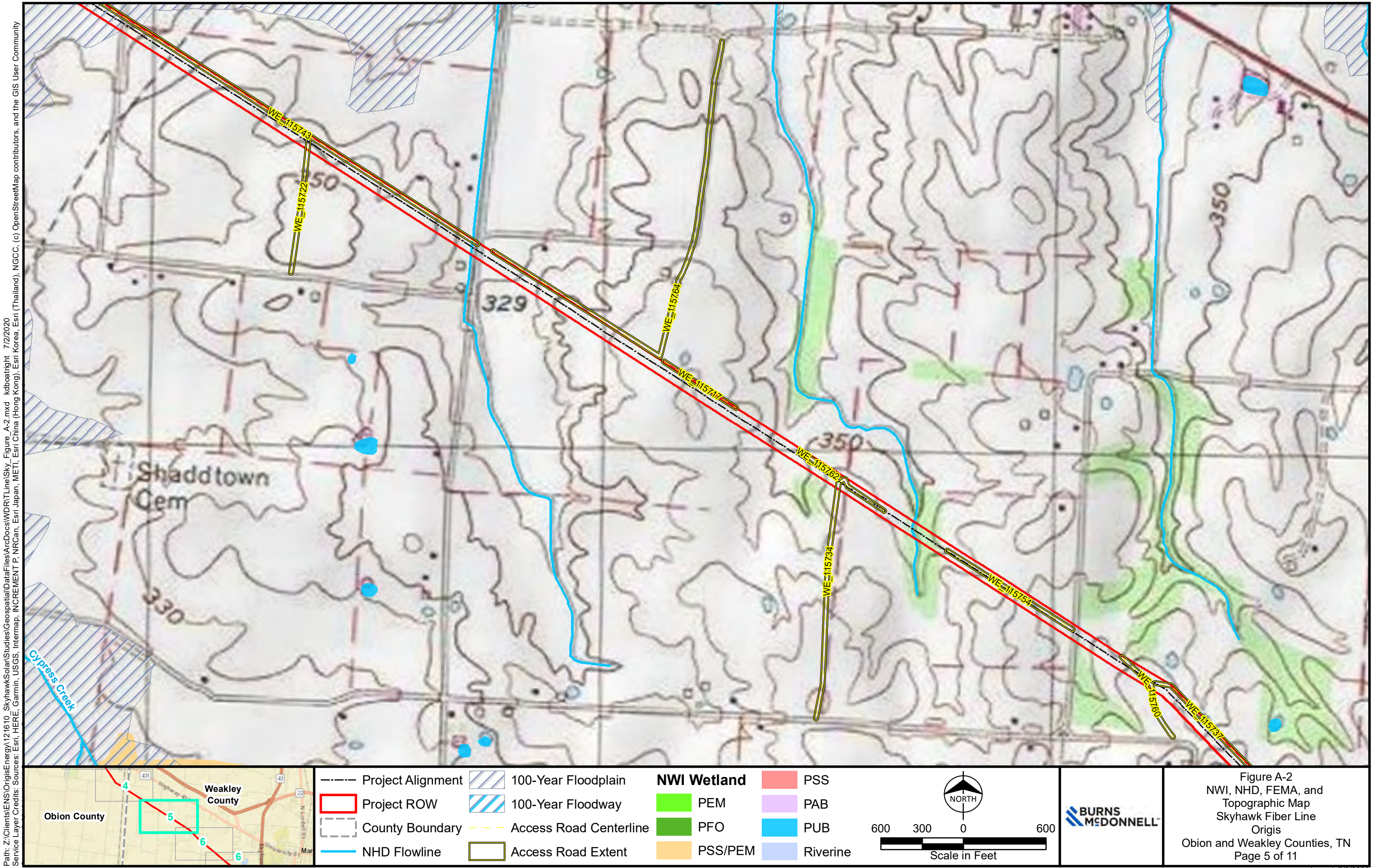
NORTH

600 300 0 600  
Scale in Feet



Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origis  
Obion and Weakley Counties, TN  
Page 4 of 11

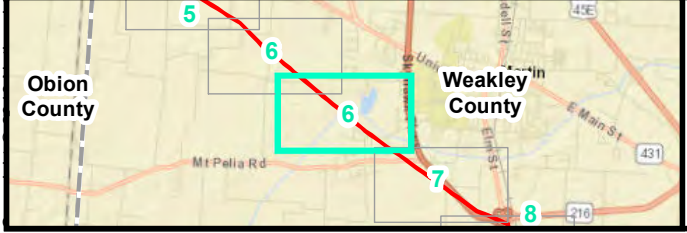
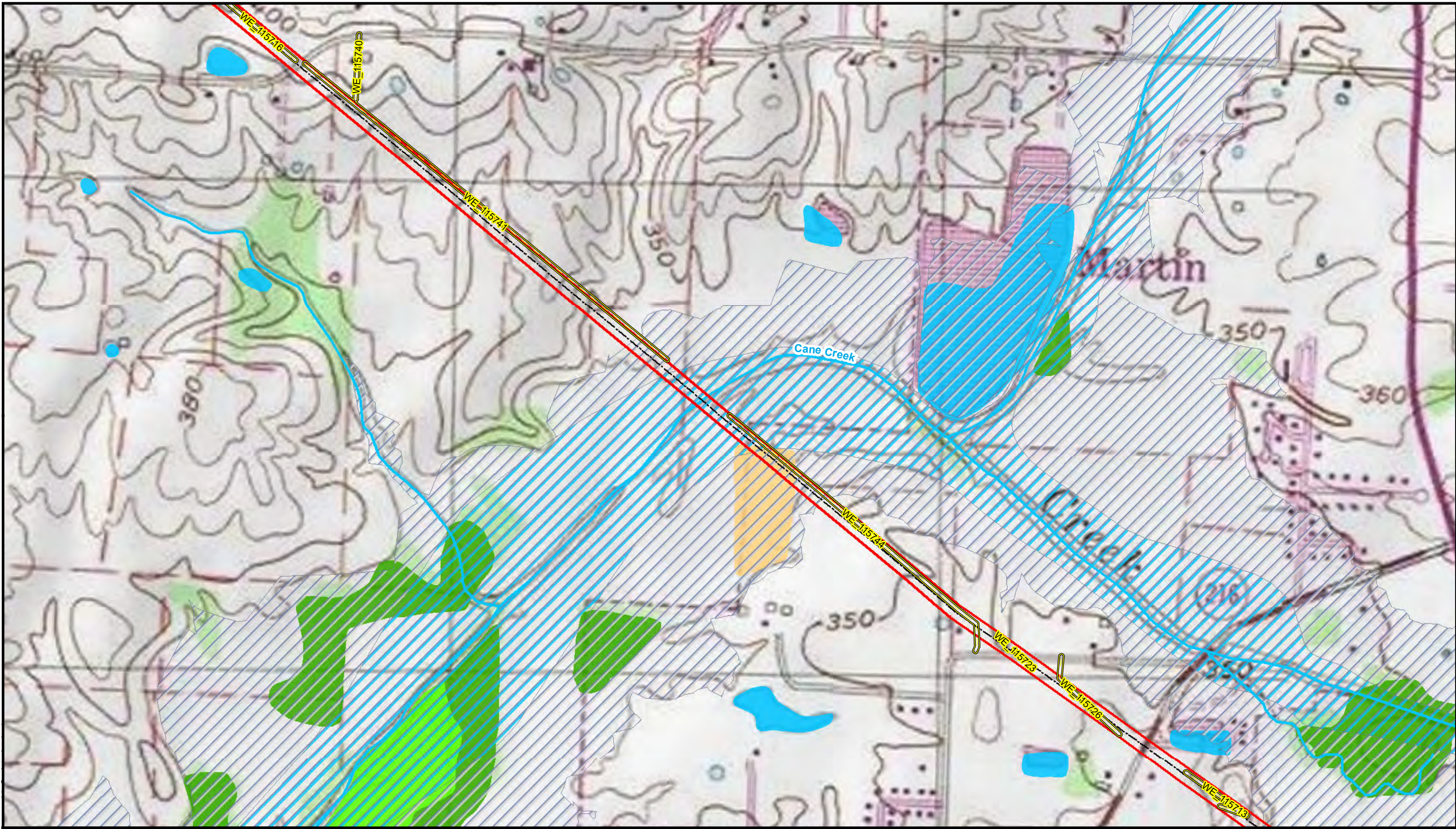




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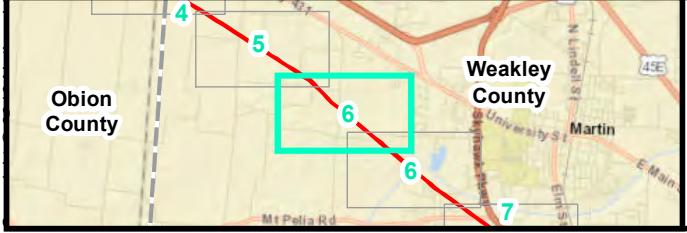
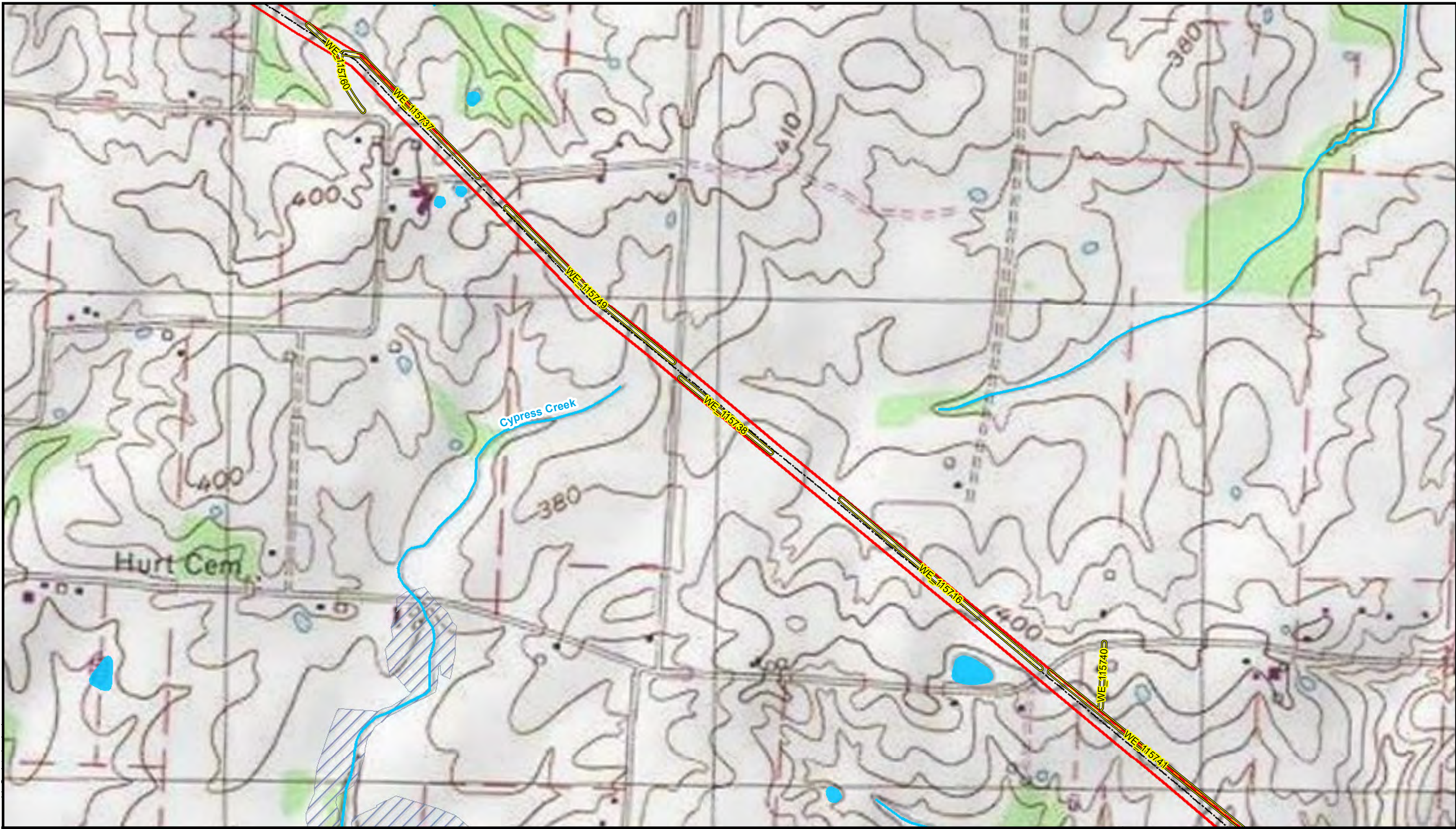
--- Project Alignment	100-Year Floodplain	<b>NWI Wetland</b>	PSS
Project ROW	100-Year Floodway	PEM	PAB
County Boundary	Access Road Centerline	PFO	PUB
NHD Flowline	Access Road Extent	PSS/PEM	Riverine

600 300 0 600  
Scale in Feet

Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origis  
Obion and Weakley Counties, TN  
Page 6 of 11



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Scale in Feet  
600 300 0 600



Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 7 of 11



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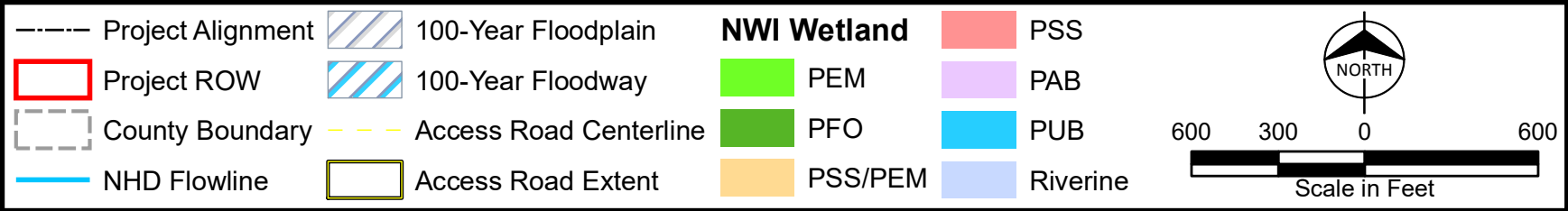
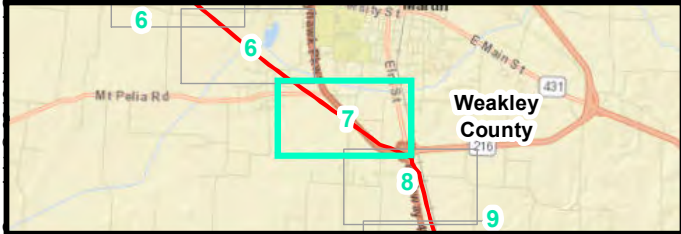
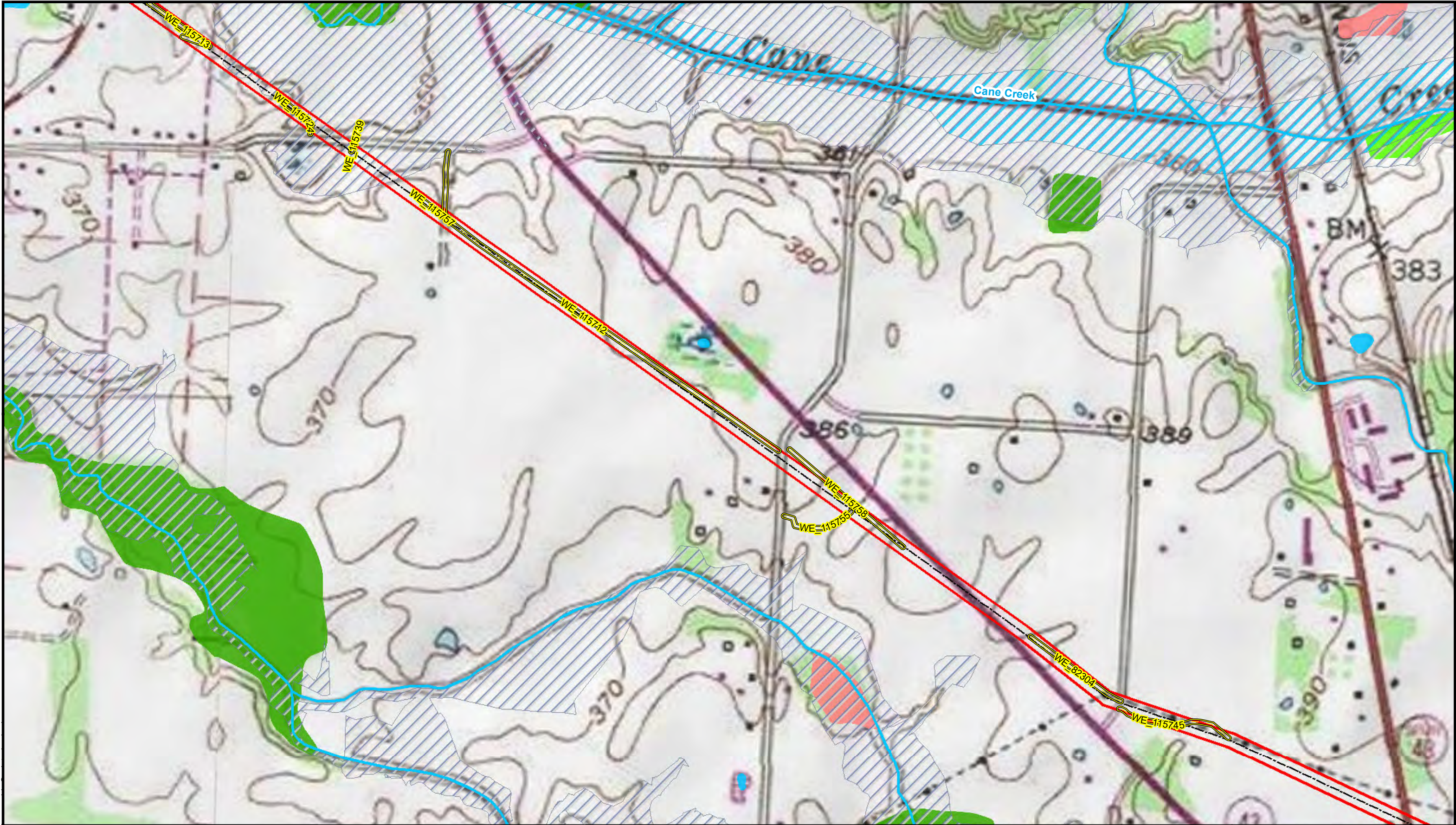


Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origis  
Obion and Weakley Counties, TN  
Page 8 of 11



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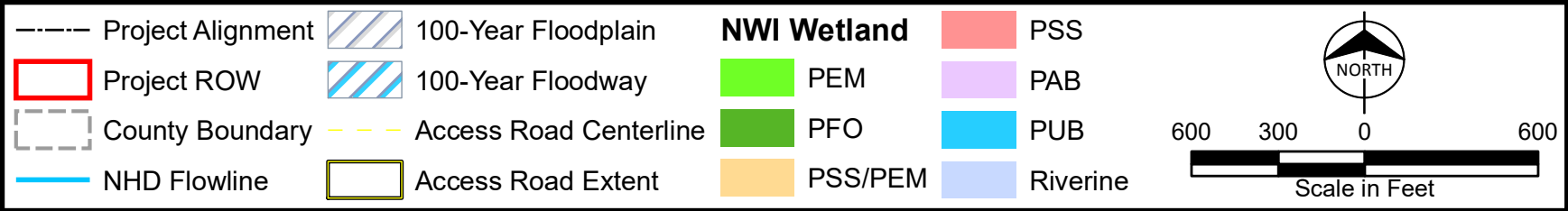
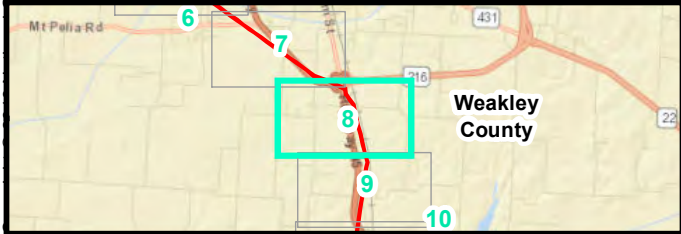
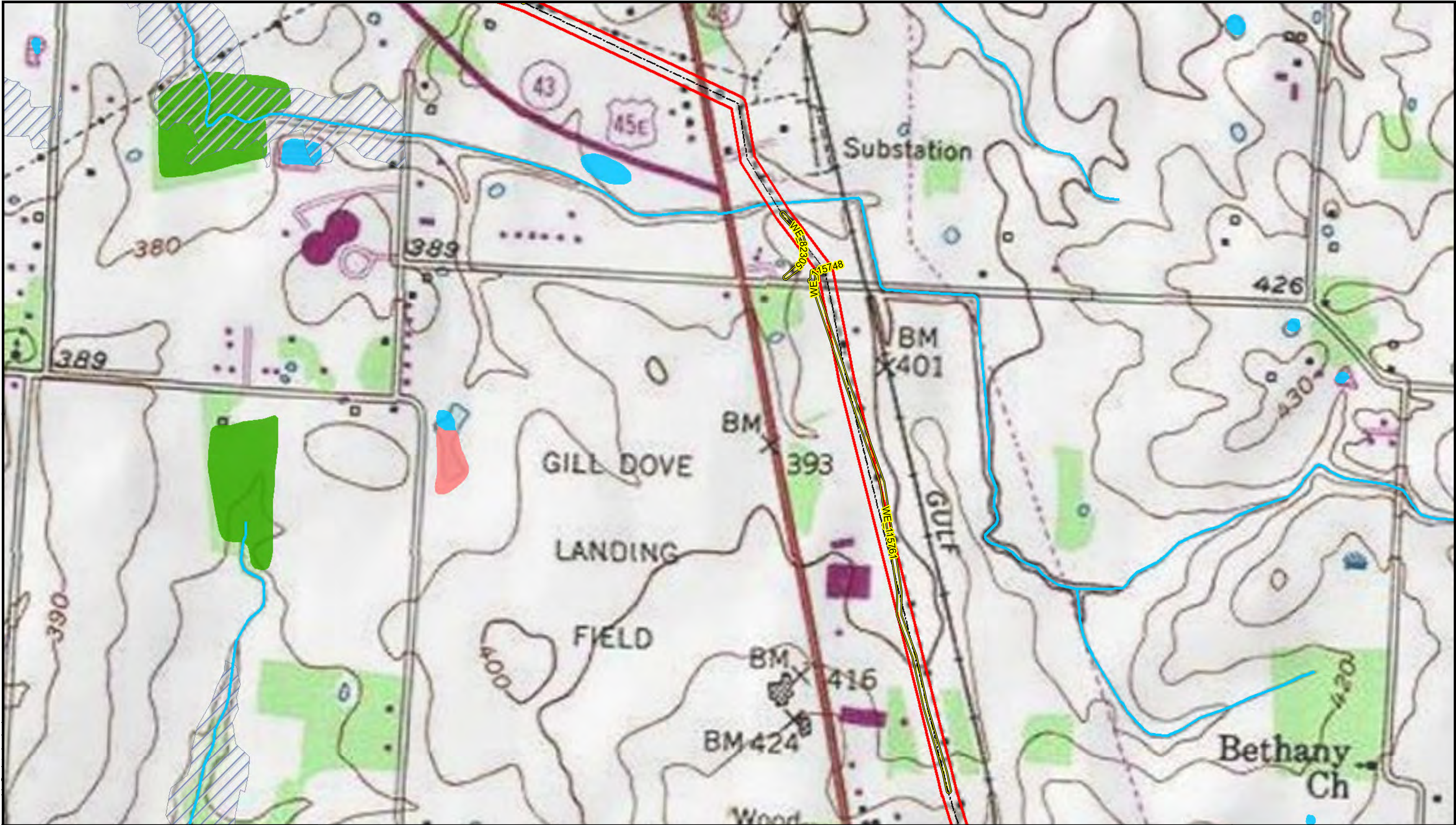
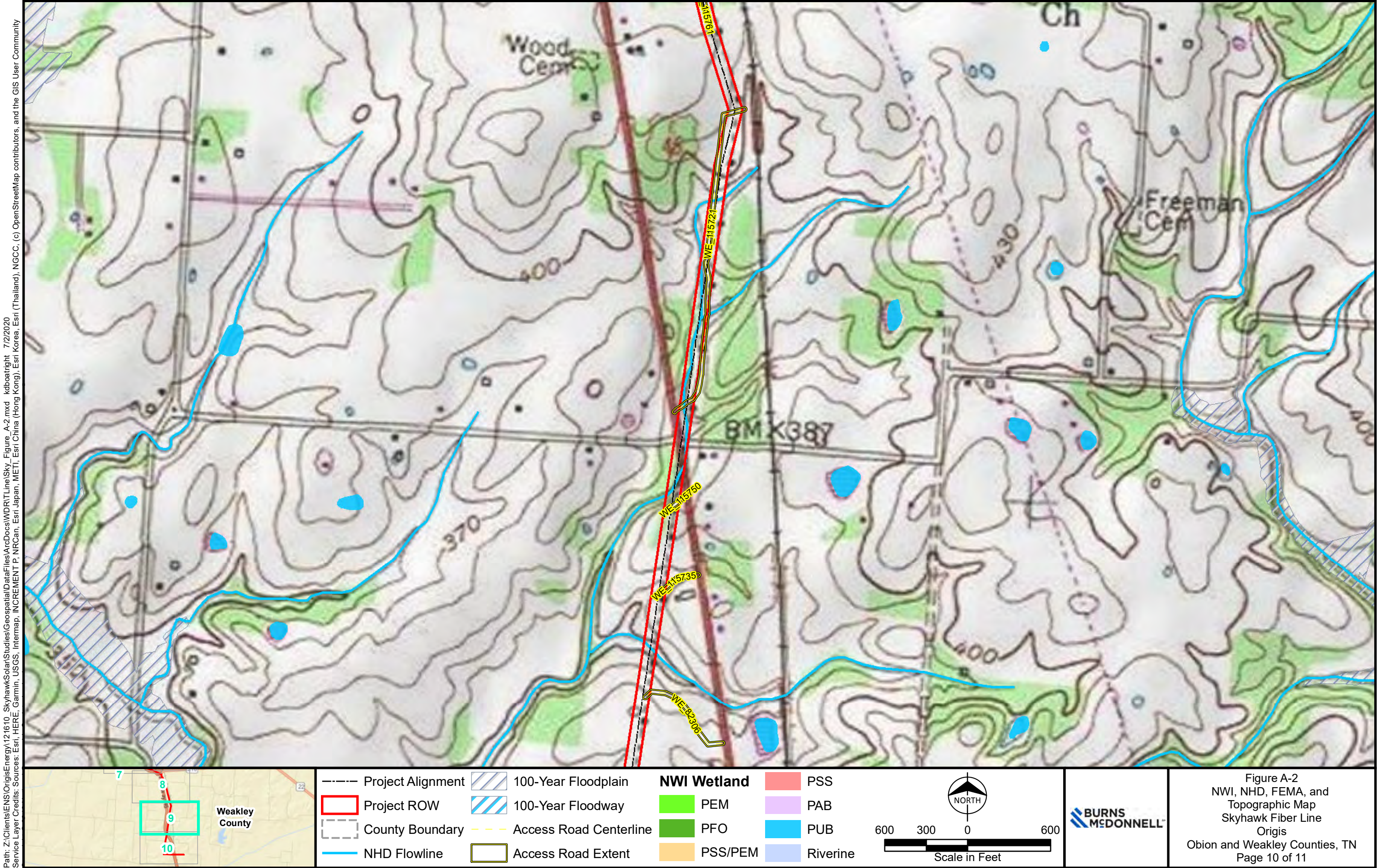


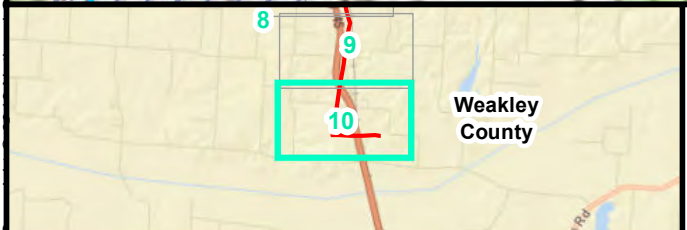
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NWI, NHD, FEMA, and  
Topographic Map  
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Origis  
Obion and Weakley Counties, TN  
Page 9 of 11







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----- Project Alignment	100-Year Floodplain	<b>NWI Wetland</b>	PSS
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County Boundary	Access Road Centerline	PFO	PUB
NHD Flowline	Access Road Extent	PSS/PEM	Riverine

Scale in Feet  
600 300 0 600



Figure A-2  
NWI, NHD, FEMA, and  
Topographic Map  
Skyhawk Fiber Line  
Origis  
Obion and Weakley Counties, TN  
Page 11 of 11



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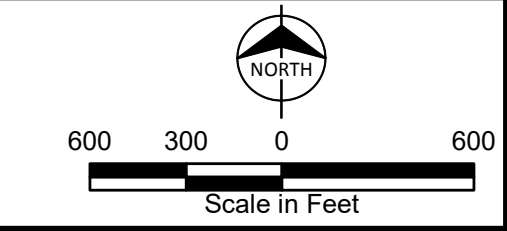
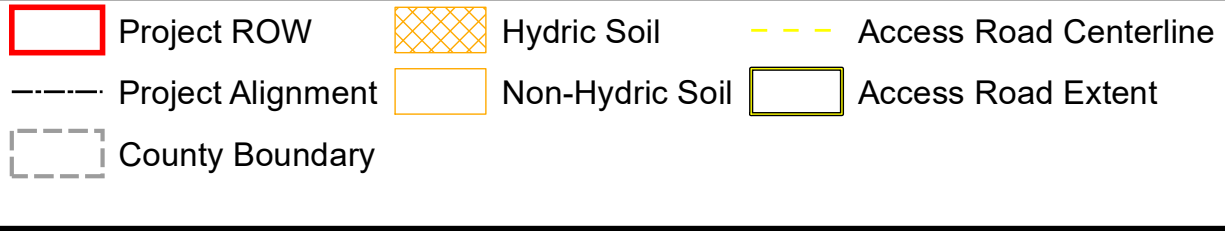
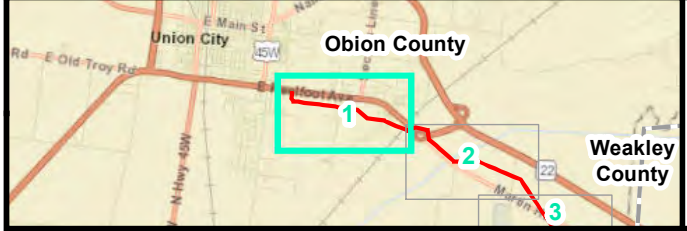


Figure A-3  
NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 1 of 11



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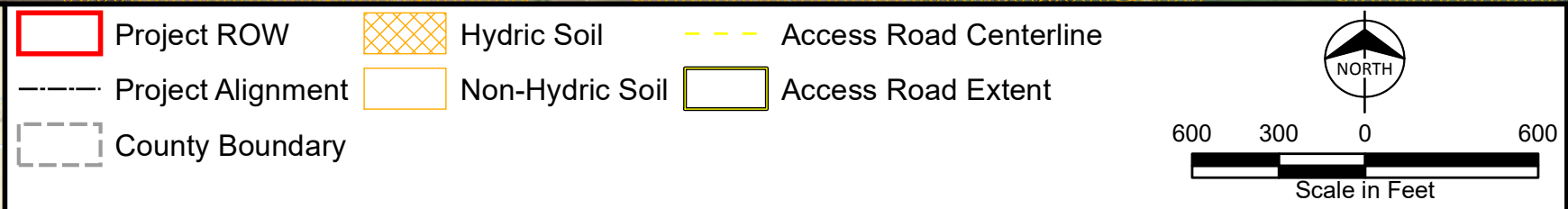
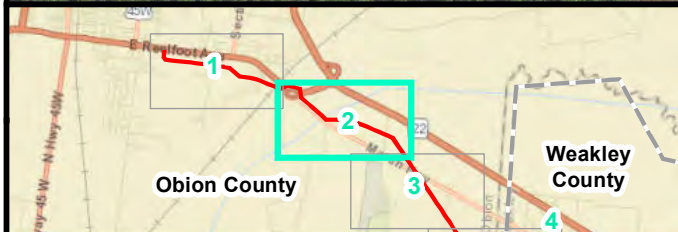
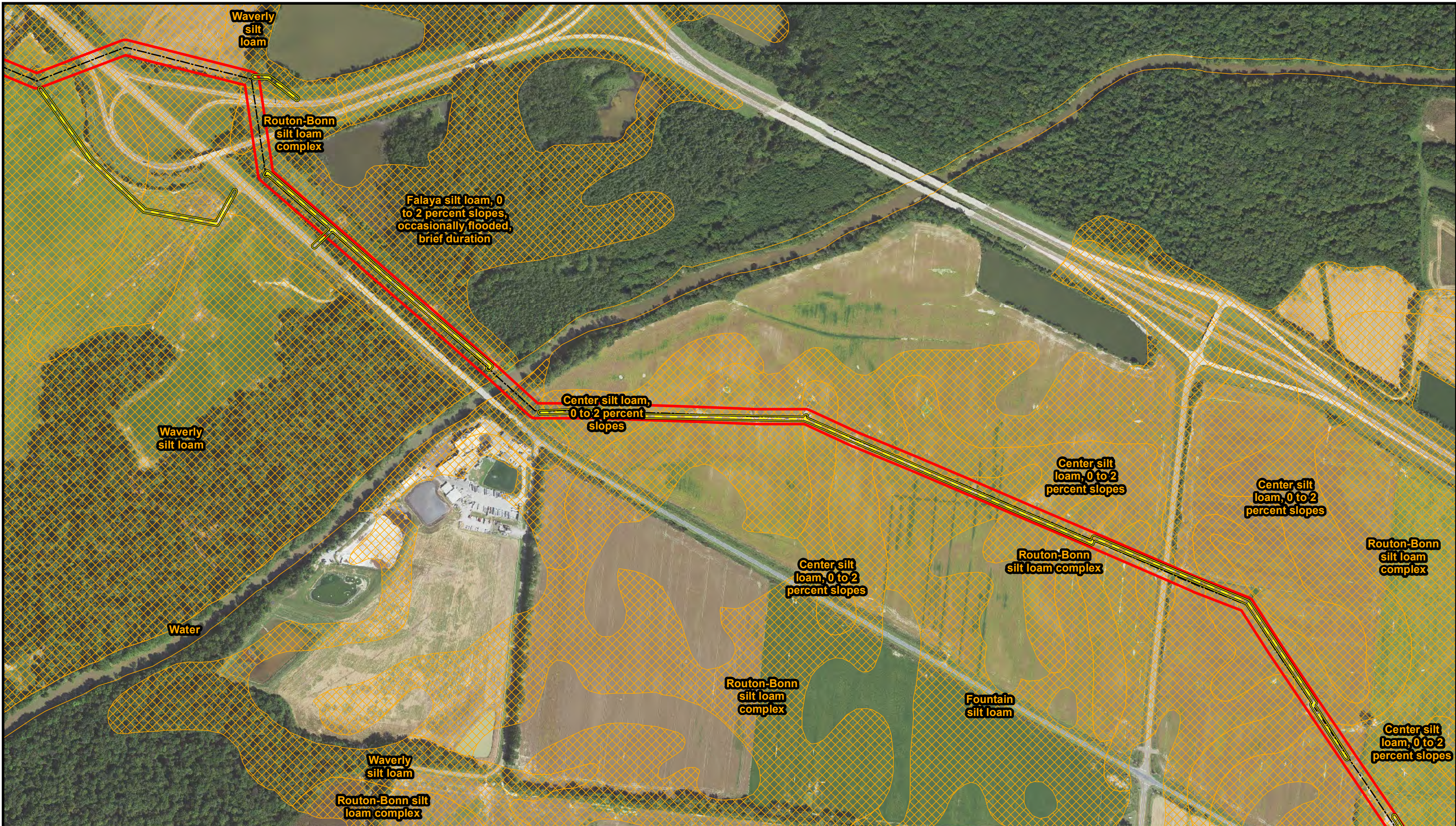
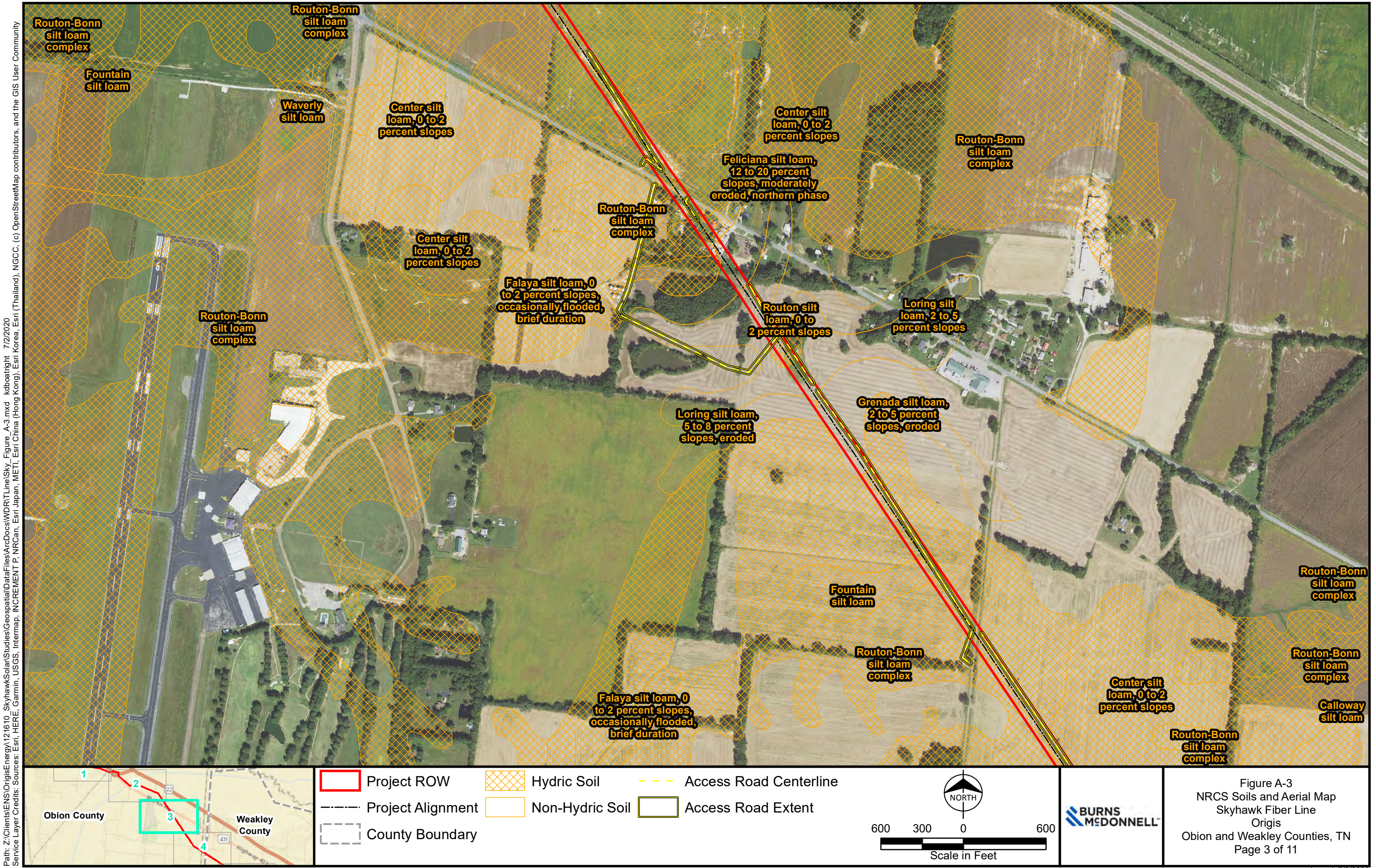


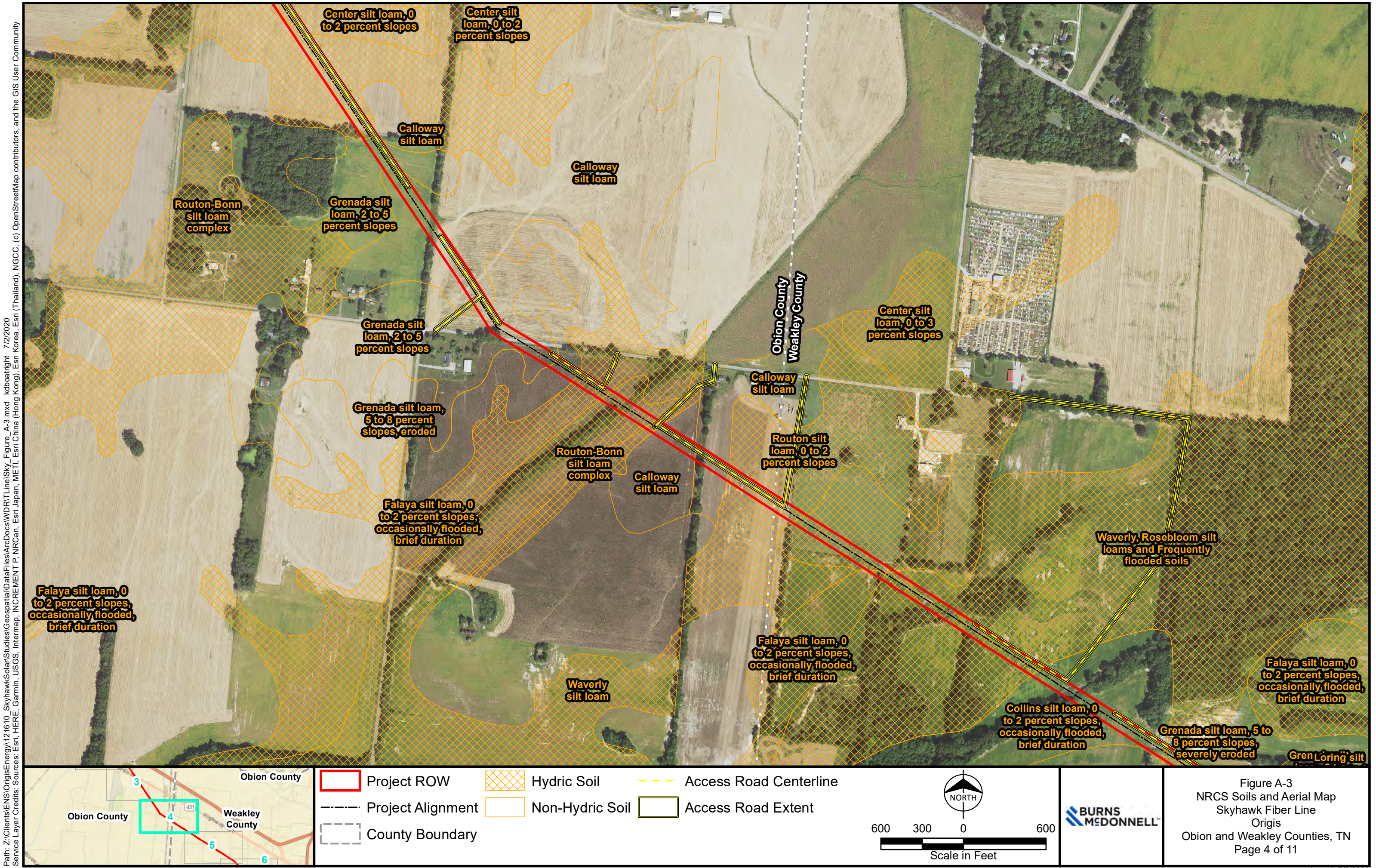
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NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origis  
Obion and Weakley Counties, TN  
Page 2 of 11





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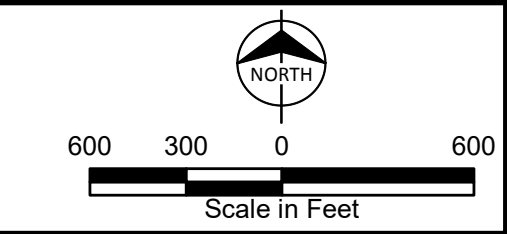
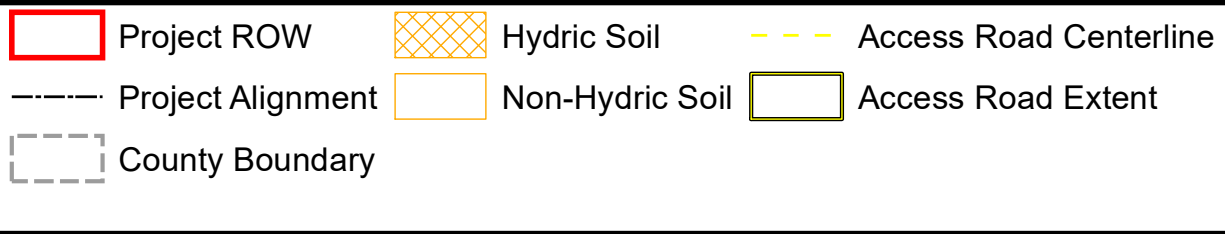
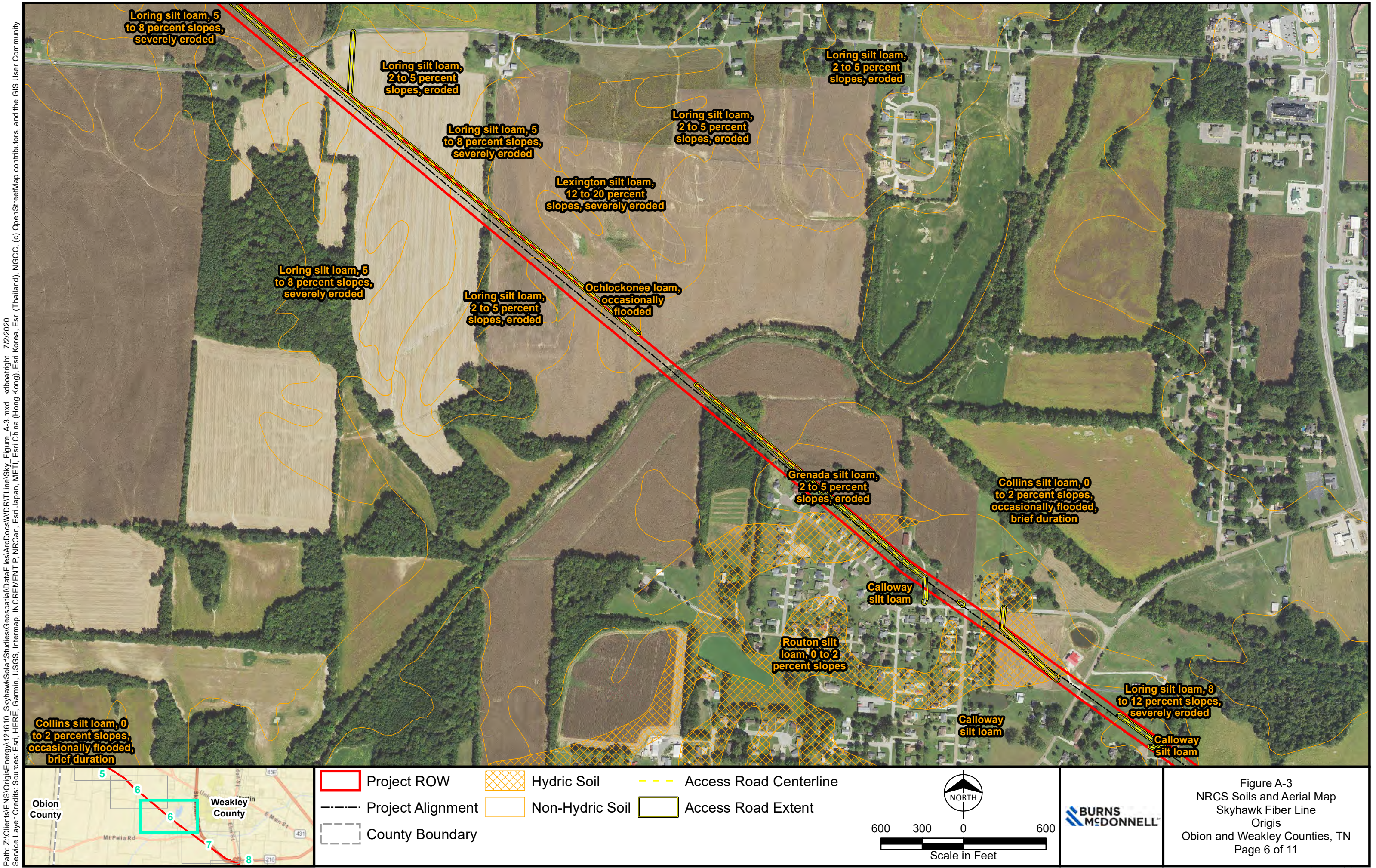


Figure A-3  
NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 5 of 11



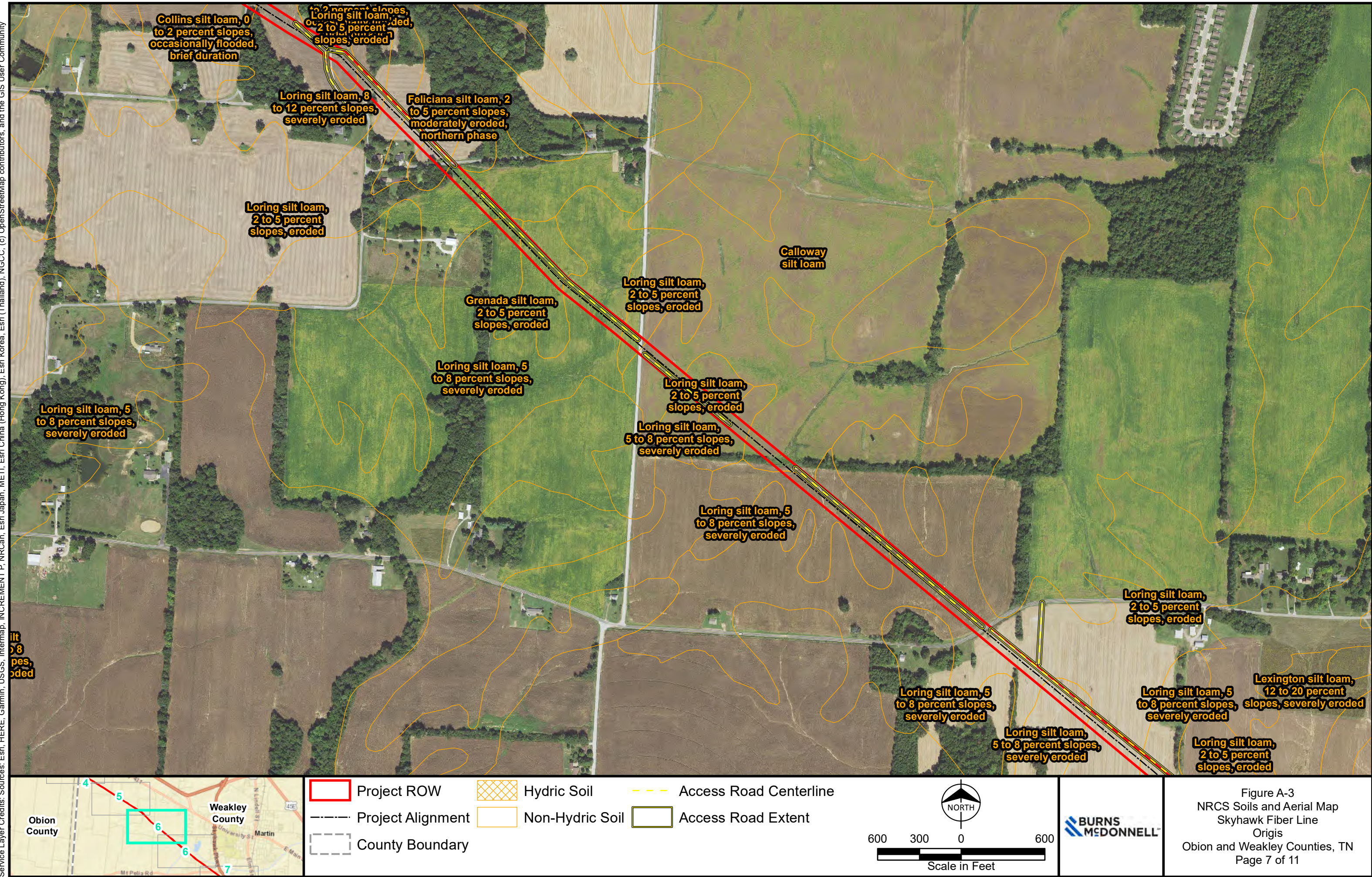


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Figure A-3  
NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 6 of 11

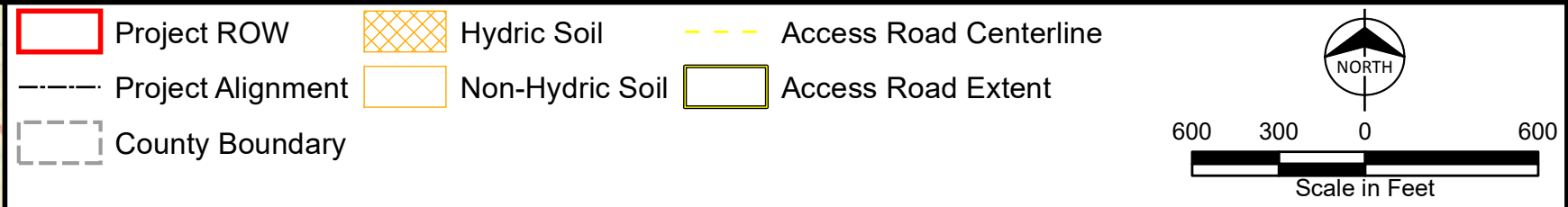
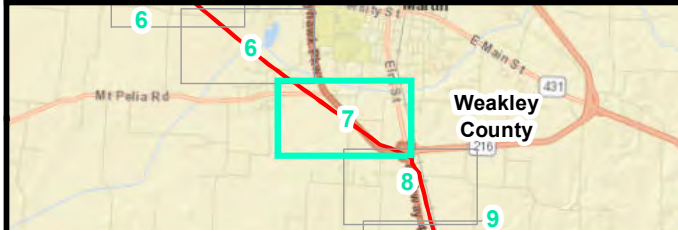
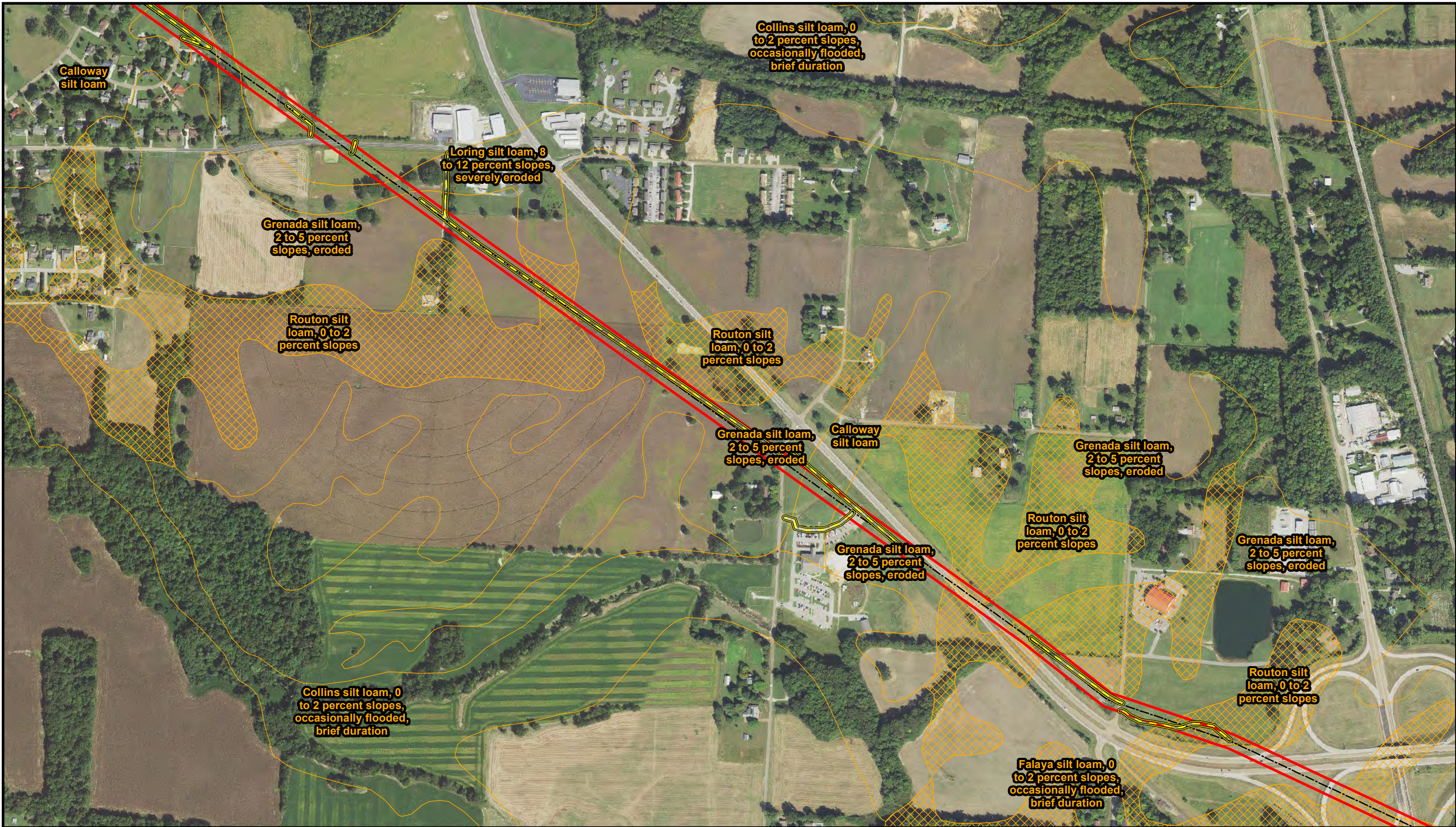


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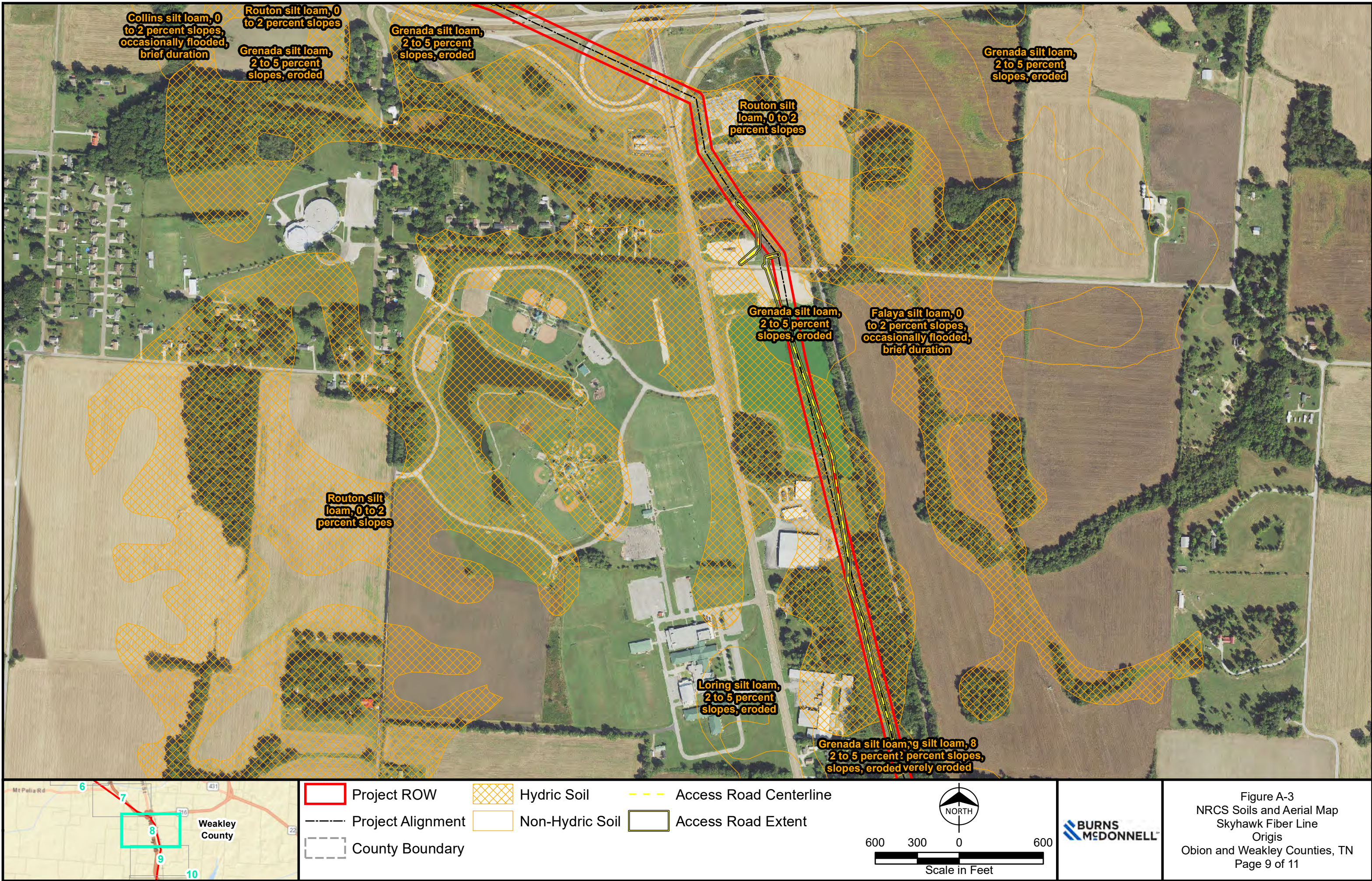


**BURNS  
MCDONNELL**

Figure A-3  
NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 8 of 11



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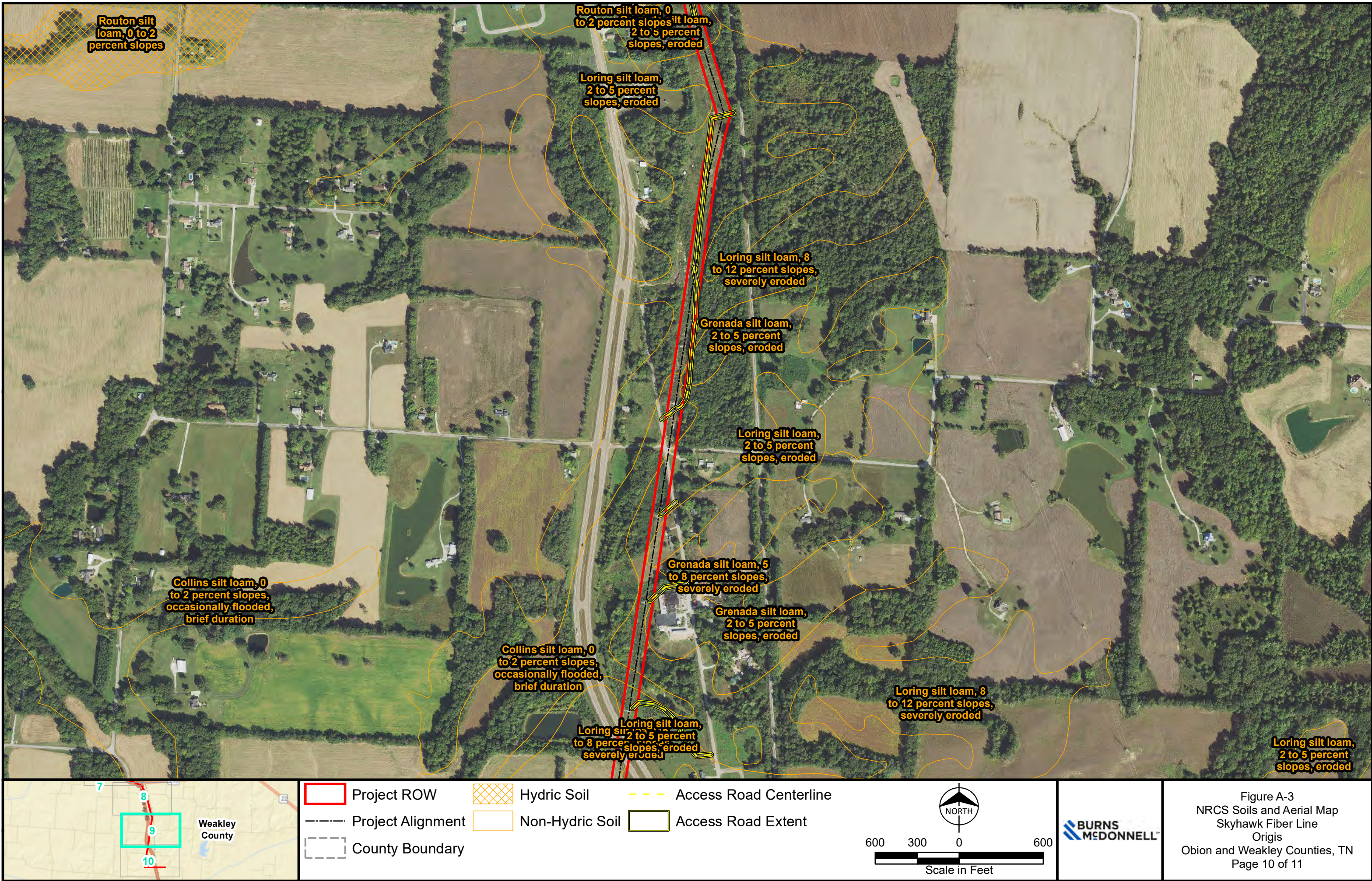
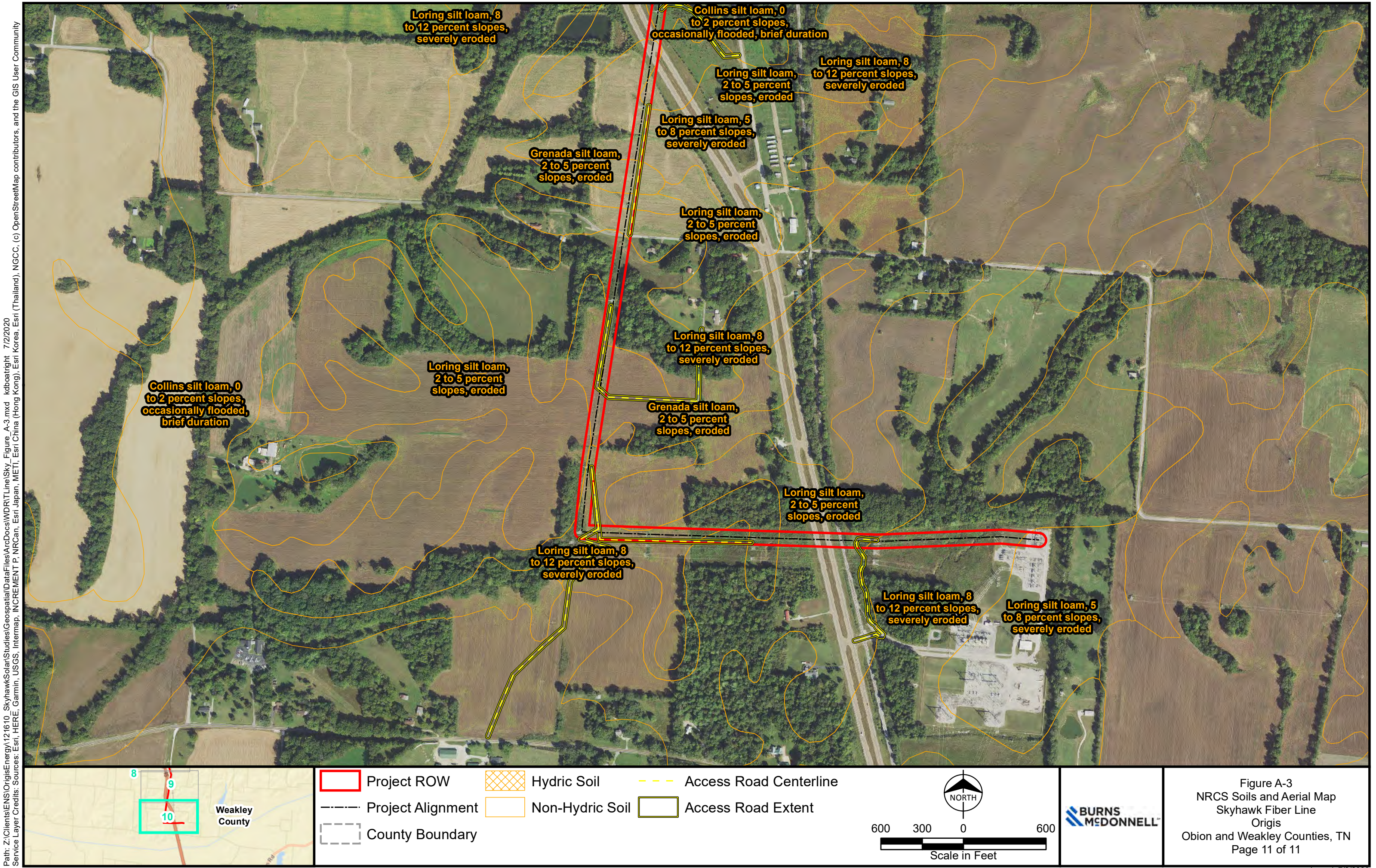


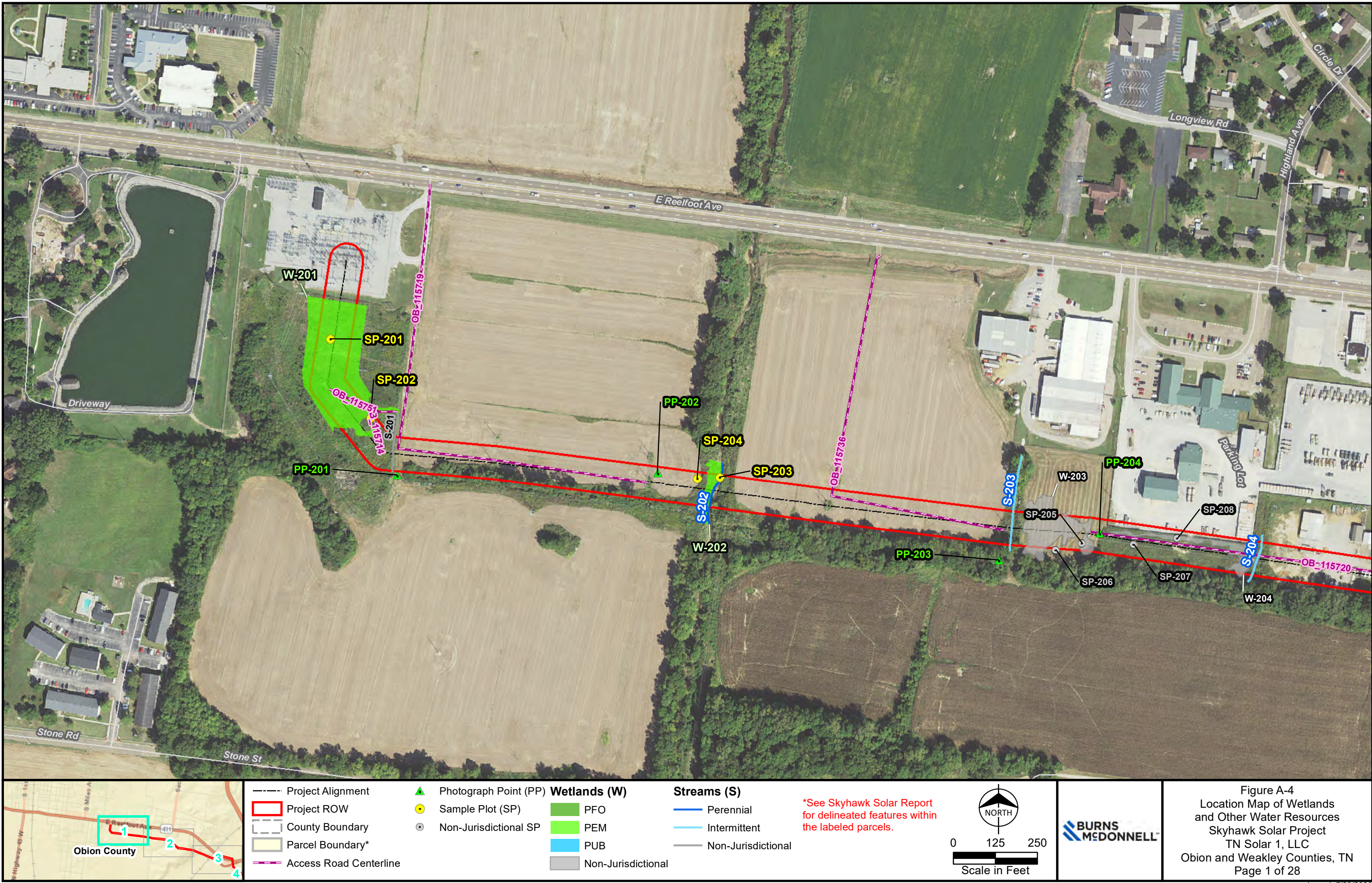
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NRCS Soils and Aerial Map  
Skyhawk Fiber Line  
Origins  
Obion and Weakley Counties, TN  
Page 10 of 11





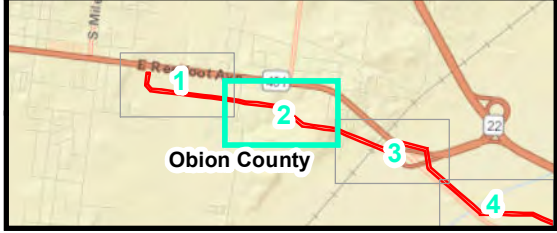


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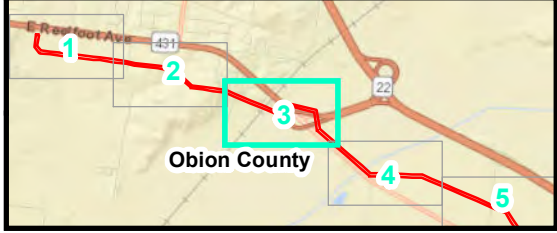
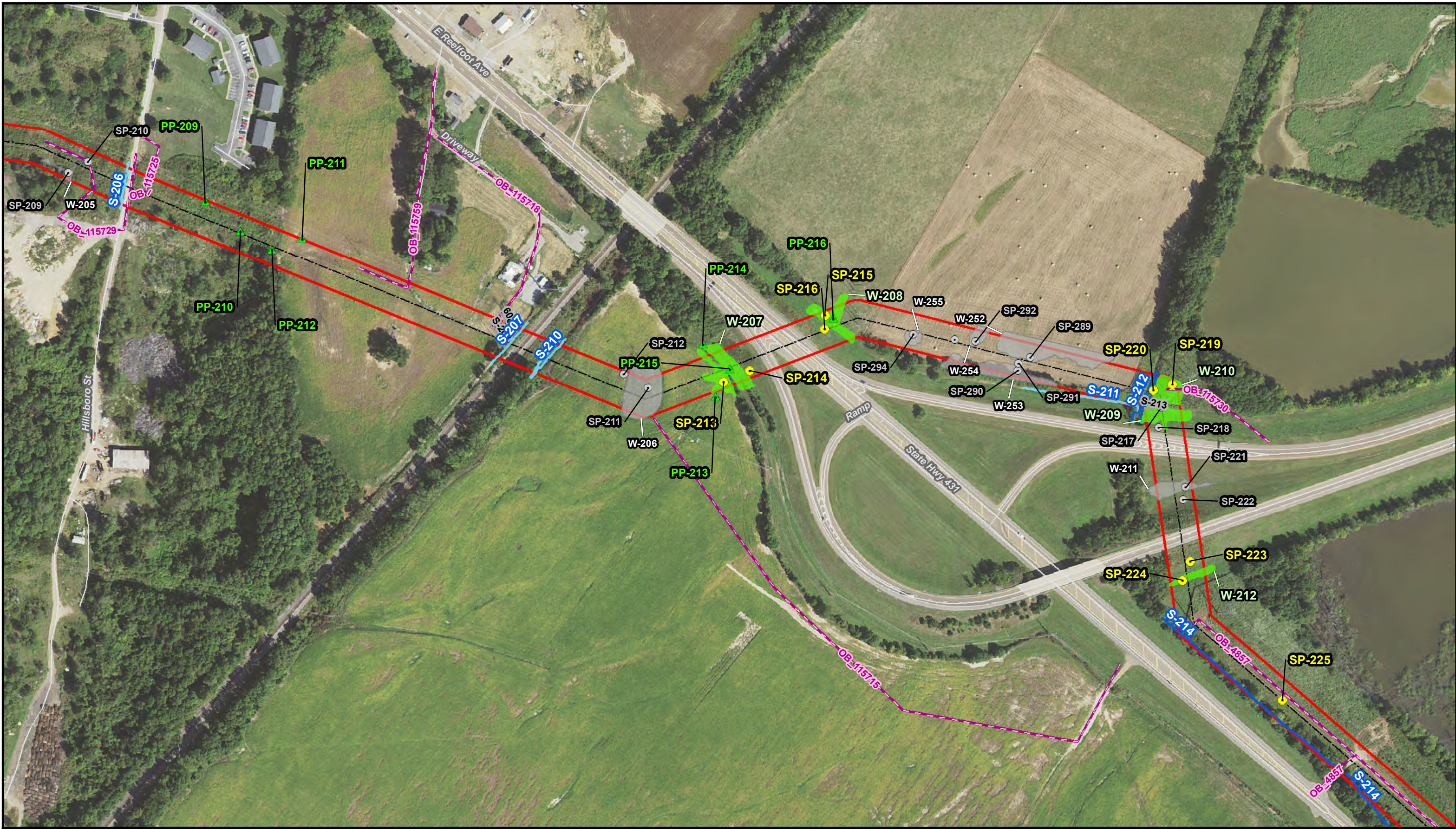


<ul style="list-style-type: none"><li>Project Alignment</li><li>Project ROW</li><li>County Boundary</li><li>Parcel Boundary*</li><li>Access Road Centerline</li></ul>	<ul style="list-style-type: none"><li>Photograph Point (PP)</li><li>Sample Plot (SP)</li><li>Non-Jurisdictional SP</li></ul>	<b>Wetlands (W)</b> <ul style="list-style-type: none"><li>PFO</li><li>PEM</li><li>PUB</li><li>Non-Jurisdictional</li></ul>	<b>Streams (S)</b> <ul style="list-style-type: none"><li>Perennial</li><li>Intermittent</li><li>Non-Jurisdictional</li></ul>	<p>*See Skyhawk Solar Report for delineated features within the labeled parcels.</p>	<div> 0 125 250 Scale in Feet</div>
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Figure A-4  
Location Map of Wetlands and Other Water Resources  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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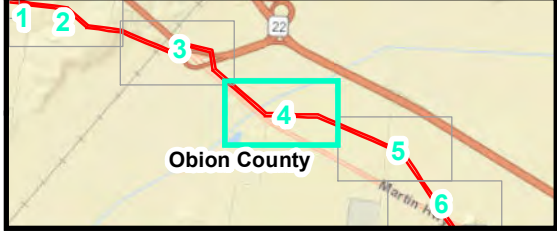
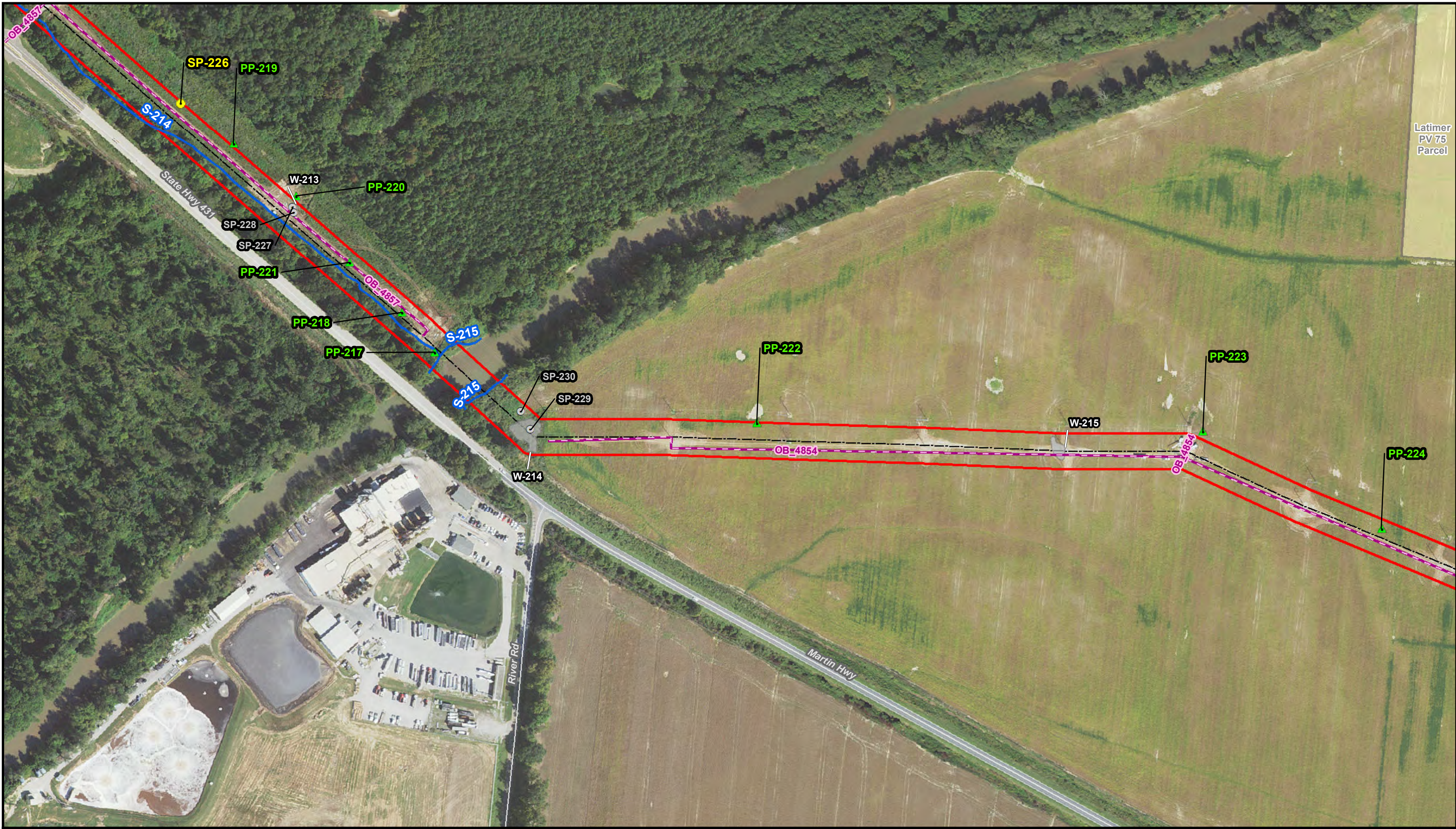
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Figure A-4  
Location Map of Wetlands  
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Skyhawk Solar Project  
TN Solar 1, LLC  
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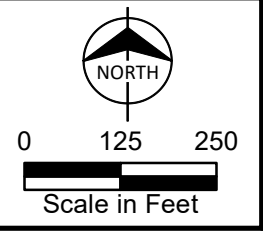
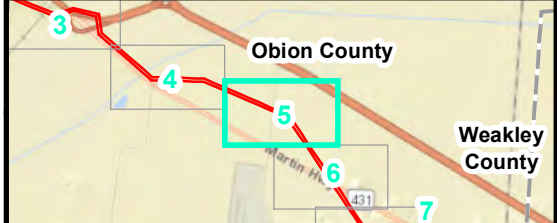


Figure A-4  
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TN Solar 1, LLC  
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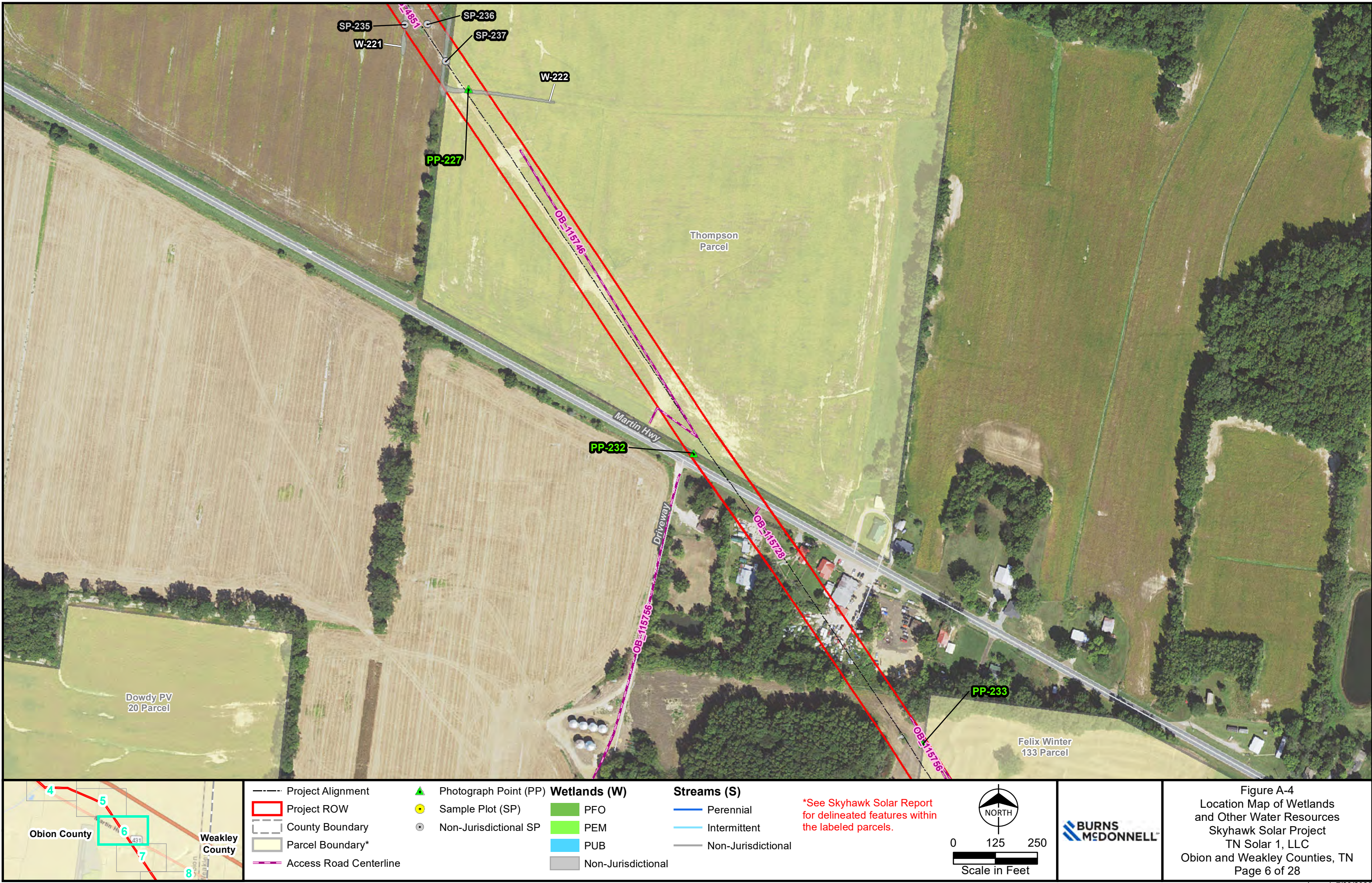


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Figure A-4  
Location Map of Wetlands  
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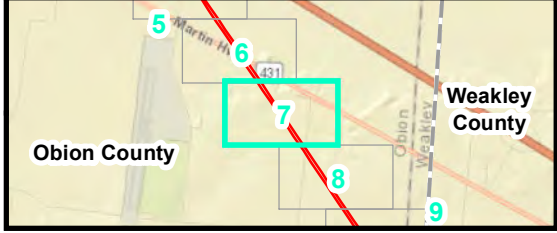


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TN Solar 1, LLC  
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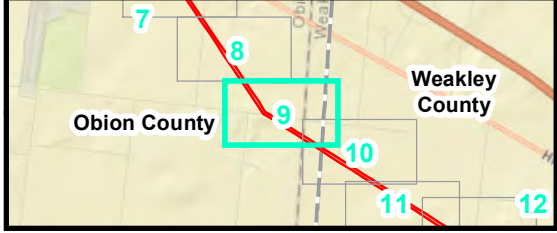
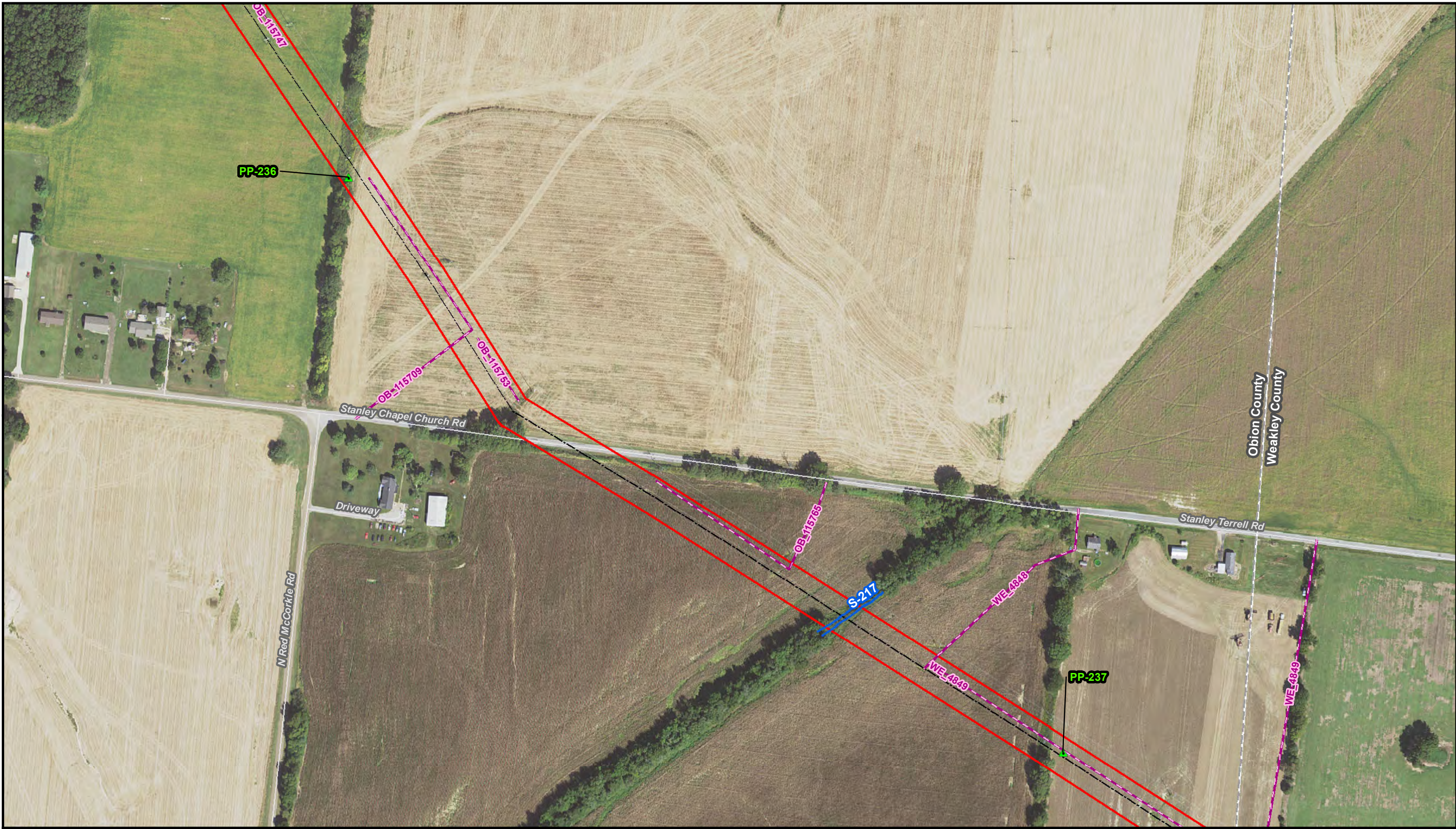
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Figure A-4  
Location Map of Wetlands  
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TN Solar 1, LLC  
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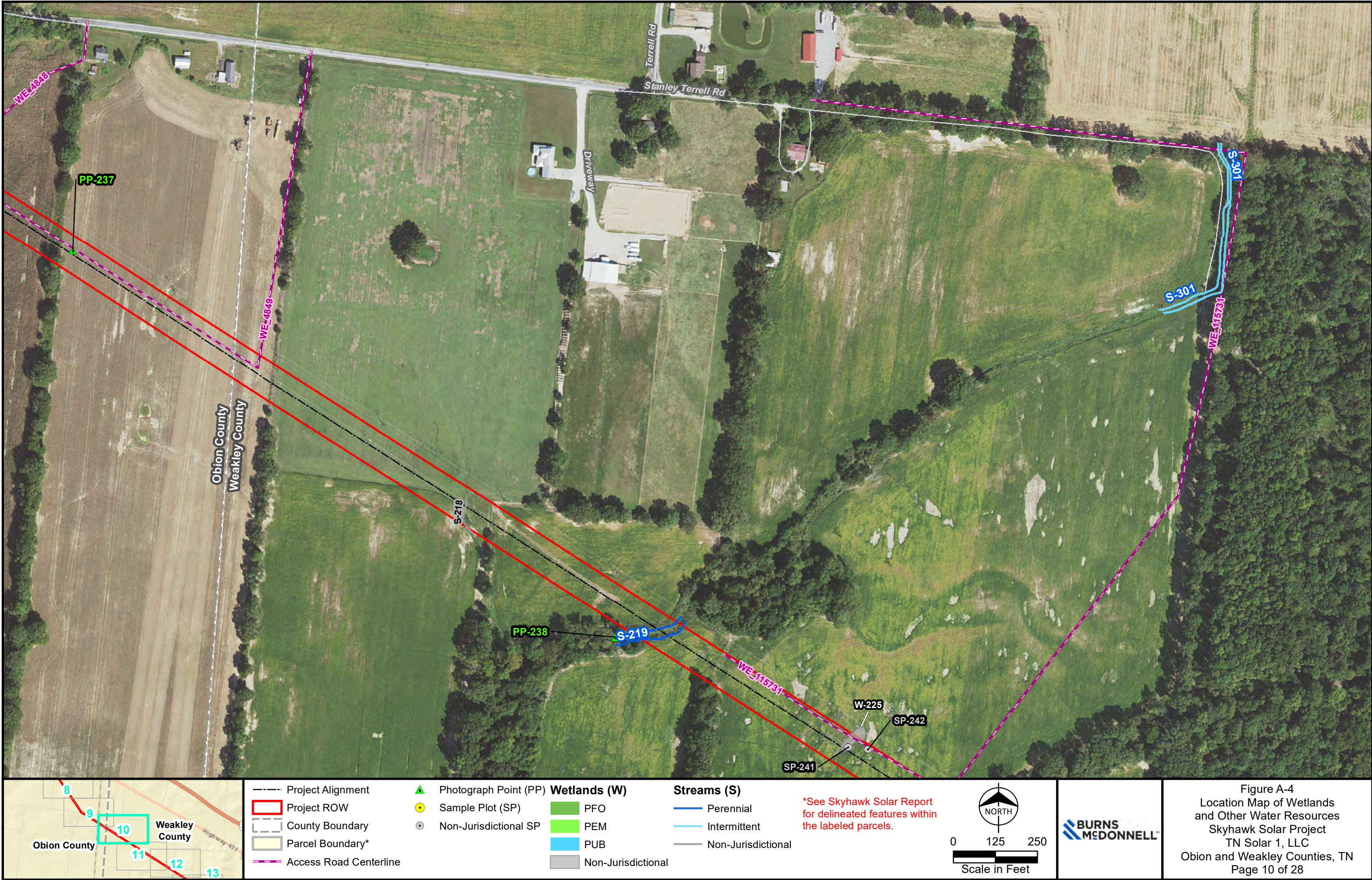
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Skyhawk Solar Project  
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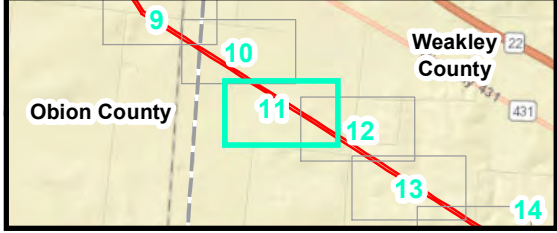
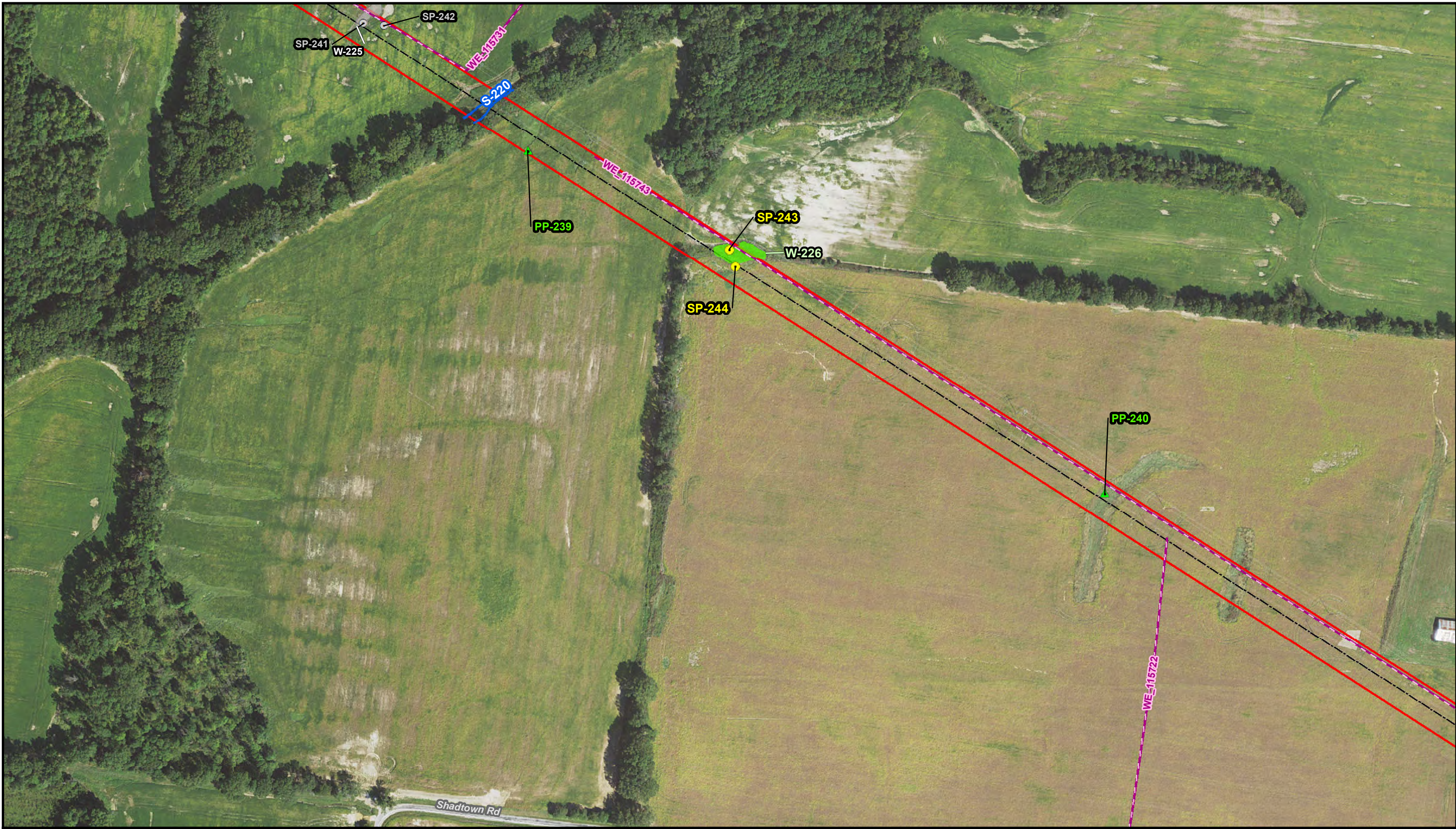


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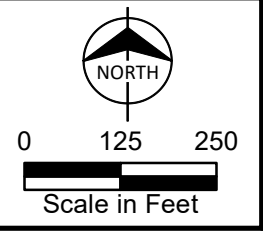
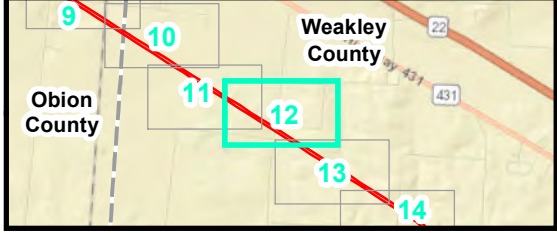
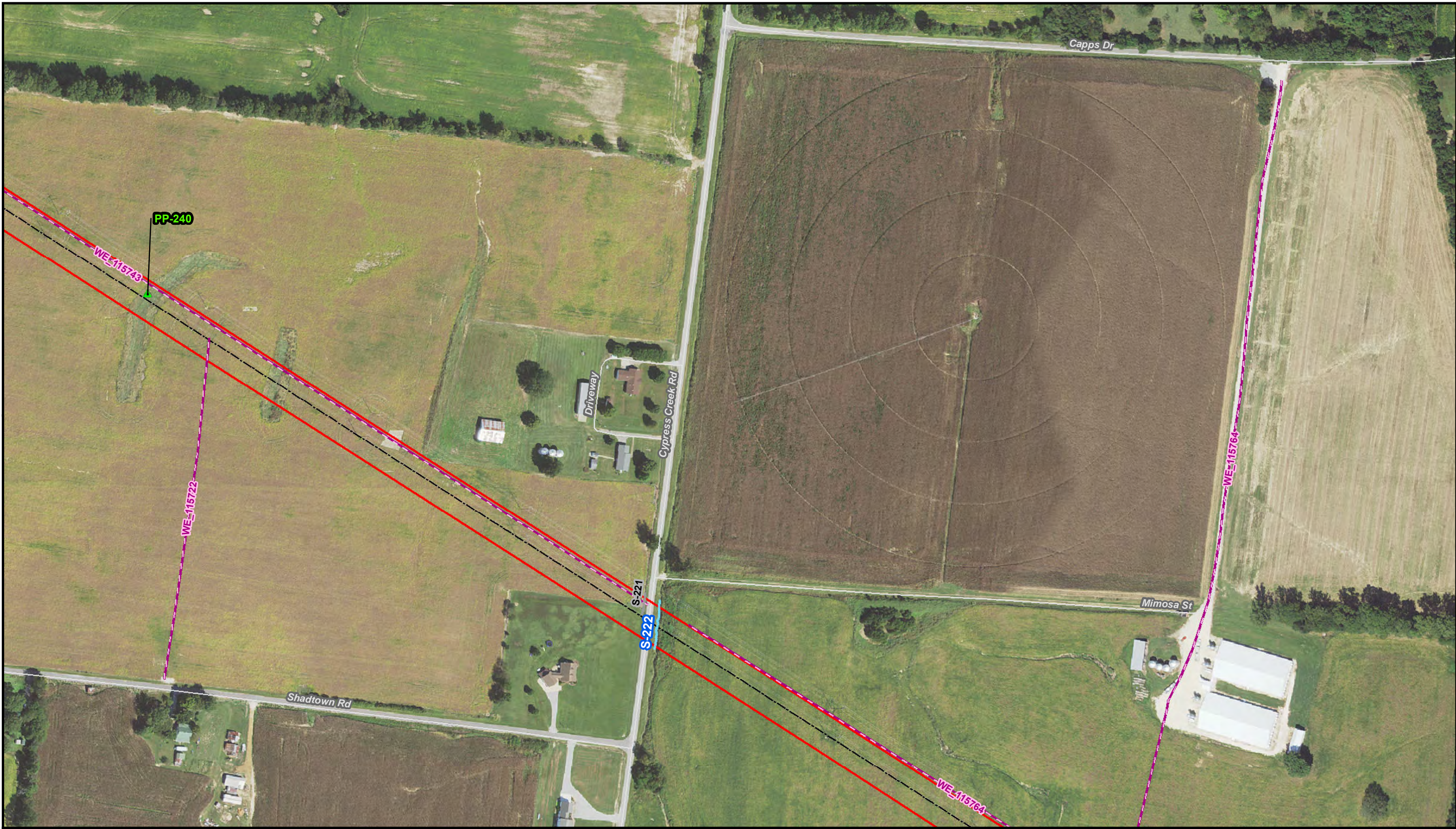


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Location Map of Wetlands  
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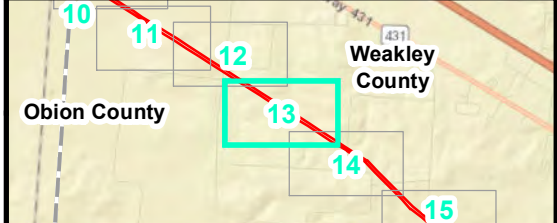


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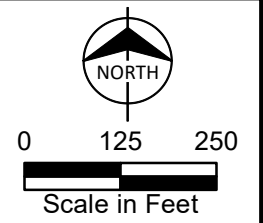
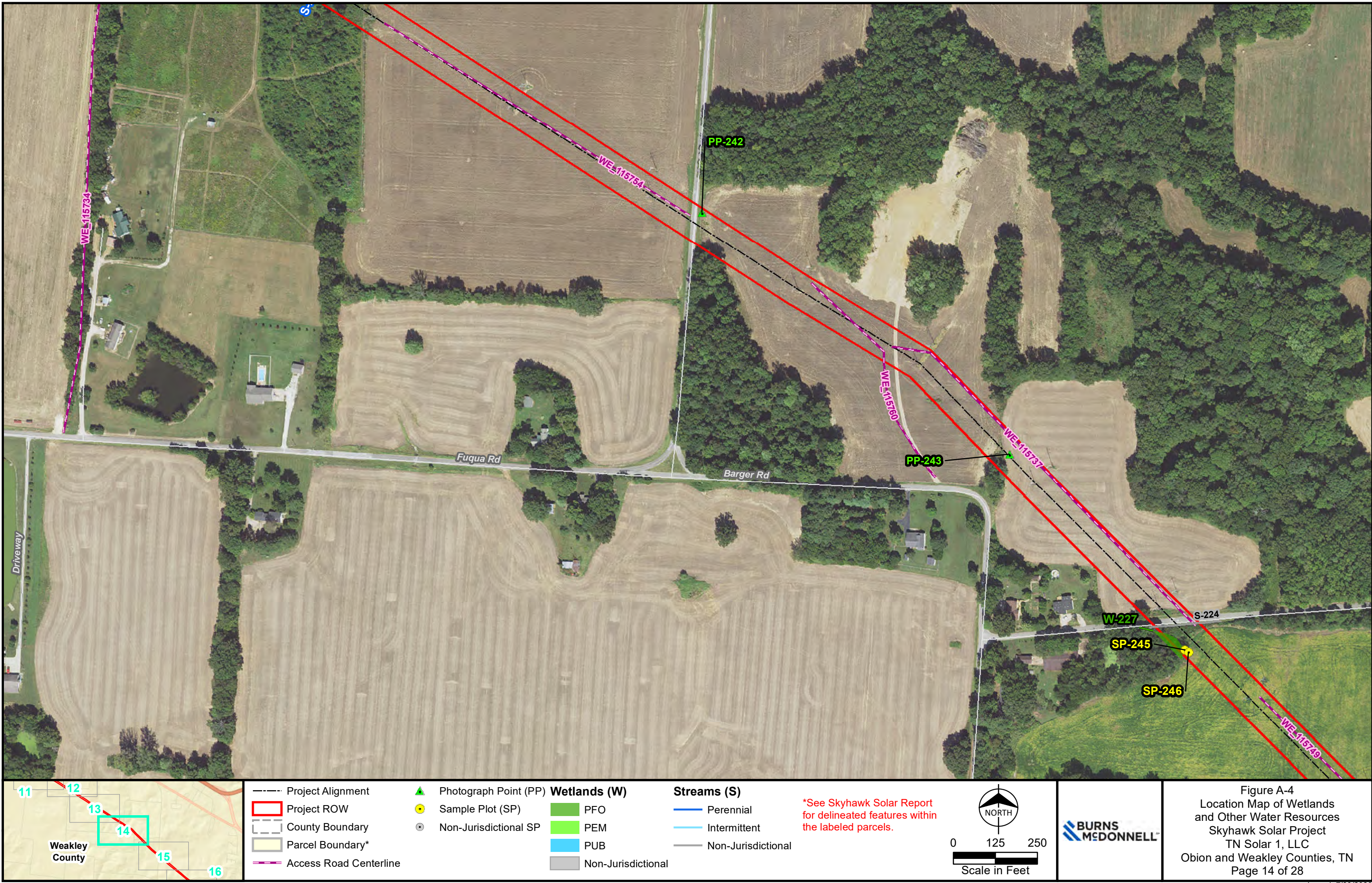


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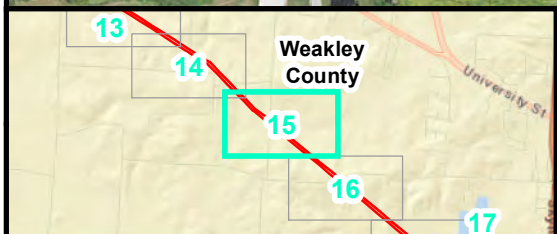


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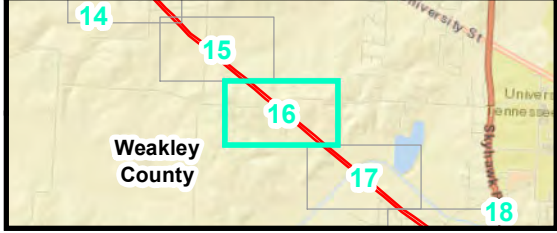
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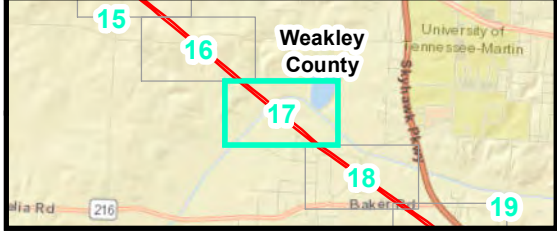
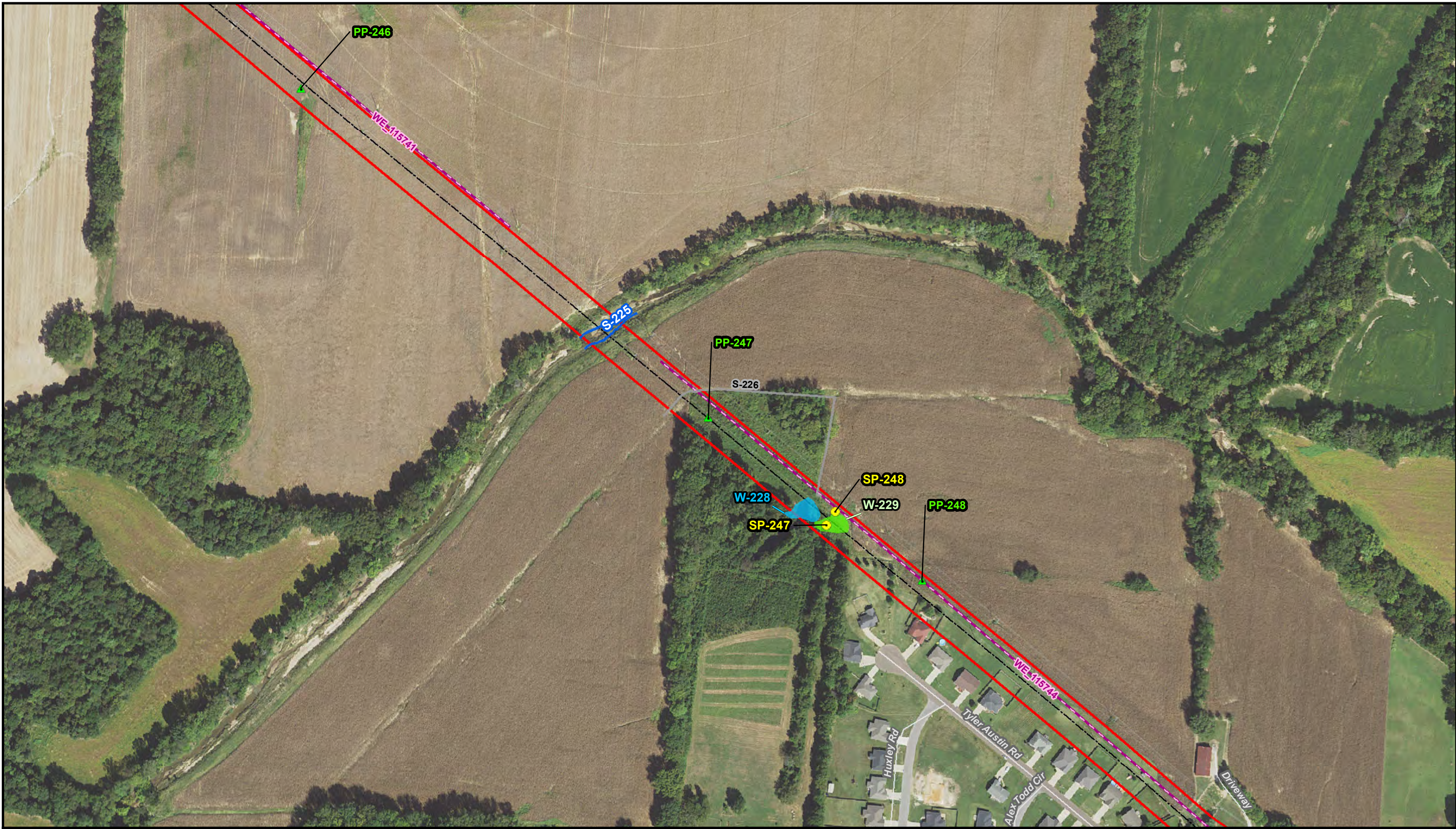


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Figure A-4  
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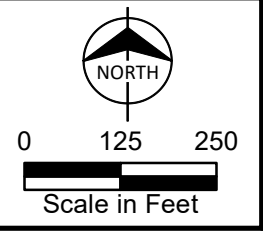
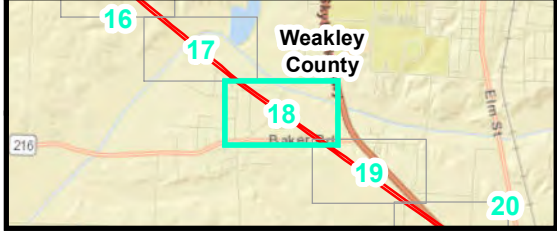
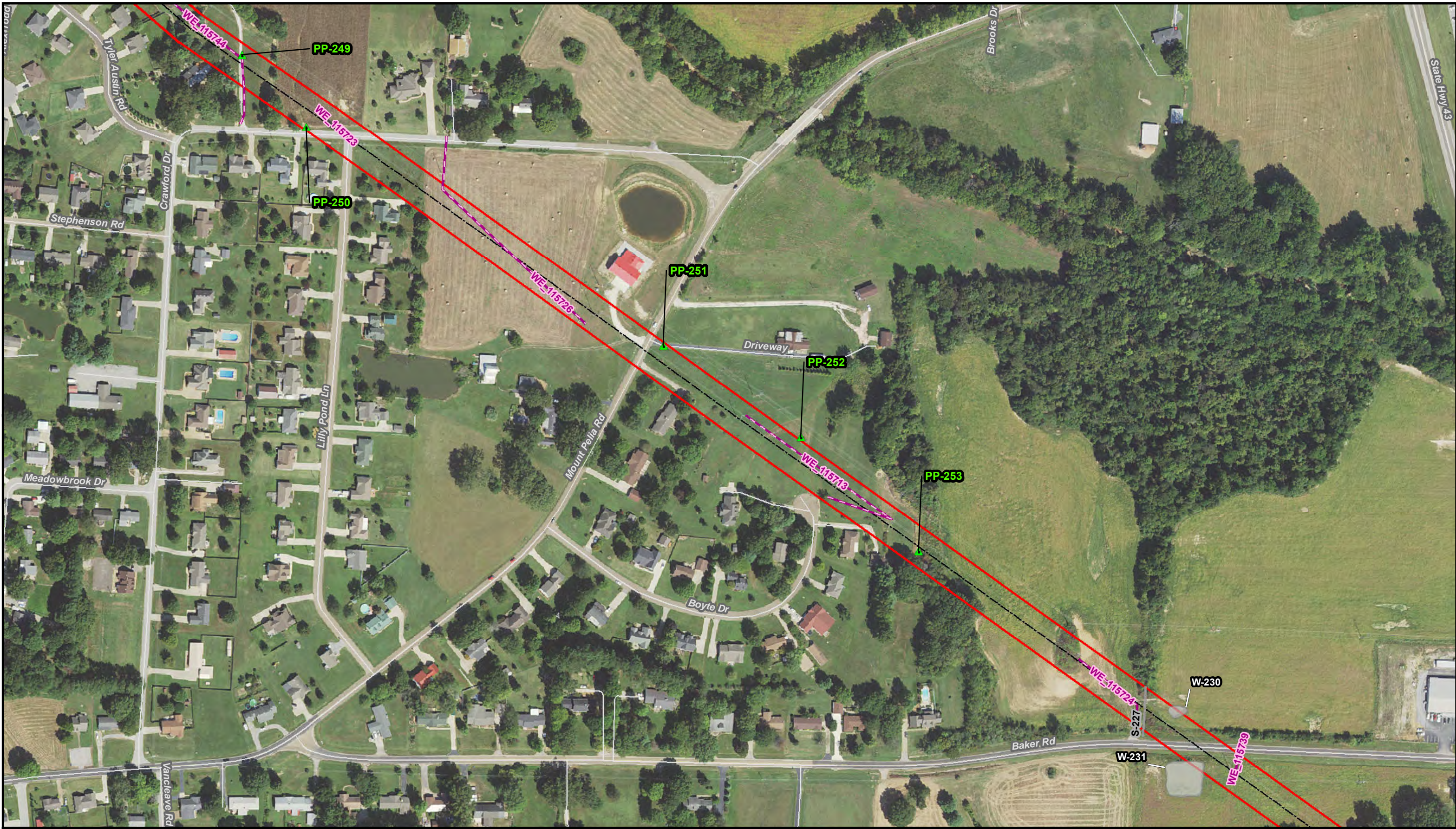


Figure A-4  
Location Map of Wetlands  
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Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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- Project Alignment
- Project ROW
- County Boundary
- Parcel Boundary\*
- Access Road Centerline

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

- Wetlands (W)**
- PFO
- PEM
- PUB
- Non-Jurisdictional

- Streams (S)**
- Perennial
- Intermittent
- Non-Jurisdictional

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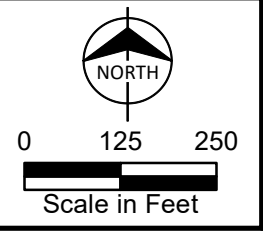
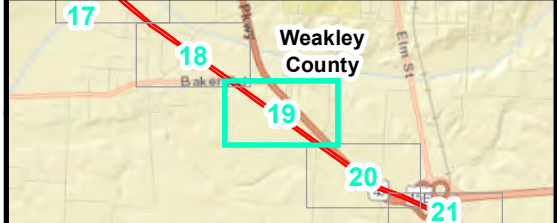
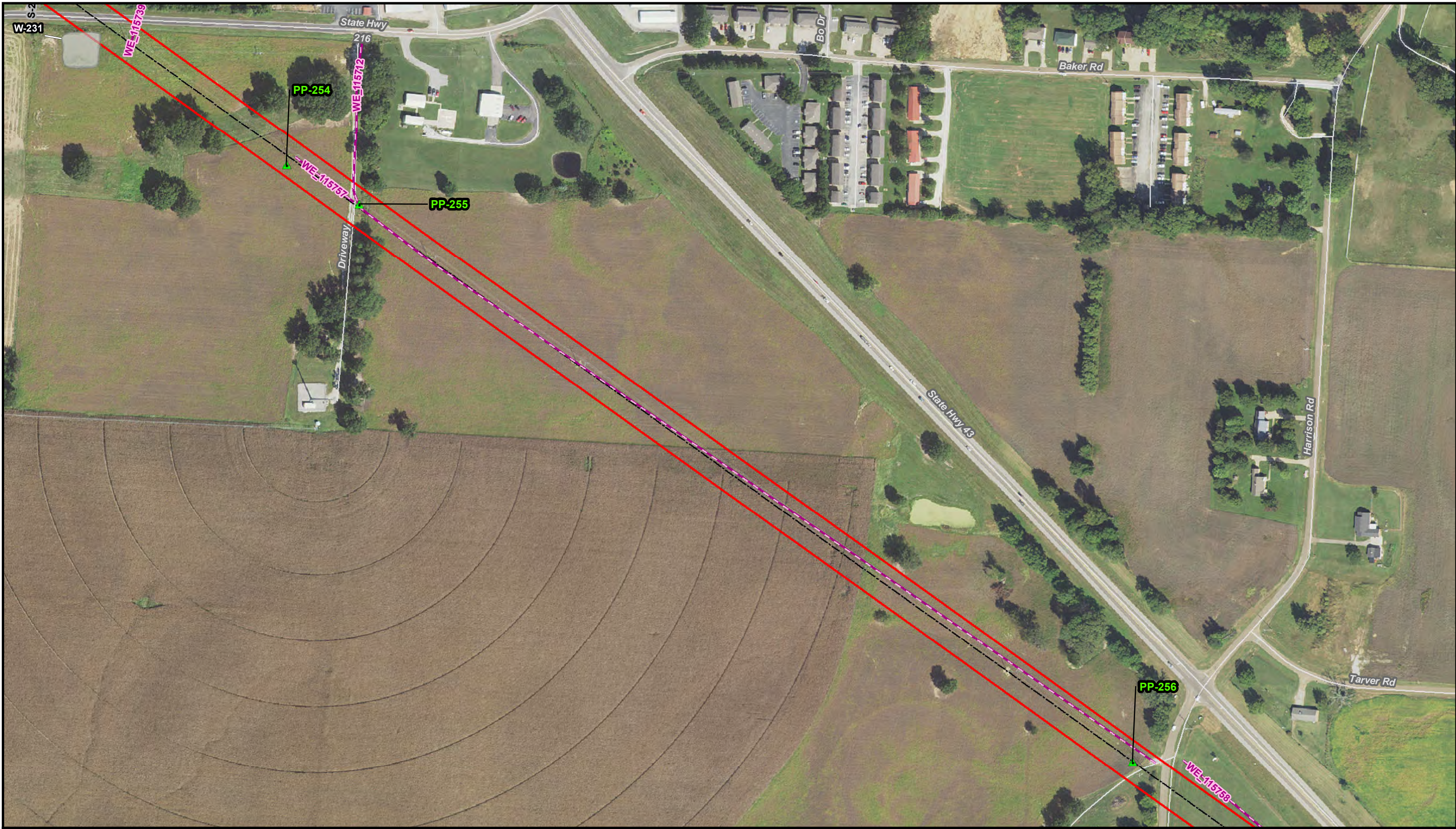


Figure A-4  
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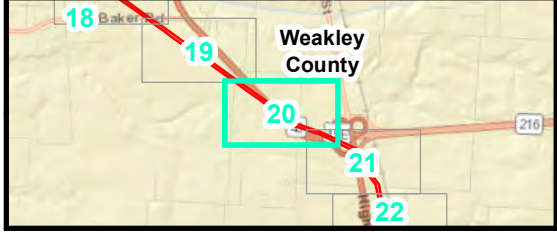
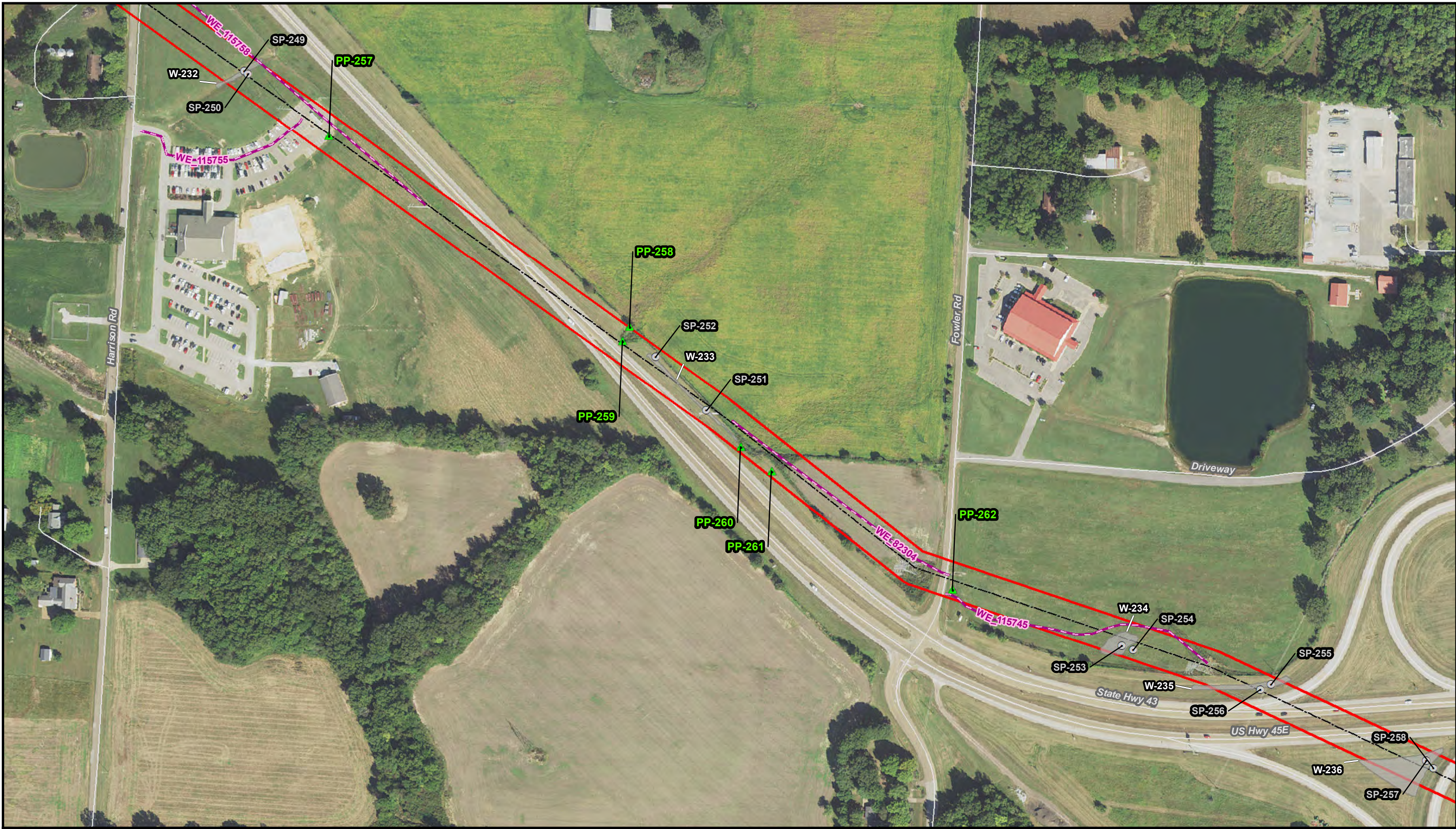


<ul style="list-style-type: none"><li>Project Alignment</li><li>Project ROW</li><li>County Boundary</li><li>Parcel Boundary*</li><li>Access Road Centerline</li></ul>	<ul style="list-style-type: none"><li>Photograph Point (PP)</li><li>Sample Plot (SP)</li><li>Non-Jurisdictional SP</li></ul>	<b>Wetlands (W)</b> <ul style="list-style-type: none"><li>PFO</li><li>PEM</li><li>PUB</li><li>Non-Jurisdictional</li></ul>	<b>Streams (S)</b> <ul style="list-style-type: none"><li>Perennial</li><li>Intermittent</li><li>Non-Jurisdictional</li></ul>	<p>*See Skyhawk Solar Report for delineated features within the labeled parcels.</p>	<div> NORTH</div> <div> Scale in Feet</div>
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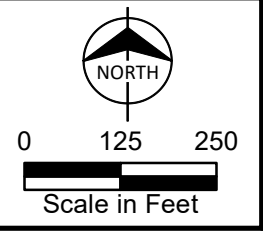
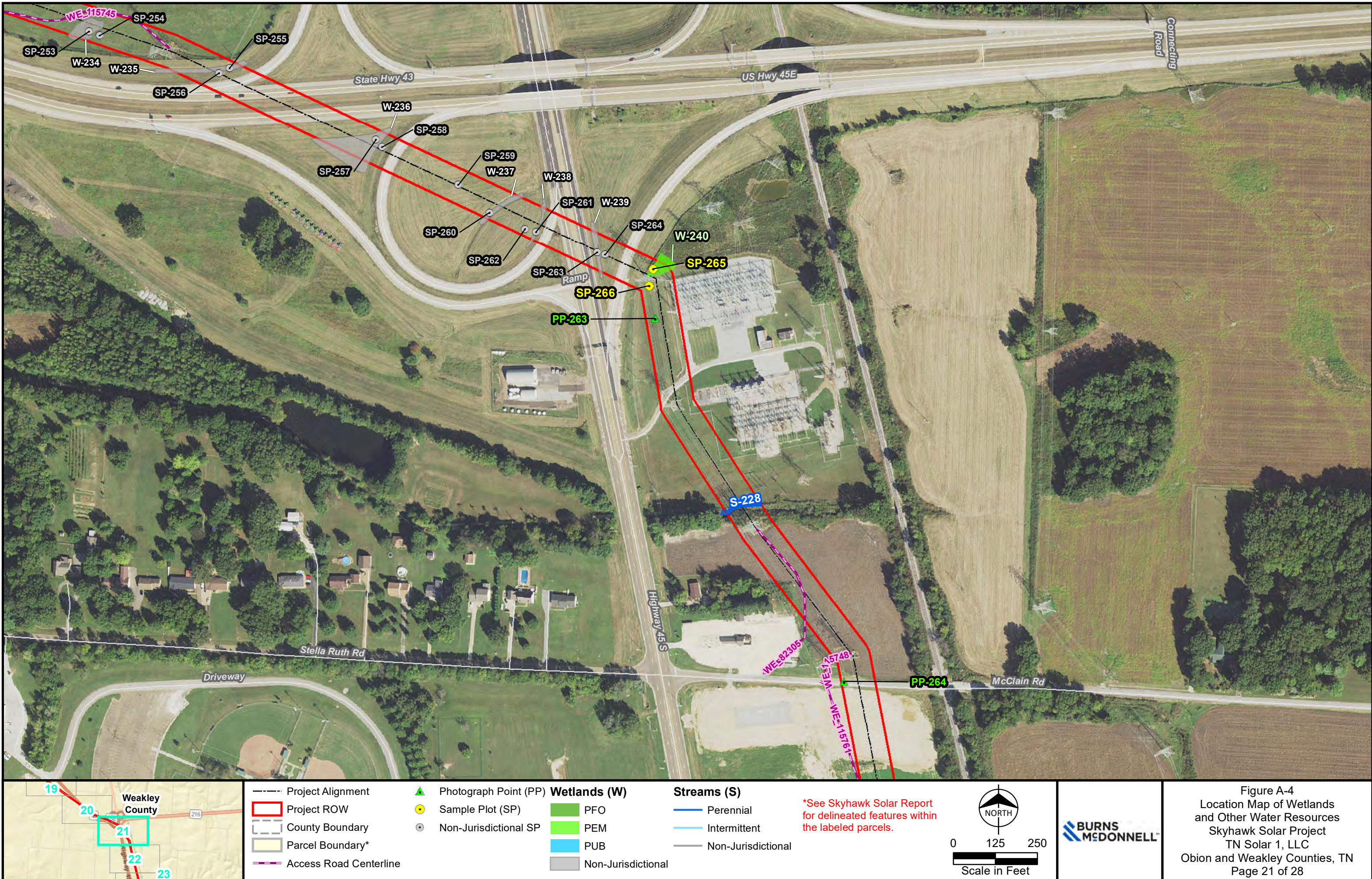


Figure A-4  
Location Map of Wetlands and Other Water Resources  
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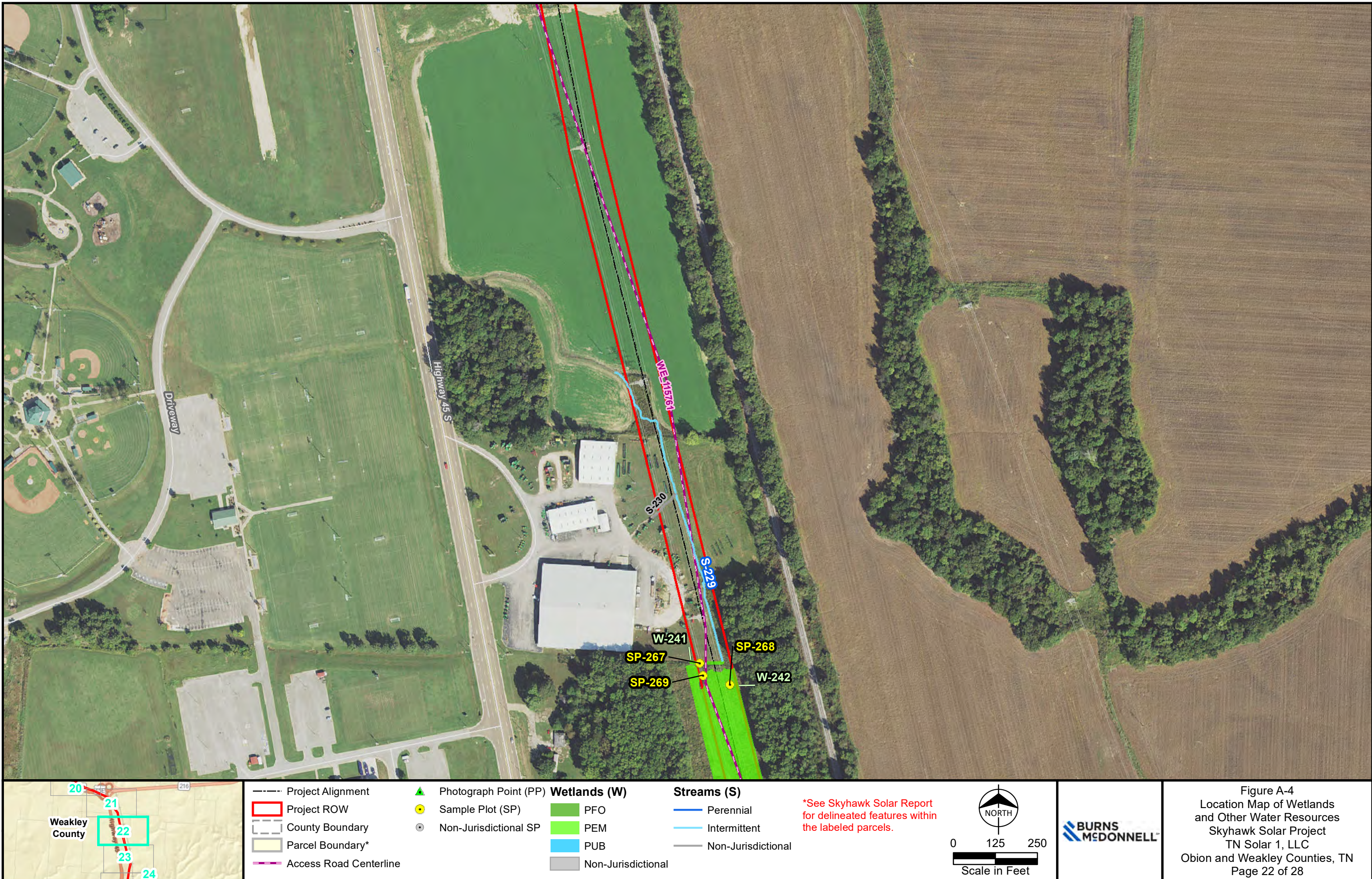
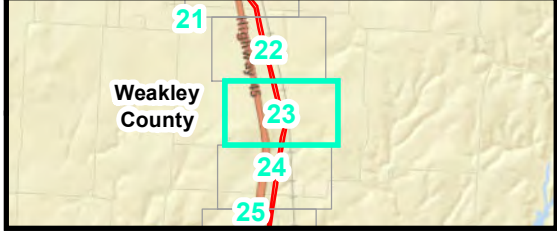
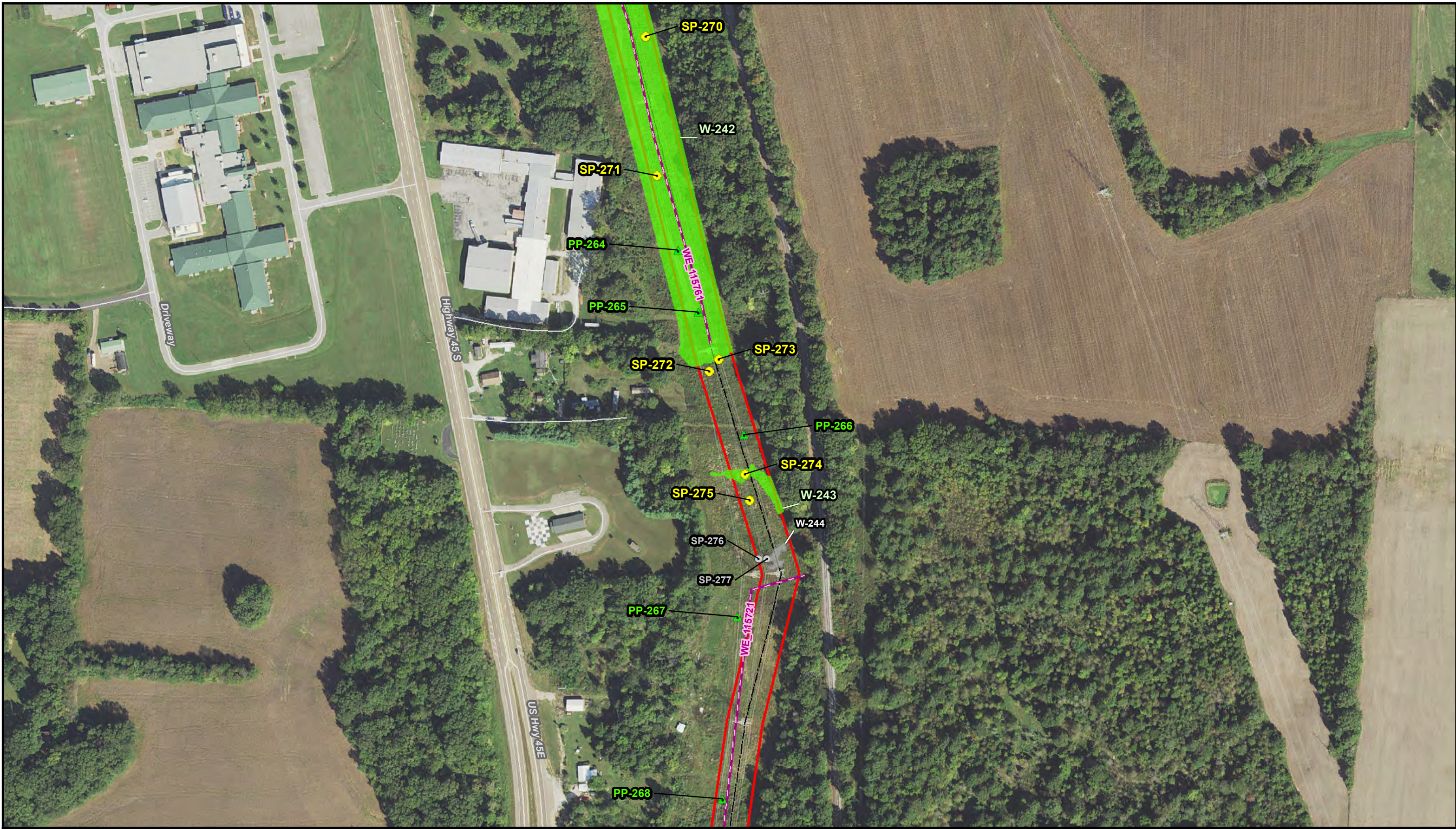


Figure A-4  
Location Map of Wetlands  
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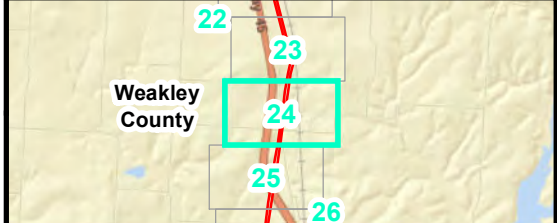
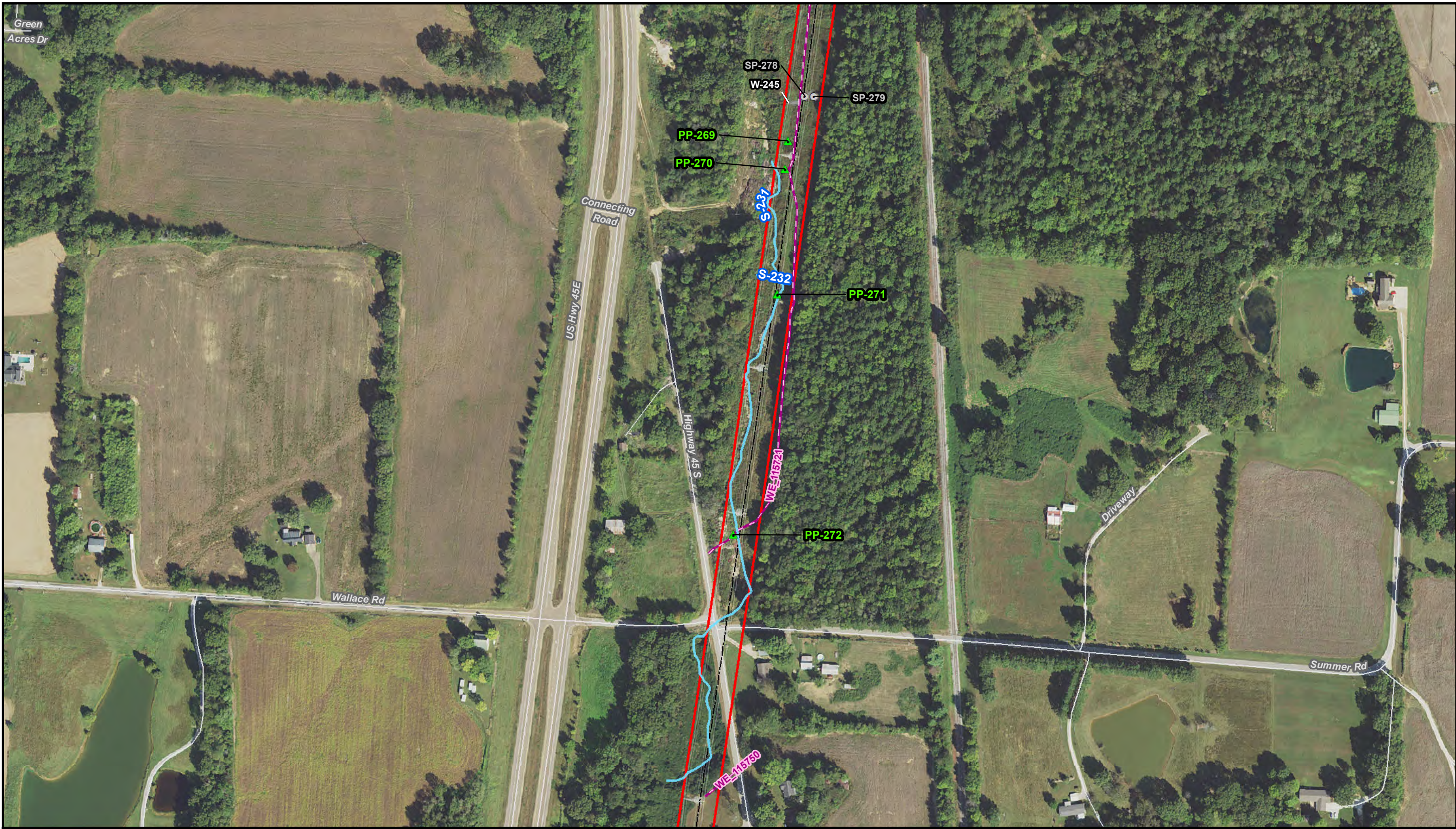
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**BURNS  
MCDONNELL**

Figure A-4  
Location Map of Wetlands  
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--- Project Alignment	▲ Photograph Point (PP)	<b>Wetlands (W)</b>	<b>Streams (S)</b>
▭ Project ROW	● Sample Plot (SP)	■ PFO	— Perennial
- - - County Boundary	○ Non-Jurisdictional SP	■ PEM	— Intermittent
▭ Parcel Boundary*		■ PUB	— Non-Jurisdictional
— Access Road Centerline		■ Non-Jurisdictional	

\*See Skyhawk Solar Report for delineated features within the labeled parcels.

NORTH

0

125

250

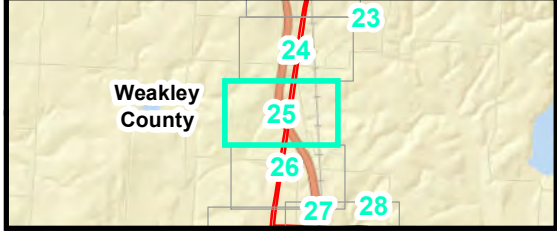
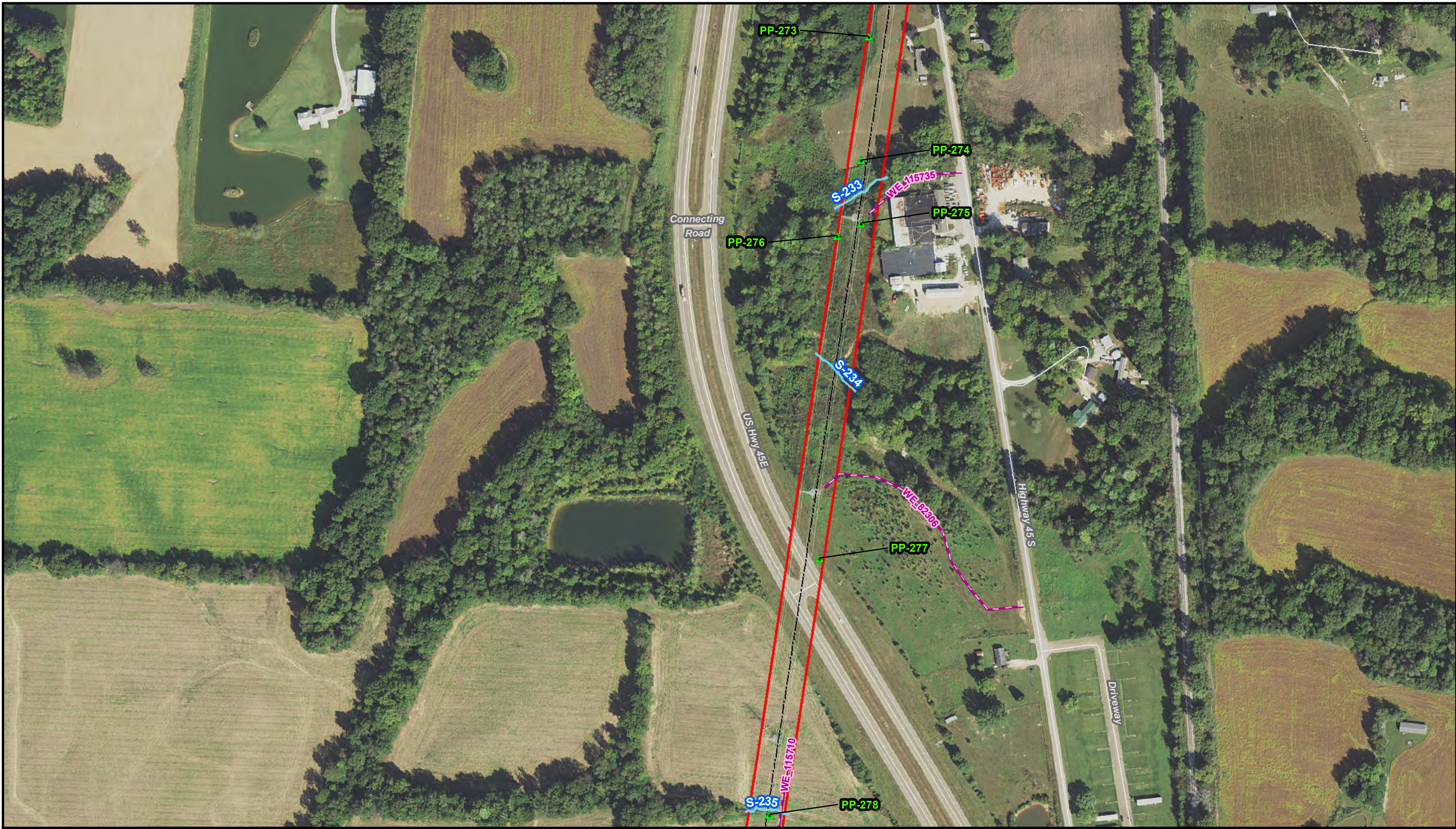
Scale in Feet

**BURNS  
MCDONNELL**

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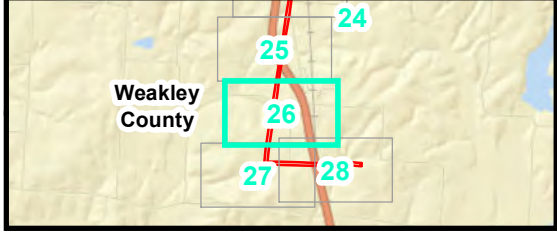
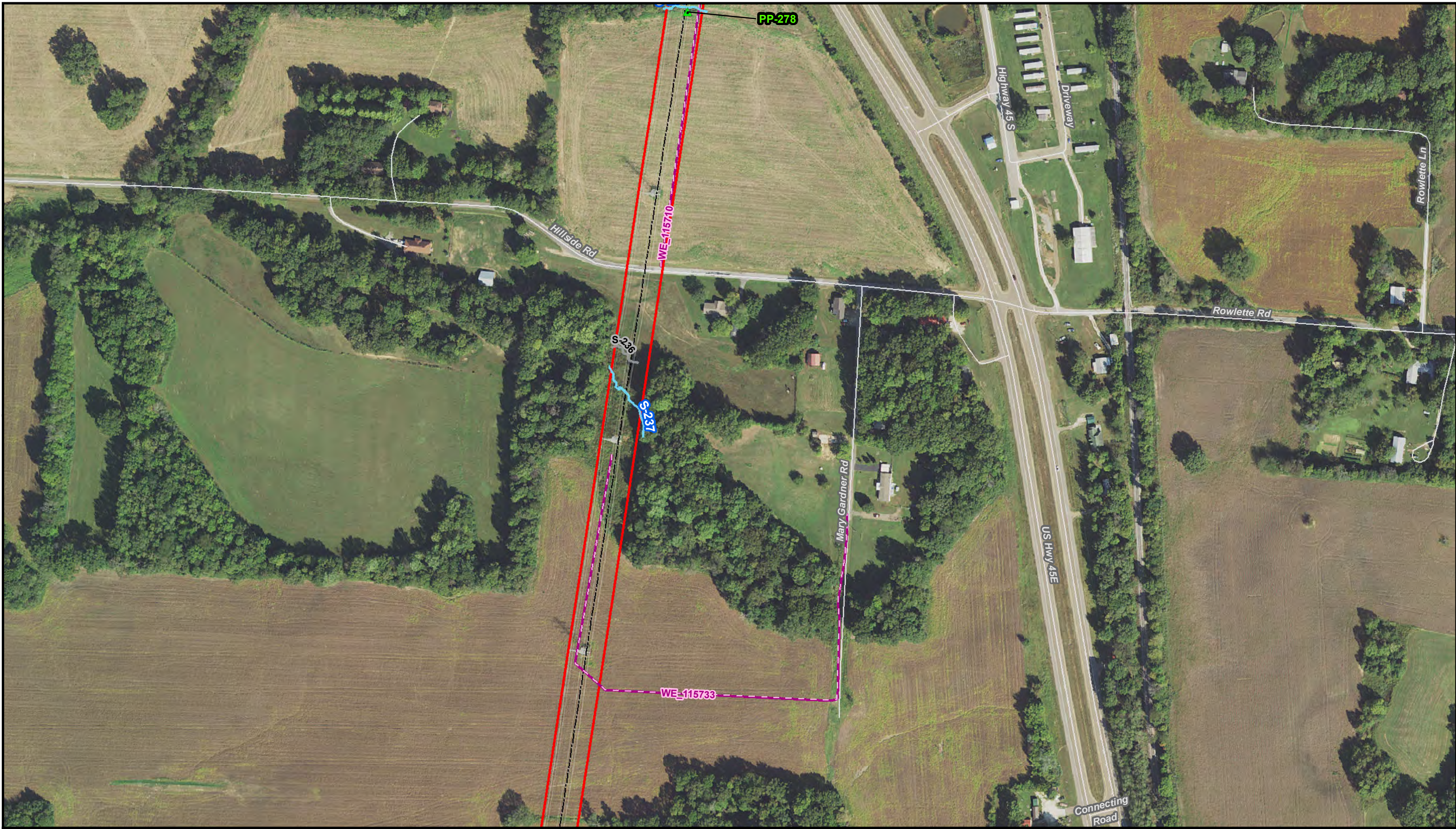


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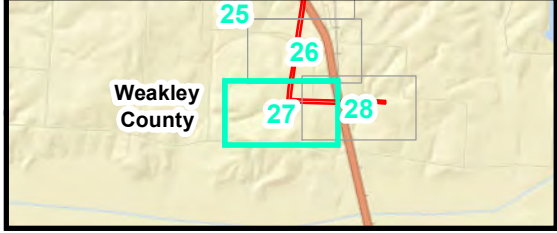


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Figure A-4  
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Skyhawk Solar Project  
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Project ROW	Sample Plot (SP)	PFO	Perennial
County Boundary	Non-Jurisdictional SP	PEM	Intermittent
Parcel Boundary*		PUB	Non-Jurisdictional
Access Road Centerline		Non-Jurisdictional	

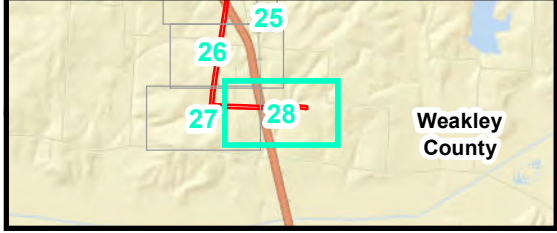
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Scale in Feet  
0 125 250

Figure A-4  
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**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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>210</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>2.1</u>	
Total % Cover of:	Multiply by:																			
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Column Totals: <u>100</u> (A)	<u>210</u> (B)																			
Prevalence Index = B/A = <u>2.1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex vulpinoidea</u>	60	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Andropogon gerardii</u>	25	✓	FACW																	
3. <u>Juncus effusus</u>	10	_____	OBL																	
4. <u>Packera glabella</u>	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: <u>50</u> 20% of total cover: <u>20</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



Sample Plot (SP)-201  
April 14, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>475</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.5</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>475</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>135</u> (A)	<u>475</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Lonicera japonica</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Carex vulpinoidea</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Poa pratensis</u>	<u>20</u>	_____	<u>FACU</u>															
4. <u>Rosa multiflora</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Rumex altissimus</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>58</u> 20% of total cover: <u>23</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-202  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>90</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>70</u>	x 1 = <u>70</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>90</u> (B)	Prevalence Index = B/A = <u>1.1</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>70</u>	x 1 = <u>70</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>80</u> (A)	<u>90</u> (B)																			
Prevalence Index = B/A = <u>1.1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: <u>30 ft r</u> )																				
1. <u>Phalaris arundinacea</u>	<u>70</u>	<u>✓</u>	<u>OBL</u>																	
2. <u>Conium maculatum</u>	<u>10</u>	_____	<u>FACW</u>																	
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: <u>40</u> 20% of total cover: <u>16</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|--|

<sup>3</sup>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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>40</u></td> <td>x 5 = <u>200</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>410</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.9</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>40</u>	x 5 = <u>200</u>	Column Totals: <u>105</u> (A)	<u>410</u> (B)	Prevalence Index = B/A = <u>3.9</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>40</u>	x 3 = <u>120</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>40</u>	x 5 = <u>200</u>																			
Column Totals: <u>105</u> (A)	<u>410</u> (B)																			
Prevalence Index = B/A = <u>3.9</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Cerastium fontanum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Lamium amplexicaule</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>UPL</u>																	
3. <u>Poa pratensis</u>	<u>20</u>	_____	<u>FACU</u>																	
4. <u>Conium maculatum</u>	<u>5</u>	_____	<u>FACW</u>																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
105% = Total Cover																				
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 4/3	100					Clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-204  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																						
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																					
2. _____	0	_____	_____																						
3. _____	0	_____	_____																						
4. _____	0	_____	_____																						
5. _____	0	_____	_____																						
6. _____	0	_____	_____																						
7. _____	0	_____	_____																						
8. _____	0	_____	_____																						
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;">Multiply by:</th> <th style="width: 40%;"></th> </tr> <tr> <td>OBL species <u>40</u></td> <td>x 1 =</td> <td><u>40</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 =</td> <td><u>30</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 =</td> <td><u>30</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 =</td> <td><u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td></td> <td><u>240</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.4</u>	Total % Cover of:	Multiply by:		OBL species <u>40</u>	x 1 =	<u>40</u>	FACW species <u>15</u>	x 2 =	<u>30</u>	FAC species <u>10</u>	x 3 =	<u>30</u>	FACU species <u>35</u>	x 4 =	<u>140</u>	UPL species <u>0</u>	x 5 =	<u>0</u>	Column Totals: <u>100</u> (A)		<u>240</u> (B)
Total % Cover of:	Multiply by:																								
OBL species <u>40</u>	x 1 =	<u>40</u>																							
FACW species <u>15</u>	x 2 =	<u>30</u>																							
FAC species <u>10</u>	x 3 =	<u>30</u>																							
FACU species <u>35</u>	x 4 =	<u>140</u>																							
UPL species <u>0</u>	x 5 =	<u>0</u>																							
Column Totals: <u>100</u> (A)		<u>240</u> (B)																							
50% of total cover: _____ 20% of total cover: _____																									
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																									
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: <u>30 ft r</u> )																									
1. <u>Hordeum pusillum</u>	<u>35</u>	<u>✓</u>	<u>FACU</u>																						
2. <u>Carex lurida</u>	<u>20</u>	<u>✓</u>	<u>OBL</u>																						
3. <u>Carex albicans</u>	<u>10</u>	_____	<u>FACW</u>																						
4. <u>Carex vulpinoidea</u>	<u>10</u>	_____	<u>FACW</u>																						
5. <u>Packera glabella</u>	<u>10</u>	_____	<u>OBL</u>																						
6. <u>Phalaris arundinacea</u>	<u>10</u>	_____	<u>OBL</u>																						
7. <u>Setaria parviflora</u>	<u>5</u>	_____	<u>FACW</u>																						
8. _____	0	_____	_____																						
9. _____	0	_____	_____																						
10. _____	0	_____	_____																						
11. _____	0	_____	_____																						
12. _____	0	_____	_____																						
100% = Total Cover																									
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																									
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																									
1. _____	0	_____	_____																						
2. _____	0	_____	_____																						
3. _____	0	_____	_____																						
4. _____	0	_____	_____																						
5. _____	0	_____	_____																						
_____ = Total Cover																									
50% of total cover: _____ 20% of total cover: _____																									
Remarks: (If observed, list morphological adaptations below). Prevalence index is met.																									

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-205  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>117</u> (A)</td> <td><u>422</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.6</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>117</u> (A)	<u>422</u> (B)	Prevalence Index = B/A = <u>3.6</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>2</u>	x 1 = <u>2</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>20</u>	x 5 = <u>100</u>																			
Column Totals: <u>117</u> (A)	<u>422</u> (B)																			
Prevalence Index = B/A = <u>3.6</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Stellaria media</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Lamium purpureum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>UPL</u>																	
3. <u>Setaria parviflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
4. <u>Plantago major</u>	<u>10</u>	_____	<u>FACW</u>																	
5. <u>Poa pratensis</u>	<u>10</u>	_____	<u>FACU</u>																	
6. <u>Schedonorus arundinaceus</u>	<u>10</u>	_____	<u>FACW</u>																	
7. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>																	
8. <u>Juncus effusus</u>	<u>2</u>	_____	<u>OBL</u>																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>117%</u> = Total Cover																				
50% of total cover: <u>59</u> 20% of total cover: <u>23</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: rock fillDepth (inches): 5Hydric 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>35</u></td> <td>x 5 = <u>175</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>380</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>35</u>	x 5 = <u>175</u>	Column Totals: <u>105</u> (A)	<u>380</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>35</u>	x 5 = <u>175</u>																	
Column Totals: <u>105</u> (A)	<u>380</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Valerianella radiata</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Asclepias syriaca</u>	<u>35</u>	<u>✓</u>	<u>UPL</u>															
3. <u>Packera glabella</u>	<u>10</u>	_____	<u>OBL</u>															
4. <u>Solidago altissima</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
6. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
105% = Total Cover																		
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-207  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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".		

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: _____		

Remarks: (If observed, list morphological adaptations below).  
 Rapid test is met.

**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<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>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 ☐



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**Type: rockDepth (inches): 6Hydric 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.

Origis Energy  
Skyhawk Solar



SP-208  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Cornus amomum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
5% = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>310</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.6</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>120</u> (A)	<u>310</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>50</u>	x 2 = <u>100</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>120</u> (A)	<u>310</u> (B)																	
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>																	
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Carex vulpinoidea</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Carex albicans</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Hordeum pusillum</u>	<u>20</u>		<u>FACU</u>															
4. <u>Schoenoplectus pungens</u>	<u>10</u>		<u>OBL</u>															
5. <u>Lamium purpureum</u>	<u>5</u>		<u>UPL</u>															
6. <u>Packera glabella</u>	<u>5</u>		<u>OBL</u>															
7. <u>Rubus argutus</u>	<u>5</u>		<u>FACW</u>															
8. _____	<u>0</u>																	
9. _____	<u>0</u>																	
10. _____	<u>0</u>																	
11. _____	<u>0</u>																	
12. _____	<u>0</u>																	
115% = Total Cover																		
50% of total cover: <u>58</u> 20% of total cover: <u>23</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>																	
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.          <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-209  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>105</u></td> <td>x 3 = <u>315</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>25</u></td> <td>x 5 = <u>125</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>540</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>105</u>	x 3 = <u>315</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>25</u>	x 5 = <u>125</u>	Column Totals: <u>155</u> (A)	<u>540</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>105</u>	x 3 = <u>315</u>																			
FACU species <u>25</u>	x 4 = <u>100</u>																			
UPL species <u>25</u>	x 5 = <u>125</u>																			
Column Totals: <u>155</u> (A)	<u>540</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Setaria pumila</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Valerianella radiata</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Lamium purpureum</u>	<u>25</u>		<u>UPL</u>																	
4. <u>Cerastium fontanum</u>	<u>20</u>		<u>FACW</u>																	
5. <u>Lonicera japonica</u>	<u>20</u>		<u>FACU</u>																	
6. <u>Galium aparine</u>	<u>5</u>		<u>FACU</u>																	
7. <u>Rubus argutus</u>	<u>5</u>		<u>FACW</u>																	
8. _____	<u>0</u>																			
9. _____	<u>0</u>																			
10. _____	<u>0</u>																			
11. _____	<u>0</u>																			
12. _____	<u>0</u>																			
155% = Total Cover																				
50% of total cover: <u>78</u> 20% of total cover: <u>31</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 4/4	100					Silt Loam	
4 - 10	10YR 5/4	75	2.5YR 4/8	25	C	M	Silty clay loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-210  
April 14, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>175</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.5</u>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>175</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>80</u>	x 1 = <u>80</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>115</u> (A)	<u>175</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Rubus argutus</u>	10	✓	FACW															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
10% = Total Cover																		
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Carex stricta</u>	50	✓	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Juncus effusus</u>	20	✓	OBL															
3. <u>Carex vulpinoidea</u>	10	_____	FACW															
4. <u>Rubus argutus</u>	10	_____	FACW															
5. <u>Andropogon gerardii</u>	5	_____	FACW															
6. <u>Packera glabella</u>	5	_____	OBL															
7. <u>Typha latifolia</u>	5	_____	OBL															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
105% = Total Cover																		
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.  10% cover of Sphagnum sp. was present at the time of sampling.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-211  
April 15, 2020  
Obion County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____	0	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>119</u> (A)</td> <td><u>355</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>115</u>	x 3 = <u>345</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>119</u> (A)	<u>355</u> (B)	Prevalence Index = B/A = <u>3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>2</u>	x 1 = <u>2</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>115</u>	x 3 = <u>345</u>																			
FACU species <u>2</u>	x 4 = <u>8</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>119</u> (A)	<u>355</u> (B)																			
Prevalence Index = B/A = <u>3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: <u>30 ft r</u> )																				
1. <u>Ranunculus sardous</u>	<u>75</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Elymus virginicus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACW</u>																	
4. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>																	
5. <u>Erigeron annuus</u>	<u>2</u>	_____	<u>FACU</u>																	
6. <u>Juncus effusus</u>	<u>2</u>	_____	<u>OBL</u>																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
<u>119%</u> = Total Cover																				
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 14	10YR 5/3	70	10YR 3/6	25	C	M	Silt Loam	
0 - 14			10YR 2/2	5	C	M		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>✓</u> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>380</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.8</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>380</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>45</u>	x 4 = <u>180</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>135</u> (A)	<u>380</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Ranunculus sardous</u>	<u>50</u>	<u>✓</u>	<u>FACW</u>															
2. <u>Hordeum pusillum</u>	<u>45</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Lemna minor</u>	<u>30</u>	<u>✓</u>	<u>OBL</u>															
4. <u>Packera glabella</u>	<u>5</u>	_____	<u>OBL</u>															
5. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>135%</u> = Total Cover																		
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 10Hydric 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>415</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>415</u> (B)	Prevalence Index = B/A = <u>3.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>85</u>	x 3 = <u>255</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>125</u> (A)	<u>415</u> (B)																			
Prevalence Index = B/A = <u>3.3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Andropogon gerardii</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Lonicera japonica</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>																	
3. <u>Valerianella radiata</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>																	
4. <u>Elymus virginicus</u>	<u>15</u>	_____	<u>FACW</u>																	
5. <u>Plantago major</u>	<u>10</u>	_____	<u>FACW</u>																	
6. <u>Cirsium arvense</u>	<u>5</u>	_____	<u>FACU</u>																	
7. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>																	
8. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>																	
9. <u>Stellaria media</u>	<u>5</u>	_____	<u>FACU</u>																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>125%</u> = Total Cover																				
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-214  
April 15, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>155</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.1</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>155</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>40</u>	x 2 = <u>80</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>75</u> (A)	<u>155</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Rumex altissimus</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Carex stricta</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
3. <u>Elymus virginicus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
4. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>38</u> 20% of total cover: <u>15</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10Y 4/1	75	10YR 4/6	25	C		Mucky Loam/Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input checked="" type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 12Hydric 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>370</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>370</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>65</u>	x 4 = <u>260</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>110</u> (A)	<u>370</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Dactylis glomerata</u>	<u>25</u>	<u>✓</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Poa pratensis</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Carex vulpinoidea</u>	<u>15</u>	<u>✓</u>	<u>FACW</u>															
4. <u>Solidago altissima</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Trifolium repens</u>	<u>10</u>	_____	<u>FACU</u>															
6. <u>Viola sororia</u>	<u>10</u>	_____	<u>FACW</u>															
7. <u>Carex albicans</u>	<u>5</u>	_____	<u>FACW</u>															
8. <u>Juncus dudleyi</u>	<u>5</u>	_____	<u>FACW</u>															
9. <u>Rumex altissimus</u>	<u>5</u>	_____	<u>FACW</u>															
10. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>110%</u> = Total Cover																		
50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: compact soilDepth (inches): 12Hydric 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>280</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>280</u> (B)	Prevalence Index = B/A = <u>2.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>280</u> (B)																			
Prevalence Index = B/A = <u>2.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Elymus virginicus</u>	<u>50</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Carex vulpinoidea</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Rumex altissimus</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Rubus argutus</u>	<u>5</u>	_____	<u>FACW</u>																	
5. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>110%</u> = Total Cover																				
50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.  Photograph C-1.																				

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-217  
April 15, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>120</u></td> <td>x 4 = <u>480</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>570</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>120</u>	x 4 = <u>480</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>570</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>120</u>	x 4 = <u>480</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>150</u> (A)	<u>570</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Schizachyrium scoparium</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Plantago lanceolata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Poa pratensis</u>	<u>20</u>	_____	<u>FACU</u>															
4. <u>Schedonorus arundinaceus</u>	<u>20</u>	_____	<u>FACW</u>															
5. <u>Erigeron annuus</u>	<u>10</u>	_____	<u>FACU</u>															
6. <u>Valerianella radiata</u>	<u>10</u>	_____	<u>FACW</u>															
7. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>75</u> 20% of total cover: <u>30</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-218  
April 15, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: Wetland hydrology indicators are met.		

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: _____		

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

Rapid test is met.

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:	
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Definitions of Four Vegetation Strata:	
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Hydrophytic Vegetation Present?</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/1	65	7.5YR 4/4	35	C	M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 8Hydric 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.

Origis Energy  
Skyhawk Solar



SP-219  
April 15, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	0	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>320</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>80</u> (A)	<u>320</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>30</u>	x 4 = <u>120</u>																	
UPL species <u>30</u>	x 5 = <u>150</u>																	
Column Totals: <u>80</u> (A)	<u>320</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Passiflora incarnata</u>	<u>30</u>	<u>✓</u>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Solidago altissima</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Eupatorium capillifolium</u>	<u>10</u>	_____	<u>FACU</u>															
4. <u>Viola sororia</u>	<u>10</u>	_____	<u>FACW</u>															
5. <u>Packera glabella</u>	<u>5</u>	_____	<u>OBL</u>															
6. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
80% = Total Cover																		
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>200</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>200</u> (B)	Prevalence Index = B/A = <u>2</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>200</u> (B)																			
Prevalence Index = B/A = <u>2</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex vulpinoidea</u>	<u>70</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Juncus dudleyi</u>	<u>10</u>	_____	<u>FACW</u>																	
3. <u>Rumex altissimus</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Juncus effusus</u>	<u>5</u>	_____	<u>OBL</u>																	
5. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
100% = Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																				

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-221  
April 15, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>70</u></td> <td>x 4 = <u>280</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>300</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>70</u>	x 4 = <u>280</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>300</u> (B)	Prevalence Index = B/A = <u>3.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>70</u>	x 4 = <u>280</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>80</u> (A)	<u>300</u> (B)																			
Prevalence Index = B/A = <u>3.8</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Poa pratensis</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Carex vulpinoidea</u>	<u>5</u>		<u>FACW</u>																	
3. <u>Juncus dudleyi</u>	<u>5</u>		<u>FACW</u>																	
4. _____	<u>0</u>																			
5. _____	<u>0</u>																			
6. _____	<u>0</u>																			
7. _____	<u>0</u>																			
8. _____	<u>0</u>																			
9. _____	<u>0</u>																			
10. _____	<u>0</u>																			
11. _____	<u>0</u>																			
12. _____	<u>0</u>																			
_____ = Total Cover																				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-222  
April 15, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>455</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>455</u> (B)	Prevalence Index = B/A = <u>3.1</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>15</u>	x 2 = <u>30</u>																			
FAC species <u>65</u>	x 3 = <u>195</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>145</u> (A)	<u>455</u> (B)																			
Prevalence Index = B/A = <u>3.1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Lonicera japonica</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Valerianella radiata</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Setaria pumila</u>	<u>20</u>	_____	<u>FACW</u>																	
4. <u>Carex vulpinoidea</u>	<u>15</u>	_____	<u>FACW</u>																	
5. <u>Carex stricta</u>	<u>10</u>	_____	<u>OBL</u>																	
6. <u>Andropogon gerardii</u>	<u>5</u>	_____	<u>FACW</u>																	
7. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>																	
8. <u>Stellaria media</u>	<u>5</u>	_____	<u>FACU</u>																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>145%</u> = Total Cover																				
50% of total cover: <u>73</u> 20% of total cover: <u>29</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.																				

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b> <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>122</u> (A)</td> <td><u>267</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.2</u>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>122</u> (A)	<u>267</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>2</u>	x 1 = <u>2</u>																	
FACW species <u>100</u>	x 2 = <u>200</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>122</u> (A)	<u>267</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Rumex altissimus</u>	60	✓	FACW															
2. <u>Lysimachia nummularia</u>	30	✓	FACW															
3. <u>Elymus virginicus</u>	15	_____	FACW															
4. <u>Carex vulpinoidea</u>	10	_____	FACW															
5. <u>Solidago altissima</u>	5	_____	FACU															
6. <u>Lemna minor</u>	2	_____	OBL															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
122% = Total Cover																		
50% of total cover: <u>61</u> 20% of total cover: <u>24</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																		

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>385</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>385</u> (B)	Prevalence Index = B/A = <u>3.1</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>35</u>	x 3 = <u>105</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>125</u> (A)	<u>385</u> (B)																			
Prevalence Index = B/A = <u>3.1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Solidago altissima</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Carex vulpinoidea</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Elymus virginicus</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Viola sororia</u>	<u>10</u>	_____	<u>FACW</u>																	
5. <u>Acer negundo</u>	<u>5</u>	_____	<u>FACW</u>																	
6. <u>Rubus argutus</u>	<u>5</u>	_____	<u>FACW</u>																	
7. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-225  
April 15, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>375</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.1</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>375</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>50</u>	x 3 = <u>150</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>120</u> (A)	<u>375</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Ambrosia artemisiifolia</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Carex sp.*</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Packera glabella</u>	<u>15</u>	_____	<u>OBL</u>															
4. <u>Acer negundo</u>	<u>5</u>	_____	<u>FACW</u>															
5. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Rosa multiflora</u>	<u>5</u>	_____	<u>FACU</u>															
7. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
8. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>120%</u> = Total Cover																		
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														
*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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): 0Hydric Soil Present? Yes \_\_\_\_\_ No ☒**Remarks:**

No indicators are met.



Photograph: View from upland SP-226, facing north.

Origis Energy  
Skyhawk Solar



SP-226  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>12</u></td> <td>x 3 = <u>36</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>87</u> (A)</td> <td><u>141</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.6</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>12</u>	x 3 = <u>36</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>87</u> (A)	<u>141</u> (B)	Prevalence Index = B/A = <u>1.6</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>55</u>	x 1 = <u>55</u>																			
FACW species <u>15</u>	x 2 = <u>30</u>																			
FAC species <u>12</u>	x 3 = <u>36</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>87</u> (A)	<u>141</u> (B)																			
Prevalence Index = B/A = <u>1.6</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Lemna minor</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Lysimachia nummularia</u>	<u>15</u>		<u>FACW</u>																	
3. <u>Carex sp.*</u>	<u>10</u>		<u>FACW</u>																	
4. <u>Packera glabella</u>	<u>5</u>		<u>OBL</u>																	
5. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>																	
6. <u>Acer negundo</u>	<u>2</u>		<u>FACW</u>																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
<u>87%</u> = Total Cover																				
50% of total cover: <u>44</u> 20% of total cover: <u>17</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
*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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 18	10YR 5/1	80	7.5YR 4/6	20	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-227  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>460</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.5</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>70</u>	x 3 = <u>210</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>130</u> (A)	<u>460</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>70</u>	x 3 = <u>210</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>130</u> (A)	<u>460</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Elymus virginicus</u>	40	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Solidago altissima</u>	30	✓	FACU															
3. <u>Carex sp.*</u>	25		FACW															
4. <u>Rosa multiflora</u>	20		FACU															
5. <u>Lathyrus latifolius</u>	5		UPL															
6. <u>Ranunculus sardous</u>	5		FACW															
7. <u>Setaria faberi</u>	5		UPL															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
130% = Total Cover																		
50% of total cover: <u>65</u> 20% of total cover: <u>26</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														
*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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>27</u></td> <td>x 1 = <u>27</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>19</u></td> <td>x 3 = <u>57</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>46</u> (A)</td> <td><u>84</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.8</u>	Total % Cover of:	Multiply by:	OBL species <u>27</u>	x 1 = <u>27</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>19</u>	x 3 = <u>57</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>46</u> (A)	<u>84</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>27</u>	x 1 = <u>27</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>19</u>	x 3 = <u>57</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>46</u> (A)	<u>84</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Ludwigia palustris</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Carex sp.*</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Ambrosia trifida</u>	<u>5</u>	_____	<u>FACW</u>															
4. <u>Packera glabella</u>	<u>5</u>	_____	<u>OBL</u>															
5. <u>Elymus virginicus</u>	<u>2</u>	_____	<u>FACW</u>															
6. <u>Juncus effusus</u>	<u>2</u>	_____	<u>OBL</u>															
7. <u>Rumex crispus</u>	<u>2</u>	_____	<u>FACW</u>															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
46% = Total Cover																		
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 16Hydric 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.

Origis Energy  
Skyhawk Solar



SP-229  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>102</u> (A)</td> <td><u>402</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.9</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>102</u> (A)	<u>402</u> (B)	Prevalence Index = B/A = <u>3.9</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>2</u>	x 1 = <u>2</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>102</u> (A)	<u>402</u> (B)																			
Prevalence Index = B/A = <u>3.9</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Plantago pusilla</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Poa annua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
3. <u>Lamium amplexicaule</u>	<u>5</u>	_____	<u>UPL</u>																	
4. <u>Ranunculus sardous</u>	<u>5</u>	_____	<u>FACW</u>																	
5. <u>Stellaria media</u>	<u>5</u>	_____	<u>FACU</u>																	
6. <u>Juncus effusus</u>	<u>2</u>	_____	<u>OBL</u>																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
102% = Total Cover																				
50% of total cover: <u>51</u> 20% of total cover: <u>20</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.																				

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 24	10YR 4/4	100					Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-230  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>45</u> (A)</td> <td><u>75</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.7</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>45</u> (A)	<u>75</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>45</u> (A)	<u>75</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Gratiola neglecta</u>	<u>35</u>	<u>✓</u>	<u>OBL</u>															
2. <u>Hordeum pusillum</u>	<u>10</u>	<u>✓</u>	<u>FACU</u>															
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: <u>23</u> 20% of total cover: <u>9</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Prevalence index is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 4/2	85	10YR 5/8	15	C	PL / M	Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-231  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: No indicators are met.		

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: _____		

Remarks: (If observed, list morphological adaptations below).  
 No test is met.

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:	
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Definitions of Four Vegetation Strata:	
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Hydrophytic Vegetation Present?</b>	Yes _____ No <input checked="" type="checkbox"/>



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-232  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>✓</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>35</u> (A)</td> <td><u>35</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>35</u> (A)	<u>35</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>35</u> (A)	<u>35</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Ludwigia palustris</u>	<u>20</u>	<u>✓</u>	<u>OBL</u>															
2. <u>Juncus effusus</u>	<u>10</u>	<u>✓</u>	<u>OBL</u>															
3. <u>Gratiola neglecta</u>	<u>5</u>	_____	<u>OBL</u>															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 6/1	65	7.5YR 4/6	35	C	PL / M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|--|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 6Hydric 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.

Origis Energy  
Skyhawk Solar



SP-233  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u> Hydric Soil Present? Yes _____ No <u>✓</u> Wetland Hydrology Present? Yes _____ No <u>✓</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>✓</u>
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

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)         </div> <div style="width: 50%;"> <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b>  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No indicators are met.	

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: _____		

Remarks: (If observed, list morphological adaptations below).  
 No test is met.

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)
<b>Prevalence Index worksheet:</b>	
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
<b>Hydrophytic Vegetation Indicators:</b>	
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Definitions of Four Vegetation Strata:</b>	
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Hydrophytic Vegetation Present?</b>	Yes _____ No <input checked="" type="checkbox"/>



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-234  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>40</u> (A)</td> <td><u>45</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.1</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>40</u> (A)	<u>45</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>40</u> (A)	<u>45</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Lemna minor</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Gratiola neglecta</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>															
3. <u>Lysimachia nummularia</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>															
4. <u>Packera glabella</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>															
5. <u>Persicaria amphibia</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																		

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 6/1	80	7.5YR 4/6	20	C	PL / M	Silty clay	compact
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-235  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b> <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>490</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>490</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>490</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Poa annua</u>	<u>60</u>	<u>✓</u>	<u>FACU</u>															
2. <u>Hordeum pusillum</u>	<u>40</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Ranunculus sardous</u>	<u>25</u>	_____	<u>FACW</u>															
4. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACW</u>															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>130%</u> = Total Cover																		
50% of total cover: <u>65</u> 20% of total cover: <u>26</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ✓



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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 5/2	90	10YR 4/4	10	C	M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-236  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>3</u></td> <td>x 1 = <u>3</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>3</u> (A)</td> <td><u>3</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1</u>	Total % Cover of:	Multiply by:	OBL species <u>3</u>	x 1 = <u>3</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>3</u> (A)	<u>3</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>3</u>	x 1 = <u>3</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>3</u> (A)	<u>3</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Ludwigia palustris</u>	<u>3</u>	<u>✓</u>	<u>OBL</u>															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
3% = Total Cover																		
50% of total cover: <u>2</u> 20% of total cover: <u>1</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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).																		

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☒ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/1	85	10YR 4/6	15	C	PL / M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-237  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>430</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.9</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>430</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>10</u>	x 3 = <u>30</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>110</u> (A)	<u>430</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Hordeum pusillum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Poa annua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Ranunculus sardous</u>	<u>5</u>	_____	<u>FACW</u>															
4. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
110% = Total Cover																		
50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>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 ☒



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-238  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>40</u> (A)</td> <td><u>70</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>40</u> (A)	<u>70</u> (B)	Prevalence Index = B/A = <u>1.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>30</u>	x 1 = <u>30</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>40</u> (A)	<u>70</u> (B)																			
Prevalence Index = B/A = <u>1.8</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Lemna minor</u>	<u>30</u>	<u>✓</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Hordeum pusillum</u>	<u>10</u>	<u>✓</u>	<u>FACU</u>																	
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: <u>20</u> 20% of total cover: <u>8</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Prevalence index is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input checked="" type="checkbox"/> Other (Explain in Remarks)         |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-239  
April 16, 2020  
Obion County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>510</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>510</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>105</u>	x 4 = <u>420</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>135</u> (A)	<u>510</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Hordeum pusillum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Poa annua</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Ranunculus sardous</u>	<u>20</u>	_____	<u>FACW</u>															
4. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACW</u>															
5. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
135% = Total Cover																		
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-240  
April 16, 2020  
Obion County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>20</u> (A)</td> <td><u>30</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>20</u> (A)	<u>30</u> (B)	Prevalence Index = B/A = <u>1.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>20</u> (A)	<u>30</u> (B)																			
Prevalence Index = B/A = <u>1.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Lysimachia nummularia</u>	<u>10</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Juncus effusus</u>	<u>5</u>	<u>✓</u>	<u>OBL</u>																	
3. <u>Ludwigia palustris</u>	<u>5</u>	<u>✓</u>	<u>OBL</u>																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	
0 - 8	10YR 5/2	65	7.5YR 5/8	35	C	PL / M	Silty clay
-							
-							
-							
-							
-							
-							

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 8Hydric 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.

Origis Energy  
Skyhawk Solar



SP-241  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Ranunculus sardous</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Poa annua</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
3. <u>Hordeum pusillum</u>	<u>10</u>		<u>FACU</u>																	
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: <u>58</u> 20% of total cover: <u>23</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.																				

**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 ☒



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-242  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>72</u> (A)</td> <td><u>202</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>72</u> (A)	<u>202</u> (B)	Prevalence Index = B/A = <u>2.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>7</u>	x 1 = <u>7</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>55</u>	x 3 = <u>165</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>72</u> (A)	<u>202</u> (B)																			
Prevalence Index = B/A = <u>2.8</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex sp.*</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Ambrosia trifida</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Juncus effusus</u>	<u>7</u>		<u>OBL</u>																	
4. <u>Cardamine pensylvanica</u>	<u>5</u>		<u>FACW</u>																	
5. <u>Hordeum pusillum</u>	<u>5</u>		<u>FACU</u>																	
6. <u>Rumex crispus</u>	<u>5</u>		<u>FACW</u>																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
<u>72%</u> = Total Cover																				
50% of total cover: <u>36</u> 20% of total cover: <u>14</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-243  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>20</u> (A)</td> <td><u>65</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>20</u> (A)	<u>65</u> (B)	Prevalence Index = B/A = <u>3.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>15</u>	x 4 = <u>60</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>20</u> (A)	<u>65</u> (B)																			
Prevalence Index = B/A = <u>3.3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Poa annua</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
2. <u>Packera glabella</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-244  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Celtis laevigata</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Ulmus rubra</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Salix nigra</u>	<u>10</u>		<u>OBL</u>															
4. <u>Acer negundo</u>	<u>5</u>		<u>FACW</u>															
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
<u>75%</u> = Total Cover 50% of total cover: <u>38</u> 20% of total cover: <u>15</u>				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>220</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.3</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>220</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>35</u>	x 2 = <u>70</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>95</u> (A)	<u>220</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Acer negundo</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
<u>15%</u> = Total Cover 50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Salix nigra</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
6. _____	<u>0</u>																	
7. _____	<u>0</u>																	
8. _____	<u>0</u>																	
9. _____	<u>0</u>																	
10. _____	<u>0</u>																	
11. _____	<u>0</u>																	
12. _____	<u>0</u>																	
<u>5%</u> = Total Cover 50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	<u>0</u>																	
3. _____	<u>0</u>																	
4. _____	<u>0</u>																	
5. _____	<u>0</u>																	
_____ = Total Cover 50% of total cover: _____      20% of total cover: _____																		
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-245  
April 17, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____	<u>0</u>	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>85</u></td> <td>x 5 = <u>425</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>445</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.9</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>85</u>	x 5 = <u>425</u>	Column Totals: <u>90</u> (A)	<u>445</u> (B)	Prevalence Index = B/A = <u>4.9</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>85</u>	x 5 = <u>425</u>																			
Column Totals: <u>90</u> (A)	<u>445</u> (B)																			
Prevalence Index = B/A = <u>4.9</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Setaria faberi</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Lamium amplexicaule</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>UPL</u>																	
3. <u>Erigeron annuus</u>	<u>5</u>		<u>FACU</u>																	
4. _____	<u>0</u>																			
5. _____	<u>0</u>																			
6. _____	<u>0</u>																			
7. _____	<u>0</u>																			
8. _____	<u>0</u>																			
9. _____	<u>0</u>																			
10. _____	<u>0</u>																			
11. _____	<u>0</u>																			
12. _____	<u>0</u>																			
90% = Total Cover																				
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/4	95	7.5YR 4/6	5	C	M	Silt Loam	
8 - 16	10YR 5/6	100					Silty clay loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-246  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>340</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.8</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>340</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>90</u>	x 3 = <u>270</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>120</u> (A)	<u>340</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Carex sp.*</u>	<u>60</u>	<u>✓</u>	<u>FACW</u>															
2. <u>Andropogon gerardii</u>	<u>15</u>	_____	<u>FACW</u>															
3. <u>Juncus dudleyi</u>	<u>10</u>	_____	<u>FACW</u>															
4. <u>Juncus effusus</u>	<u>10</u>	_____	<u>OBL</u>															
5. <u>Rubus argutus</u>	<u>10</u>	_____	<u>FACW</u>															
6. <u>Liquidambar styraciflua</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
8. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>120%</u> = Total Cover																		
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-247  
April 17, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>400</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>400</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>85</u>	x 4 = <u>340</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>400</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Schizachyrium scoparium</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Poa annua</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Cerastium fontanum</u>	<u>15</u>	_____	<u>FACW</u>															
4. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>															
5. <u>Xanthium strumarium</u>	<u>5</u>	_____	<u>FACW</u>															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>7</u></td> <td>x 4 = <u>28</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>112</u> (A)</td> <td><u>258</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>7</u>	x 4 = <u>28</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>112</u> (A)	<u>258</u> (B)	Prevalence Index = B/A = <u>2.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>85</u>	x 2 = <u>170</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>7</u>	x 4 = <u>28</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>112</u> (A)	<u>258</u> (B)																			
Prevalence Index = B/A = <u>2.3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Lysimachia nummularia</u>	<u>85</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carex sp.*</u>	<u>5</u>		<u>FACW</u>																	
3. <u>Elymus virginicus</u>	<u>5</u>		<u>FACW</u>																	
4. <u>Hordeum pusillum</u>	<u>5</u>		<u>FACU</u>																	
5. <u>Ranunculus sardous</u>	<u>5</u>		<u>FACW</u>																	
6. <u>Rumex crispus</u>	<u>5</u>		<u>FACW</u>																	
7. <u>Poa pratensis</u>	<u>2</u>		<u>FACU</u>																	
8. _____	0																			
9. _____	0																			
10. _____	0																			
11. _____	0																			
12. _____	0																			
112% = Total Cover																				
50% of total cover: <u>56</u> 20% of total cover: <u>22</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-249  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>500</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>135</u> (A)	<u>500</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>85</u>	x 4 = <u>340</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>135</u> (A)	<u>500</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Poa pratensis</u>	60	✓	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Schedonorus arundinaceus</u>	40	✓	FACW															
3. <u>Plantago lanceolata</u>	20		FACU															
4. <u>Cerastium fontanum</u>	5		FACW															
5. <u>Lamium purpureum</u>	5		UPL															
6. <u>Trifolium repens</u>	5		FACU															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
135% = Total Cover																		
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-250  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>4</u></td> <td>x 4 = <u>16</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>119</u> (A)</td> <td><u>291</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.4</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>4</u>	x 4 = <u>16</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>119</u> (A)	<u>291</u> (B)	Prevalence Index = B/A = <u>2.4</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>4</u>	x 4 = <u>16</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>119</u> (A)	<u>291</u> (B)																			
Prevalence Index = B/A = <u>2.4</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex vulpinoidea</u>	60	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Carex tribuloides</u>	50	✓	FACW																	
3. <u>Carex lurida</u>	5		OBL																	
4. <u>Lonicera japonica</u>	2		FACU																	
5. <u>Poa pratensis</u>	2		FACU																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
119% = Total Cover																				
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-251  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>79</u></td> <td>x 4 = <u>316</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>124</u> (A)</td> <td><u>491</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>79</u>	x 4 = <u>316</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>124</u> (A)	<u>491</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>79</u>	x 4 = <u>316</u>																	
UPL species <u>20</u>	x 5 = <u>100</u>																	
Column Totals: <u>124</u> (A)	<u>491</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Poa pratensis</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Valerianella radiata</u>	<u>20</u>		<u>FACW</u>															
3. <u>Lamium purpureum</u>	<u>15</u>		<u>UPL</u>															
4. <u>Vicia sativa</u>	<u>10</u>		<u>FACU</u>															
5. <u>Carex albicans</u>	<u>5</u>		<u>FACW</u>															
6. <u>Lamium amplexicaule</u>	<u>5</u>		<u>UPL</u>															
7. <u>Erigeron annuus</u>	<u>2</u>		<u>FACU</u>															
8. <u>Rosa multiflora</u>	<u>2</u>		<u>FACU</u>															
9. _____	<u>0</u>		_____															
10. _____	<u>0</u>		_____															
11. _____	<u>0</u>		_____															
12. _____	<u>0</u>		_____															
124% = Total Cover																		
50% of total cover: <u>62</u> 20% of total cover: <u>25</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-252  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>45</u> (A)</td> <td><u>95</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>45</u> (A)	<u>95</u> (B)	Prevalence Index = B/A = <u>2.1</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>10</u>	x 3 = <u>30</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>45</u> (A)	<u>95</u> (B)																			
Prevalence Index = B/A = <u>2.1</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex vulpinoidea</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Andropogon gerardii</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>																	
3. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>																	
4. <u>Salix nigra</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 24	10YR 6/1	75	7.5YR 4/6	20	C	PL / M	Silt Loam	
0 - 24			10YR 2/2	5	C	M		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-253  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators are met.		

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 )		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: _____		
Herb Stratum (Plot size: 30 ft r )		Absolute % Cover	Dominant Species?	Indicator Status
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 )		Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
		_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____		

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

No test is met.

**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<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>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 ☒



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-254  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>7</u></td> <td>x 3 = <u>21</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92</u> (A)</td> <td><u>141</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>7</u>	x 3 = <u>21</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92</u> (A)	<u>141</u> (B)	Prevalence Index = B/A = <u>1.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>50</u>	x 1 = <u>50</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>7</u>	x 3 = <u>21</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>92</u> (A)	<u>141</u> (B)																			
Prevalence Index = B/A = <u>1.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: <u>30 ft r</u> )																				
1. <u>Carex lurida</u>	<u>50</u>	<u>✓</u>	<u>OBL</u>																	
2. <u>Eleocharis compressa</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Lysimachia nummularia</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Carex blanda</u>	<u>5</u>	_____	<u>FACW</u>																	
5. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>																	
6. <u>Ranunculus sardous</u>	<u>2</u>	_____	<u>FACW</u>																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>92%</u> = Total Cover																				
50% of total cover: <u>46</u> 20% of total cover: <u>18</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																				

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input checked="" type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: super-saturatedDepth (inches): 16Hydric 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.

Origis Energy  
Skyhawk Solar



SP-255  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>545</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.5</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>545</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>85</u>	x 4 = <u>340</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>155</u> (A)	<u>545</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Plantago lanceolata</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Valerianella radiata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Ambrosia artemisiifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
4. <u>Carex albicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
5. <u>Carex blanda</u>	<u>10</u>	_____	<u>FACW</u>															
6. <u>Elymus virginicus</u>	<u>10</u>	_____	<u>FACW</u>															
7. <u>Schedonorus arundinaceus</u>	<u>10</u>	_____	<u>FACW</u>															
8. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>															
9. <u>Erigeron annuus</u>	<u>5</u>	_____	<u>FACU</u>															
10. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
11. <u>Taraxacum officinale</u>	<u>5</u>	_____	<u>FACU</u>															
12. <u>Vicia sativa</u>	<u>5</u>	_____	<u>FACU</u>															
<u>155%</u> = Total Cover																		
50% of total cover: <u>78</u> 20% of total cover: <u>31</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>255</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.4</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>255</u> (B)	Prevalence Index = B/A = <u>2.4</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>105</u> (A)	<u>255</u> (B)																			
Prevalence Index = B/A = <u>2.4</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex vulpinoidea</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Carex blanda</u>	<u>15</u>	<input type="checkbox"/>	<u>FACW</u>																	
3. <u>Hordeum jubatum</u>	<u>10</u>	<input type="checkbox"/>	<u>FACW</u>																	
4. <u>Plantago lanceolata</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>																	
5. <u>Poa pratensis</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>105%</u> = Total Cover																				
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																				

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-257  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>435</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>435</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>65</u>	x 3 = <u>195</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>125</u> (A)	<u>435</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Setaria pumila</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Plantago lanceolata</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
3. <u>Galium aparine</u>	<u>20</u>	_____	<u>FACU</u>																	
4. <u>Valerianella radiata</u>	<u>15</u>	_____	<u>FACW</u>																	
5. <u>Carex blanda</u>	<u>10</u>	_____	<u>FACW</u>																	
6. <u>Erigeron annuus</u>	<u>5</u>	_____	<u>FACU</u>																	
7. <u>Stellaria media</u>	<u>5</u>	_____	<u>FACU</u>																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>125%</u> = Total Cover																				
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-258  
April 18, 2020  
Weakley County, TN



## 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 <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>450</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>450</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>85</u>	x 4 = <u>340</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>125</u> (A)	<u>450</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Poa pratensis</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Lonicera japonica</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Carex tribuloides</u>	<u>10</u>	_____	<u>FACW</u>															
4. <u>Carex vulpinoidea</u>	<u>10</u>	_____	<u>FACW</u>															
5. <u>Schedonorus arundinaceus</u>	<u>10</u>	_____	<u>FACW</u>															
6. <u>Carex blanda</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>															
8. <u>Plantago lanceolata</u>	<u>5</u>	_____	<u>FACU</u>															
9. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>125%</u> = Total Cover																		
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-259  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>150</u> (B)	Prevalence Index = B/A = <u>1.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>80</u>	x 1 = <u>80</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>150</u> (B)																			
Prevalence Index = B/A = <u>1.3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex lurida</u>	<u>80</u>	<u>✓</u>	<u>OBL</u>																	
2. <u>Carex vulpinoidea</u>	<u>15</u>	_____	<u>FACW</u>																	
3. <u>Eleocharis compressa</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Lysimachia nummularia</u>	<u>10</u>	_____	<u>FACW</u>																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>115%</u> = Total Cover																				
50% of total cover: <u>58</u> 20% of total cover: <u>23</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-260  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____			20% of total cover: _____															
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>170</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.1</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>170</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>80</u> (A)	<u>170</u> (B)																	
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____			20% of total cover: _____															
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Carex vulpinoidea</u>	60	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Carex blanda</u>	15		FACW															
3. <u>Carex lurida</u>	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: <u>40</u>			20% of total cover: <u>16</u>															
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____			20% of total cover: _____															
<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>110</u></td> <td>x 4 = <u>440</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>485</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.9</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>110</u>	x 4 = <u>440</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>485</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>110</u>	x 4 = <u>440</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>125</u> (A)	<u>485</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Poa pratensis</u>	<u>60</u>	<u>✓</u>	<u>FACU</u>															
2. <u>Ambrosia artemisiifolia</u>	<u>25</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Valerianella radiata</u>	<u>15</u>	_____	<u>FACW</u>															
4. <u>Galium aparine</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Erigeron annuus</u>	<u>5</u>	_____	<u>FACU</u>															
6. <u>Plantago lanceolata</u>	<u>5</u>	_____	<u>FACU</u>															
7. <u>Vicia sativa</u>	<u>5</u>	_____	<u>FACU</u>															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>125%</u> = Total Cover																		
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ✓



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-262  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>245</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.2</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>245</u> (B)	Prevalence Index = B/A = <u>2.2</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>245</u> (B)																			
Prevalence Index = B/A = <u>2.2</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Eleocharis compressa</u>	<u>50</u>	<u>✓</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Lysimachia nummularia</u>	<u>30</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Carex sp.*</u>	<u>15</u>	_____	<u>FACW</u>																	
4. <u>Carex vulpinoidea</u>	<u>10</u>	_____	<u>FACW</u>																	
5. <u>Hordeum pusillum</u>	<u>5</u>	_____	<u>FACU</u>																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
110% = Total Cover																				
50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
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.																				

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 6/1	65	7.5YR 5/6	35	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-263  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>500</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>500</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>135</u> (A)	<u>500</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Poa pratensis</u>	<u>50</u>	<u>✓</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Valerianella amarella</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Valerianella radiata</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>															
4. <u>Ambrosia artemisiifolia</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Plantago lanceolata</u>	<u>10</u>	_____	<u>FACU</u>															
6. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACW</u>															
8. <u>Erigeron annuus</u>	<u>5</u>	_____	<u>FACU</u>															
9. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>															
10. <u>Schedonorus arundinaceus</u>	<u>5</u>	_____	<u>FACW</u>															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>135%</u> = Total Cover																		
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.          <b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-264  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>19</u></td> <td>x 4 = <u>76</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>119</u> (A)</td> <td><u>341</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.9</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>70</u>	x 3 = <u>210</u>	FACU species <u>19</u>	x 4 = <u>76</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>119</u> (A)	<u>341</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>70</u>	x 3 = <u>210</u>																	
FACU species <u>19</u>	x 4 = <u>76</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>119</u> (A)	<u>341</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Carex tribuloides</u>	45	✓	FACW															
2. <u>Carex vulpinoidea</u>	20	✓	FACW															
3. <u>Hordeum pusillum</u>	15	_____	FACU															
4. <u>Elymus virginicus</u>	10	_____	FACW															
5. <u>Valerianella radiata</u>	10	_____	FACW															
6. <u>Carex lurida</u>	5	_____	OBL															
7. <u>Juncus dudleyi</u>	5	_____	FACW															
8. <u>Rumex crispus</u>	5	_____	FACW															
9. <u>Erigeron annuus</u>	2	_____	FACU															
10. <u>Solidago altissima</u>	2	_____	FACU															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
119% = Total Cover																		
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-265  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>107</u> (A)</td> <td><u>406</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>107</u> (A)	<u>406</u> (B)	Prevalence Index = B/A = <u>3.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>22</u>	x 3 = <u>66</u>																			
FACU species <u>85</u>	x 4 = <u>340</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>107</u> (A)	<u>406</u> (B)																			
Prevalence Index = B/A = <u>3.8</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Poa annua</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Cerastium fontanum</u>	<u>20</u>		<u>FACW</u>																	
3. <u>Hordeum pusillum</u>	<u>15</u>		<u>FACU</u>																	
4. <u>Poa pratensis</u>	<u>10</u>		<u>FACU</u>																	
5. <u>Ranunculus sardous</u>	<u>2</u>		<u>FACW</u>																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
107% = Total Cover																				
50% of total cover: <u>54</u> 20% of total cover: <u>21</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-266  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>35</u> (A)</td> <td><u>70</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>35</u> (A)	<u>70</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>35</u> (A)	<u>70</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Juncus effusus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Carex sp.*</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Elymus virginicus</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
4. <u>Lysimachia nummularia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
5. <u>Rumex crispus</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-267  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>260</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2</u>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>260</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>55</u>	x 1 = <u>55</u>																	
FACW species <u>20</u>	x 2 = <u>40</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>260</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Juncus effusus</u>	<u>50</u>	<u>✓</u>	<u>OBL</u>															
2. <u>Carex tribuloides</u>	<u>30</u>	<u>✓</u>	<u>FACW</u>															
3. <u>Carex vulpinoidea</u>	<u>15</u>	_____	<u>FACW</u>															
4. <u>Dichanthelium acuminatum</u>	<u>15</u>	_____	<u>FACW</u>															
5. <u>Carex blanda</u>	<u>10</u>	_____	<u>FACW</u>															
6. <u>Carex lurida</u>	<u>5</u>	_____	<u>OBL</u>															
7. <u>Juncus dudleyi</u>	<u>5</u>	_____	<u>FACW</u>															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
<u>130%</u> = Total Cover																		
50% of total cover: <u>65</u> 20% of total cover: <u>26</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-268  
April 18, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0			<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)														
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
7. _____	0																	
8. _____	0																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>495</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.3</u>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>495</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>20</u>	x 1 = <u>20</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>95</u>	x 4 = <u>380</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>150</u> (A)	<u>495</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Lonicera japonica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
7. _____	0																	
8. _____	0																	
_____ = Total Cover																		
50% of total cover: <u>13</u> 20% of total cover: <u>5</u>																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Rosa multiflora</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. <u>Carex tribuloides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Juncus effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
4. <u>Bassia scoparia</u>	<u>15</u>		<u>FACU</u>															
5. <u>Lonicera japonica</u>	<u>15</u>		<u>FACU</u>															
6. <u>Dichanthelium clandestinum</u>	<u>10</u>		<u>FACW</u>															
7. <u>Andropogon gerardii</u>	<u>5</u>		<u>FACW</u>															
8. _____	0																	
9. _____	0																	
10. _____	0																	
11. _____	0																	
12. _____	0																	
_____ = Total Cover																		
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0			<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/1	90	7.5YR 5/8	10	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-269  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																						
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																					
2. _____	0	_____	_____																						
3. _____	0	_____	_____																						
4. _____	0	_____	_____																						
5. _____	0	_____	_____																						
6. _____	0	_____	_____																						
7. _____	0	_____	_____																						
8. _____	0	_____	_____																						
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;">Multiply by:</th> <th style="width: 40%;"></th> </tr> <tr> <td>OBL species <u>45</u></td> <td>x 1 =</td> <td><u>45</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 =</td> <td><u>80</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 =</td> <td><u>165</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 =</td> <td><u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td></td> <td><u>410</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.4</u>	Total % Cover of:	Multiply by:		OBL species <u>45</u>	x 1 =	<u>45</u>	FACW species <u>40</u>	x 2 =	<u>80</u>	FAC species <u>55</u>	x 3 =	<u>165</u>	FACU species <u>30</u>	x 4 =	<u>120</u>	UPL species <u>0</u>	x 5 =	<u>0</u>	Column Totals: <u>170</u> (A)		<u>410</u> (B)
Total % Cover of:	Multiply by:																								
OBL species <u>45</u>	x 1 =	<u>45</u>																							
FACW species <u>40</u>	x 2 =	<u>80</u>																							
FAC species <u>55</u>	x 3 =	<u>165</u>																							
FACU species <u>30</u>	x 4 =	<u>120</u>																							
UPL species <u>0</u>	x 5 =	<u>0</u>																							
Column Totals: <u>170</u> (A)		<u>410</u> (B)																							
50% of total cover: _____ 20% of total cover: _____																									
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																									
1. <u>Rubus argutus</u>	10	✓	FACW																						
2. _____	0	_____	_____																						
3. _____	0	_____	_____																						
4. _____	0	_____	_____																						
5. _____	0	_____	_____																						
6. _____	0	_____	_____																						
7. _____	0	_____	_____																						
8. _____	0	_____	_____																						
_____ = Total Cover																									
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																									
Herb Stratum (Plot size: <u>30 ft r</u> )																									
1. <u>Carex tribuloides</u>	40	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																					
2. <u>Eleocharis acicularis</u>	40	✓	OBL																						
3. <u>Lonicera japonica</u>	30	_____	FACU																						
4. <u>Carex vulpinoidea</u>	20	_____	FACW																						
5. <u>Dichanthelium clandestinum</u>	20	_____	FACW																						
6. <u>Juncus effusus</u>	5	_____	OBL																						
7. <u>Liquidambar styraciflua</u>	5	_____	FACW																						
8. _____	0	_____	_____																						
9. _____	0	_____	_____																						
10. _____	0	_____	_____																						
11. _____	0	_____	_____																						
12. _____	0	_____	_____																						
_____ = Total Cover																									
50% of total cover: <u>80</u> 20% of total cover: <u>32</u>																									
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																									
1. _____	0	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																					
2. _____	0	_____	_____																						
3. _____	0	_____	_____																						
4. _____	0	_____	_____																						
5. _____	0	_____	_____																						
_____ = Total Cover																									
50% of total cover: _____ 20% of total cover: _____																									
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																					



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-270  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>117</u> (A)</td> <td><u>297</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>117</u> (A)	<u>297</u> (B)	Prevalence Index = B/A = <u>2.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>7</u>	x 1 = <u>7</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>117</u> (A)	<u>297</u> (B)																			
Prevalence Index = B/A = <u>2.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: <u>30 ft r</u> )																				
1. <u>Carex vulpinoidea</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Carex tribuloides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Carex blanda</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Hordeum jubatum</u>	<u>10</u>	_____	<u>FACW</u>																	
5. <u>Lonicera japonica</u>	<u>10</u>	_____	<u>FACU</u>																	
6. <u>Arundo donax</u>	<u>5</u>	_____	<u>FACW</u>																	
7. <u>Carex lurida</u>	<u>5</u>	_____	<u>OBL</u>																	
8. <u>Lysimachia nummularia</u>	<u>5</u>	_____	<u>FACW</u>																	
9. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>																	
10. <u>Lemna minor</u>	<u>2</u>	_____	<u>OBL</u>																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
<u>117%</u> = Total Cover																				
50% of total cover: <u>59</u> 20% of total cover: <u>23</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below).																				
Dominance test is met.																				
10% cover of sphagnum.																				
Photograph C-1.																				

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-271  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>470</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>125</u> (A)	<u>470</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>65</u>	x 4 = <u>260</u>																	
UPL species <u>15</u>	x 5 = <u>75</u>																	
Column Totals: <u>125</u> (A)	<u>470</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Valerianella radiata</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Valerianella amarella</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Silphium laciniatum</u>	<u>15</u>	_____	<u>UPL</u>															
4. <u>Trifolium repens</u>	<u>15</u>	_____	<u>FACU</u>															
5. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
6. <u>Rosa multiflora</u>	<u>5</u>	_____	<u>FACU</u>															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
125% = Total Cover																		
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 4/1	100					Silty clay loam	
2 - 20	10YR 4/6	100					Silty clay loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-272  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>405</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>405</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>85</u>	x 2 = <u>170</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>25</u>	x 4 = <u>100</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>155</u> (A)	<u>405</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Eleocharis tenuis</u>	<u>50</u>	<u>✓</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Carex vulpinoidea</u>	<u>30</u>	<u>✓</u>	<u>FACW</u>															
3. <u>Carex tribuloides</u>	<u>25</u>	_____	<u>FACW</u>															
4. <u>Lonicera japonica</u>	<u>20</u>	_____	<u>FACU</u>															
5. <u>Arundo donax</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Bassia scoparia</u>	<u>5</u>	_____	<u>FACU</u>															
7. <u>Cyperus esculentus</u>	<u>5</u>	_____	<u>FACW</u>															
8. <u>Dichanthelium clandestinum</u>	<u>5</u>	_____	<u>FACW</u>															
9. <u>Rubus argutus</u>	<u>5</u>	_____	<u>FACW</u>															
10. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
155% = Total Cover																		
50% of total cover: <u>78</u> 20% of total cover: <u>31</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-273  
April 18, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>125</u></td> <td>x 3 = <u>375</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>425</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.9</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>125</u>	x 3 = <u>375</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>425</u> (B)	Prevalence Index = B/A = <u>2.9</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>125</u>	x 3 = <u>375</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>145</u> (A)	<u>425</u> (B)																			
Prevalence Index = B/A = <u>2.9</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Carex tribuloides</u>	<u>60</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Setaria pumila</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Arundo donax</u>	<u>20</u>	_____	<u>FACW</u>																	
4. <u>Carex lurida</u>	<u>10</u>	_____	<u>OBL</u>																	
5. <u>Cyperus esculentus</u>	<u>5</u>	_____	<u>FACW</u>																	
6. <u>Rosa multiflora</u>	<u>5</u>	_____	<u>FACU</u>																	
7. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>145%</u> = Total Cover																				
50% of total cover: <u>73</u> 20% of total cover: <u>29</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.																				

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-274  
April 19, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>160</u> (A)</td> <td><u>555</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>160</u> (A)	<u>555</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>90</u>	x 3 = <u>270</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>160</u> (A)	<u>555</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Valerianella radiata</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Solidago altissima</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																	
3. <u>Toxicodendron radicans</u>	<u>30</u>	_____	<u>FACW</u>																	
4. <u>Setaria faberi</u>	<u>10</u>	_____	<u>UPL</u>																	
5. <u>Arundo donax</u>	<u>5</u>	_____	<u>FACW</u>																	
6. <u>Carex tribuloides</u>	<u>5</u>	_____	<u>FACW</u>																	
7. <u>Carex blanda</u>	<u>5</u>	_____	<u>FACW</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
8. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>																	
9. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>																	
10. <u>Geranium carolinianum</u>	<u>5</u>	_____	<u>UPL</u>																	
11. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>																	
12. <u>Trifolium repens</u>	<u>5</u>	_____	<u>FACU</u>																	
160% = Total Cover																				
50% of total cover: <u>80</u> 20% of total cover: <u>32</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																
50% of total cover: _____ 20% of total cover: _____																				
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-275  
April 19, 2020  
Weakley County, TN



# 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 <u>✓</u> Hydric Soil Present? Yes _____ No <u>✓</u> Wetland Hydrology Present? Yes <u>✓</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>✓</u>
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

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Water-Stained Leaves (B9)         </div> <div style="width: 50%;"> <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b>  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>455</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>130</u> (A)	<u>455</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>130</u> (A)	<u>455</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Lonicera japonica</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carex tribuloides</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Andropogon gerardii</u>	<u>10</u>	_____	<u>FACW</u>																	
4. <u>Rosa multiflora</u>	<u>10</u>	_____	<u>FACU</u>																	
5. <u>Valerianella radiata</u>	<u>10</u>	_____	<u>FACW</u>																	
6. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>																	
7. <u>Dichanthelium acuminatum</u>	<u>5</u>	_____	<u>FACW</u>																	
8. <u>Geranium carolinianum</u>	<u>5</u>	_____	<u>UPL</u>																	
9. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>130%</u> = Total Cover																				
50% of total cover: <u>65</u> 20% of total cover: <u>26</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-276  
April 19, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>315</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.7</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>315</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>115</u> (A)	<u>315</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																		
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: _____																		
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. <u>Carex tribuloides</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Carex vulpinoidea</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Carex lurida</u>	<u>10</u>	_____	<u>OBL</u>															
4. <u>Rosa multiflora</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Andropogon gerardii</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Panicum virgatum</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>															
8. <u>Toxicodendron radicans</u>	<u>5</u>	_____	<u>FACW</u>															
9. <u>Valerianella radiata</u>	<u>5</u>	_____	<u>FACW</u>															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
<u>115%</u> = Total Cover																		
50% of total cover: <u>58</u> 20% of total cover: <u>23</u>																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). Dominance test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☒ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-277  
April 19, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>12</u></td> <td>x 4 = <u>48</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>298</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>12</u>	x 4 = <u>48</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>127</u> (A)	<u>298</u> (B)	Prevalence Index = B/A = <u>2.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>75</u>	x 2 = <u>150</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>12</u>	x 4 = <u>48</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>127</u> (A)	<u>298</u> (B)																			
Prevalence Index = B/A = <u>2.3</u>																				
50% of total cover: _____ 20% of total cover: _____																				
_____ = Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
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: _____																				
_____ = Total Cover																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Carex vulpinoidea</u>	60	✓	FACW																	
2. <u>Setaria pumila</u>	20	✓	FACW																	
3. <u>Dichanthelium clandestinum</u>	15	_____	FACW																	
4. <u>Carex lurida</u>	10	_____	OBL																	
5. <u>Lonicera japonica</u>	5	_____	FACU																	
6. <u>Rosa multiflora</u>	5	_____	FACU																	
7. <u>Toxicodendron radicans</u>	5	_____	FACW																	
8. <u>Valerianella radiata</u>	5	_____	FACW																	
9. <u>Solidago altissima</u>	2	_____	FACU																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
127% = Total Cover																				
50% of total cover: <u>64</u> 20% of total cover: <u>25</u>																				
_____ = Total Cover																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
_____ = Total Cover																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-278  
April 19, 2020  
Weakley County, TN



# 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 <u>✓</u> Hydric Soil Present? Yes _____ No <u>✓</u> Wetland Hydrology Present? Yes _____ No <u>✓</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>✓</u>
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

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b> <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>37</u></td> <td>x 4 = <u>148</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>132</u> (A)</td> <td><u>453</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>37</u>	x 4 = <u>148</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>132</u> (A)	<u>453</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>85</u>	x 3 = <u>255</u>																	
FACU species <u>37</u>	x 4 = <u>148</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>132</u> (A)	<u>453</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Dichanthelium acuminatum</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Solidago altissima</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Cerastium fontanum</u>	<u>10</u>	_____	<u>FACW</u>															
4. <u>Elymus virginicus</u>	<u>10</u>	_____	<u>FACW</u>															
5. <u>Trifolium repens</u>	<u>10</u>	_____	<u>FACU</u>															
6. <u>Valerianella radiata</u>	<u>10</u>	_____	<u>FACW</u>															
7. <u>Carex blanda</u>	<u>5</u>	_____	<u>FACW</u>															
8. <u>Geranium carolinianum</u>	<u>5</u>	_____	<u>UPL</u>															
9. <u>Rosa multiflora</u>	<u>5</u>	_____	<u>FACU</u>															
10. <u>Silphium laciniatum</u>	<u>5</u>	_____	<u>UPL</u>															
11. <u>Vicia sativa</u>	<u>2</u>	_____	<u>FACU</u>															
12. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>66</u> 20% of total cover: <u>26</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 4/4	100					Silt Loam	
6 - 16	10YR 5/6	100					Silt Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-279  
April 19, 2020  
Weakley County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>✓</u> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																								
2. _____	0	_____	_____																									
3. _____	0	_____	_____																									
4. _____	0	_____	_____																									
5. _____	0	_____	_____																									
6. _____	0	_____	_____																									
7. _____	0	_____	_____																									
8. _____	0	_____	_____																									
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;">Multiply by:</th> <th style="width: 40%;"></th> </tr> <tr> <td>OBL species <u>40</u></td> <td>x 1 =</td> <td><u>40</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 =</td> <td><u>0</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 =</td> <td><u>120</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 =</td> <td><u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td></td> <td><u>180</u> (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u>2.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:		OBL species <u>40</u>	x 1 =	<u>40</u>	FACW species <u>0</u>	x 2 =	<u>0</u>	FAC species <u>40</u>	x 3 =	<u>120</u>	FACU species <u>5</u>	x 4 =	<u>20</u>	UPL species <u>0</u>	x 5 =	<u>0</u>	Column Totals: <u>85</u> (A)		<u>180</u> (B)	Prevalence Index = B/A = <u>2.1</u>		
Total % Cover of:	Multiply by:																											
OBL species <u>40</u>	x 1 =	<u>40</u>																										
FACW species <u>0</u>	x 2 =	<u>0</u>																										
FAC species <u>40</u>	x 3 =	<u>120</u>																										
FACU species <u>5</u>	x 4 =	<u>20</u>																										
UPL species <u>0</u>	x 5 =	<u>0</u>																										
Column Totals: <u>85</u> (A)		<u>180</u> (B)																										
Prevalence Index = B/A = <u>2.1</u>																												
50% of total cover: _____ 20% of total cover: _____																												
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																												
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: <u>30 ft r</u> )																												
1. <u>Juncus effusus</u>	<u>40</u>	<u>✓</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. <u>Carex sp.*</u>	<u>25</u>	<u>✓</u>	<u>FACW</u>																									
3. <u>Rubus argutus</u>	<u>10</u>	_____	<u>FACW</u>																									
4. <u>Elymus virginicus</u>	<u>5</u>	_____	<u>FACW</u>																									
5. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>																									
6. _____	0	_____	_____																									
7. _____	0	_____	_____																									
8. _____	0	_____	_____																									
9. _____	0	_____	_____																									
10. _____	0	_____	_____																									
11. _____	0	_____	_____																									
12. _____	0	_____	_____																									
85% = Total Cover																												
50% of total cover: <u>43</u> 20% of total cover: <u>17</u>																												
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																												
1. _____	0	_____	_____																									
2. _____	0	_____	_____																									
3. _____	0	_____	_____																									
4. _____	0	_____	_____																									
5. _____	0	_____	_____																									
_____ = Total Cover																												
50% of total cover: _____ 20% of total cover: _____																												
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																								
*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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-280  
April 20, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0			<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)														
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
7. _____	0																	
8. _____	0																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>605</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>165</u> (A)	<u>605</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>85</u>	x 3 = <u>255</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>30</u>	x 5 = <u>150</u>																	
Column Totals: <u>165</u> (A)	<u>605</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Rubus argutus</u>	40	✓	FACW															
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
7. _____	0																	
8. _____	0																	
40% = Total Cover																		
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Geranium carolinianum</u>	30	✓	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Lonicera japonica</u>	25	✓	FACU															
3. <u>Rubus argutus</u>	20	✓	FACW															
4. <u>Verbascum thapsus</u>	20	✓	FACU															
5. <u>Carex sp.*</u>	15		FACW															
6. <u>Toxicodendron radicans</u>	10		FACW															
7. <u>Solidago altissima</u>	5		FACU															
8. _____	0																	
9. _____	0																	
10. _____	0																	
11. _____	0																	
12. _____	0																	
125% = Total Cover																		
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0			<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 3/4	100					Silt Loam	
3 - 18	10YR 4/6	100					Silty clay loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-281  
April 20, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>525</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>140</u> (A)	<u>525</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>45</u>	x 4 = <u>180</u>																	
UPL species <u>30</u>	x 5 = <u>150</u>																	
Column Totals: <u>140</u> (A)	<u>525</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Valerianella radiata</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Lamium purpureum</u>	<u>25</u>	<u>✓</u>	<u>UPL</u>															
3. <u>Cerastium fontanum</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>															
4. <u>Lonicera japonica</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
5. <u>Solidago altissima</u>	<u>15</u>	_____	<u>FACU</u>															
6. <u>Arundo donax</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Galium aparine</u>	<u>5</u>	_____	<u>FACU</u>															
8. <u>Geranium carolinianum</u>	<u>5</u>	_____	<u>UPL</u>															
9. <u>Verbascum thapsus</u>	<u>5</u>	_____	<u>FACU</u>															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>140%</u> = Total Cover																		
50% of total cover: <u>70</u> 20% of total cover: <u>28</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-282  
April 20, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>185</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.1</u>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>185</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>50</u>	x 1 = <u>50</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>90</u> (A)	<u>185</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Juncus effusus</u>	<u>40</u>	<u>✓</u>	<u>OBL</u>															
2. <u>Lonicera japonica</u>	<u>15</u>	<u>✓</u>	<u>FACU</u>															
3. <u>Dichanthelium acuminatum</u>	<u>10</u>	_____	<u>FACW</u>															
4. <u>Ludwigia alternifolia</u>	<u>10</u>	_____	<u>OBL</u>															
5. <u>Carex sp.*</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Elymus virginicus</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Ulmus rubra</u>	<u>5</u>	_____	<u>FACW</u>															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
90% = Total Cover																		
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☒ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-283  
April 20, 2020  
Weakley County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>295</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.8</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>295</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>295</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Carex tribuloides</u>	<u>35</u>	<u>✓</u>	<u>FACW</u>															
2. <u>Eleocharis tenuis</u>	<u>25</u>	<u>✓</u>	<u>FACW</u>															
3. <u>Dichanthelium acuminatum</u>	<u>15</u>	_____	<u>FACW</u>															
4. <u>Andropogon gerardii</u>	<u>5</u>	_____	<u>FACW</u>															
5. <u>Arundo donax</u>	<u>5</u>	_____	<u>FACW</u>															
6. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>															
7. <u>Lonicera japonica</u>	<u>5</u>	_____	<u>FACU</u>															
8. <u>Setaria pumila</u>	<u>5</u>	_____	<u>FACW</u>															
9. <u>Ulmus alata</u>	<u>5</u>	_____	<u>FACU</u>															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
<u>105%</u> = Total Cover																		
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-284  
April 20, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>345</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>345</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>35</u>	x 3 = <u>105</u>																	
FACU species <u>60</u>	x 4 = <u>240</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>95</u> (A)	<u>345</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Ulmus alata</u>	20	✓	FACU															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
20% = Total Cover																		
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Lonicera japonica</u>	40	✓	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Arundo donax</u>	15	✓	FACW															
3. <u>Rumex crispus</u>	10	_____	FACW															
4. <u>Rubus argutus</u>	5	_____	FACW															
5. <u>Toxicodendron radicans</u>	5	_____	FACW															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
75% = Total Cover																		
50% of total cover: <u>38</u> 20% of total cover: <u>15</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>														



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-285  
April 20, 2020  
Weakley County, TN



# 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 <u>✓</u> No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present? Yes <u>✓</u> No _____	
Wetland Hydrology Present? Yes <u>✓</u> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <u>✓</u> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>✓</u> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>320</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.7</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>320</u> (B)	Prevalence Index = B/A = <u>2.7</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u> (A)	<u>320</u> (B)																			
Prevalence Index = B/A = <u>2.7</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Eleocharis tenuis</u>	40	✓	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Carex sp.*</u>	30	✓	FACW																	
3. <u>Dichanthelium acuminatum</u>	20		FACW																	
4. <u>Carex tribuloides</u>	15		FACW																	
5. <u>Liquidambar styraciflua</u>	5		FACW																	
6. <u>Rubus argutus</u>	5		FACW																	
7. <u>Valerianella radiata</u>	5		FACW																	
8. _____	0																			
9. _____	0																			
10. _____	0																			
11. _____	0																			
12. _____	0																			
120% = Total Cover																				
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
*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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	2.5Y 4/2	100					Muck	
3 - 14	10YR 5/2	65	10YR 5/8	35	C	PL / M	Silt	w/ rocks
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-286  
April 20, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators are met.		

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 )		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: _____		
Herb Stratum (Plot size: 30 ft r )		Absolute % Cover	Dominant Species?	Indicator Status
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 )		Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
		_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____		

Remarks: (If observed, list morphological adaptations below).  
 No test is met.

**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<sup>1</sup>

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>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 ☒



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/6	100					Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br>(MLRA 153B)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|

<sup>3</sup>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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>105</u></td> <td>x 2 = <u>210</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>280</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.2</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>105</u>	x 2 = <u>210</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>280</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>105</u>	x 2 = <u>210</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>280</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Juncus dudleyi</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Lysimachia nummularia</u>	<u>20</u>	<input type="checkbox"/>	<u>FACW</u>															
3. <u>Carex sp.*</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>															
4. <u>Carex vulpinoidea</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>															
5. <u>Juncus effusus</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>															
6. <u>Ranunculus sardous</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>															
7. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>															
8. <u>Solidago altissima</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>															
9. _____	<u>0</u>	<input type="checkbox"/>	_____															
10. _____	<u>0</u>	<input type="checkbox"/>	_____															
11. _____	<u>0</u>	<input type="checkbox"/>	_____															
12. _____	<u>0</u>	<input type="checkbox"/>	_____															
<u>130%</u> = Total Cover																		
50% of total cover: <u>65</u> 20% of total cover: <u>26</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
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.																		

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b><br><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b><br><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b><br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b><br><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b><br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b> | <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b><br><input type="checkbox"/> Loamy Mucky Mineral (F1) <b>(LRR O)</b><br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) <b>(LRR U)</b><br><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b><br><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b><br><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b><br><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b> | <input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b><br><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b><br><input type="checkbox"/> Reduced Vertic (F18) <b>(outside MLRA 150A,B)</b><br><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b><br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-289  
April 21, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>365</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.7</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>365</u> (B)	Prevalence Index = B/A = <u>2.7</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>135</u> (A)	<u>365</u> (B)																			
Prevalence Index = B/A = <u>2.7</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
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: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Ranunculus sardous</u>	<u>75</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Juncus dudleyi</u>	<u>40</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Rumex crispus</u>	<u>20</u>	_____	<u>FACW</u>																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
6. _____	0	_____	_____																	
7. _____	0	_____	_____																	
8. _____	0	_____	_____																	
9. _____	0	_____	_____																	
10. _____	0	_____	_____																	
11. _____	0	_____	_____																	
12. _____	0	_____	_____																	
<u>135%</u> = Total Cover																				
50% of total cover: <u>68</u> 20% of total cover: <u>27</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	0	_____	_____																	
2. _____	0	_____	_____																	
3. _____	0	_____	_____																	
4. _____	0	_____	_____																	
5. _____	0	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Dominance test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____																



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR O)                        |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR S)                       |
| <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)    |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| <input type="checkbox"/> Anomalous Bright Loamy Soils (F20)            |
| <b>(MLRA 153B)</b>   |
| <input type="checkbox"/> Red Parent Material (TF2)                     |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)              |
| <input type="checkbox"/> Other (Explain in Remarks)                    |

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-290  
April 21, 2020  
Weakley County, TN



# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>435</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>435</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>120</u> (A)	<u>435</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>30 ft r</u> )																		
1. <u>Ranunculus sardous</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. <u>Solidago altissima</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Trifolium repens</u>	<u>20</u>	_____	<u>FACU</u>															
4. <u>Hordeum pusillum</u>	<u>15</u>	_____	<u>FACU</u>															
5. <u>Rumex crispus</u>	<u>5</u>	_____	<u>FACW</u>															
6. _____	<u>0</u>	_____	_____															
7. _____	<u>0</u>	_____	_____															
8. _____	<u>0</u>	_____	_____															
9. _____	<u>0</u>	_____	_____															
10. _____	<u>0</u>	_____	_____															
11. _____	<u>0</u>	_____	_____															
12. _____	<u>0</u>	_____	_____															
120% = Total Cover																		
50% of total cover: <u>60</u> 20% of total cover: <u>24</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	<u>0</u>	_____	_____															
2. _____	<u>0</u>	_____	_____															
3. _____	<u>0</u>	_____	_____															
4. _____	<u>0</u>	_____	_____															
5. _____	<u>0</u>	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ☒

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/1	50	10YR 4/6	10	C	M	Silt Loam	mixed matrix
0 - 20	10YR 5/3	40						
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-291  
April 21, 2020  
Weakley County, TN

# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>180</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>180</u> (B)	Prevalence Index = B/A = <u>2</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>180</u> (B)																			
Prevalence Index = B/A = <u>2</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>30 ft r</u> )																				
1. <u>Eleocharis tenuis</u>	<u>60</u>	<u>✓</u>	<u>FACW</u>																	
2. <u>Juncus dudleyi</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>																	
3. <u>Lysimachia nummularia</u>	<u>10</u>	_____	<u>FACW</u>																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
90% = Total Cover																				
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>																				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.																				

**Hydrophytic Vegetation Indicators:**  
☒ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 \_\_\_\_\_



## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-292  
April 21, 2020  
Weakley County, TN

# 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 <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present? Yes _____ No <u>✓</u>	
Wetland Hydrology Present? Yes _____ No <u>✓</u>	
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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>✓</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>✓</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>✓</u> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____ No <u>✓</u>
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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	0	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>390</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>390</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>80</u>	x 4 = <u>320</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>390</u> (B)																	
50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )																		
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: <u>30 ft r</u> )																		
1. <u>Trifolium repens</u>	<u>50</u>	<u>✓</u>	<u>FACU</u>															
2. <u>Ranunculus sardous</u>	<u>20</u>	<u>✓</u>	<u>FACW</u>															
3. <u>Solidago altissima</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>															
4. <u>Dactylis glomerata</u>	<u>10</u>	_____	<u>FACU</u>															
5. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>FACW</u>															
6. _____	0	_____	_____															
7. _____	0	_____	_____															
8. _____	0	_____	_____															
9. _____	0	_____	_____															
10. _____	0	_____	_____															
11. _____	0	_____	_____															
12. _____	0	_____	_____															
105% = Total Cover																		
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	0	_____	_____															
2. _____	0	_____	_____															
3. _____	0	_____	_____															
4. _____	0	_____	_____															
5. _____	0	_____	_____															
_____ = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below). No test is met.																		

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**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 ✓

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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						
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>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<sup>3</sup>:**

- ☐ 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)

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-293  
April 21, 2020  
Weakley County, TN



# 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> 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: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	<u>0</u>	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>210</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>2</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>65</u>	x 2 = <u>130</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>105</u> (A)	<u>210</u> (B)																			
Prevalence Index = B/A = <u>2</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Sapling/Shrub Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Herb Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. <u>Juncus dudleyi</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
2. <u>Ludwigia palustris</u>	<u>20</u>	<input type="checkbox"/>	<u>OBL</u>																	
3. <u>Ranunculus sardous</u>	<u>15</u>	<input type="checkbox"/>	<u>FACW</u>																	
4. <u>Eleocharis tenuis</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>																	
5. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>																	
6. _____	<u>0</u>	_____	_____																	
7. _____	<u>0</u>	_____	_____																	
8. _____	<u>0</u>	_____	_____																	
9. _____	<u>0</u>	_____	_____																	
10. _____	<u>0</u>	_____	_____																	
11. _____	<u>0</u>	_____	_____																	
12. _____	<u>0</u>	_____	_____																	
<u>105%</u> = Total Cover																				
50% of total cover: <u>53</u> 20% of total cover: <u>21</u>																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																				
1. _____	<u>0</u>	_____	_____																	
2. _____	<u>0</u>	_____	_____																	
3. _____	<u>0</u>	_____	_____																	
4. _____	<u>0</u>	_____	_____																	
5. _____	<u>0</u>	_____	_____																	
_____ = Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (If observed, list morphological adaptations below). Rapid test is met.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																

## 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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		
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5)<br><input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)<br><input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)<br><input type="checkbox"/> Muck Presence (A8) (LRR U)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)<br><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4)<br><input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)<br><input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)<br><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input checked="" type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Marl (F10) (LRR U)<br><input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)<br><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)<br><input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)<br><input type="checkbox"/> Delta Ochric (F17) (MLRA 151)<br><input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | <input type="checkbox"/> 1 cm Muck (A9) (LRR O)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR S)<br><input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)<br><input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)<br><input type="checkbox"/> Anomalous Bright Loamy Soils (F20)<br><b>(MLRA 153B)</b><br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Very Shallow Dark Surface (TF12)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|

<sup>3</sup>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.

Origis Energy  
Skyhawk Solar



SP-294  
April 21, 2020  
Weakley County, TN

## **APPENDIX C - HYDROLOGIC DETERMINATION FIELD DATA SHEETS**

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 3/4/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-117		
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 115)		
HUC (12 digit): 080102020208	Lat/Long: 36°23'50.75"N, 88°58'46.91"W	
Previous Rainfall (7-days) : 2.45 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Routon - Bonn silt loam complex and Routon silt loam, 0-2 percent slope		Source: NRCS
Surrounding Land Use : agriculture		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 5.5

#### Justification / Notes :

Watercourse reach is approximately 1,130 feet from lat/long coordinates. It is man made with some vegetation growing within channel.

Recent heavy rain on the morning of survey.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 1.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 2 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 5.5

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

**Notes :** Heavy rain event the morning of survey.

No leaf litter present; however, drainage is in the middle of an actively cultivated agricultural field. There are no trees nearby.

Photo to right taken facing NW.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Little Cypress Creek		Date/Time: 3/02/2020
Assessors/Affiliation:		Project ID :
Site Name/Description: S-131		Skyhawk Solar Project (Transmission upgrades)
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 99)		
HUC (12 digit): 080102020207		Lat/Long: 36°22'55.41"N, 88°57'50.90"W
Previous Rainfall (7-days) : 1.95 inches		
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 19,111 acres	County: Obion	
Soil Type(s) / Geology : Routon - Bonn silt loam complex		Source: NRCS
Surrounding Land Use : agriculture		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		✓ WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination =** WWC

**Secondary Indicator Score (if applicable) =** 4.5

#### Justification / Notes :

Watercourse reach is approximately 2,580 feet from lat/long coordinates. It is manmade with vegetation growing through the center of it.

Recent heavy rain shows obvious scour along with some bent vegetation stalks.

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## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 1 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 2.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 1 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 4.5

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Precipitation within less than 48 hours. No leaf litter in channel, however, no trees nearby. Vegetation growing throughout channel.

Photo taken facing upstream.





# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary North Fork Obion River		Date/Time: 4/14/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-201		
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 155)		
HUC (12 digit): 080102020202	Lat/Long:	
Previous Rainfall (7-days) : 1.9 inches	36°24'38.55"N, 89° 2'2.22"W	
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 10,731 acres	County: Obion	
Soil Type(s) / Geology : Grenada silt loam, 5 - 8 percent slopes, eroded		Source: NRCS
Surrounding Land Use : agriculture and light industrial		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		✓ WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 4**

#### Justification / Notes :

Watercourse reach is approximately 130 feet from lat/long coordinates. It is man made ditch along the TVA electric transmission line.

Appears to be a borrow ditch from the development of a 2-track access road for accessing the right-of-way for TVA operations and maintenance work. Debris in channel.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 0.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 0.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 3 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 4

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Precipitation occurred shortly before field survey.

Photo facing north from beginning of drainage.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Harris Fork Creek		Date/Time: 4/15/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-213		
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 134)		
HUC (12 digit): 080102020208	Lat/Long:	
Previous Rainfall (7-days) : 1.83	36°24'19.19"N, 89° 0'3.27"W	
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 24,546 acres	County: Obion	
Soil Type(s) / Geology : Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration		Source: NRCS
Surrounding Land Use : Highway interchange, TVA maintained ROW		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <u>Slight</u> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		✓ WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination =** WWC

**Secondary Indicator Score (if applicable) =** 5

#### Justification / Notes :

Absent of a defined bed and bank. Vegetation throughout channel. Crossed by overhead TVA transmission line.

Flows into Harris Fork Creek. Reach from lat/long coordinates is only 28 feet.

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## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 0.5)	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 1.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 3 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 5

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Rain event within 48 hours prior to survey.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Cypress Creek		Date/Time: 4/17/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-224		
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 54)		
HUC (12 digit): 080102020207		Lat/Long:
Previous Rainfall (7-days) : 1.8 inches		36°20'59.02"N, 88°54'40.61"W
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 19,111 acres		County: Weakley
Soil Type(s) / Geology : Loring silt loam, 2 - 5 percent slopes, eroded		Source: NRCS
Surrounding Land Use : Agriculture/paved road		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		✓ WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 1.0

#### Justification / Notes :

Roadside ditch to Fuqua Road. Absent of a defined bed and bank. Vegetation throughout channel. Crossed by overhead TVA transmission line. Abuts Fuqua Road.

## Secondary Field Indicator Evaluation

A. <b>Geomorphology</b> (Subtotal = 0.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 1 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	(0)	1	2	3
15. Water in channel and >48 hours since sig. rain	0	(1)	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	(0)
17. Sediment on plants or on debris	(0)	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	(0)	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 1 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sub>1</sub>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sub>1</sub>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sub>2</sub>	0	0.5	1	1.5

1 Focus is on the presence of **terrestrial** plants.

2 Focus is on the presence of aquatic or wetland plants.

Total Points = 1

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Precipitation event within 48 hours of survey





# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Cane Creek		Date/Time: 4/17/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-227		
Site Location: Skyhawk Solar Project Transmission Upgrade (btwn structures # 24 and #25)		
HUC (12 digit): 080102030502	Lat/Long:	
Previous Rainfall (7-days) : 1.80 inches	36°19'33.72"N, 88°52'23.70"W	
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 26,393 acres	County: Weakley	
Soil Type(s) / Geology : Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration		Source: NRCS
Surrounding Land Use : Highway 216, Agriculture		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <u>Slight</u> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 9

#### Justification / Notes :

Vegetation along channel. Associated with transmission line access road.
Reach from lat/long coordinates is 143 feet.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 2.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	(1)	2	3
2. Sinuous channel	(0)	1	2	3
3. In-channel structure: riffle-pool sequences	(0)	1	2	3
4. Sorting of soil textures or other substrate	(0)	1	2	3
5. Active/relic floodplain	0	0.5	(1)	1.5
6. Depositional bars or benches	(0)	1	2	3
7. Braided channel	(0)	1	2	3
8. Recent alluvial deposits	0	(0.5)	1	1.5
9. Natural levees	(0)	1	2	3
10. Headcuts	(0)	1	2	3
11. Grade controls	(0)	0.5	1	1.5
12. Natural valley or drainageway	(0)	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	(No = 0)		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 3.0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	(0)	1	2	3
15. Water in channel and >48 hours since sig. rain	0	(1)	2	3
16. Leaf litter in channel (January – September)	(1.5)	1	0.5	0
17. Sediment on plants or on debris	(0)	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	(0.5)	1	1.5
19. Hydric soils in channel bed or sides of channel	(No = 0)		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 3.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	(1)	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	(2)	1	0
22. Crayfish in stream (exclude in floodplain)	(0)	1	2	3
23. Bivalves/mussels	(0)	1	2	3
24. Amphibians	0	(0.5)	1	1.5
25. Macroinvertebrates (record type & abundance)	(0)	1	2	3
26. Filamentous algae; periphyton	(0)	1	2	3
27. Iron oxidizing bacteria/fungus	(0)	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	(0)	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 9

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Rain event on morning of survey.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Cane Creek		Date/Time: 4/18/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-230		
Site Location: Skyhawk Solar Project Transmission Upgrade (btwn structures # 3T and 3U)		
HUC (12 digit): 080102030502	Lat/Long:	
Previous Rainfall (7-days) : 1.88 inches	36°18'20.65"N, 88°50'35.84"W	
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 26,393 acres	County: Weakley	
Soil Type(s) / Geology : Routon silt loam, 0 to 2 percent slopes		Source: NRCS
Surrounding Land Use : Immediate area is mowed property of equipment operator/leasee, beyond is agriculture		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <u>Moderate</u> Slight Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 10.0

#### Justification / Notes :

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Drainageway in mowed area under the TVA transmission ROW. Reach is 100 feet from coordinates.

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## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 4.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 2.5 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 3.0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 10.0

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Rain event within 48 hours of field surveys.

Photo taken looking west/upstream.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Unnamed Tributary Mud Creek		Date/Time: 4/20/2020
Assessors/Affiliation:		Project ID : Skyhawk Solar Project (Transmission upgrades)
Site Name/Description: S-236		
Site Location: Skyhawk Solar Project Transmission Upgrade (structure # 3E)		
HUC (12 digit): 080102030503		Lat/Long:
Previous Rainfall (7-days) : 1.44 inches		36°16'56.84"N, 88°50'38.28"W
Precipitation this Season vs. Normal : abnormally wet <u>elevated</u> average low abnormally dry unknown		
Source of recent & seasonal precip data : Weather Station: Everett-Stewart Rgnl Station; NOAA		
Watershed Size : 35,010 acres		County: Weakley
Soil Type(s) / Geology : Loring silt loam, 8 - 12 percent slopes, severely eroded		Source: NRCS
Surrounding Land Use : Agriculture/TVA transmission ROW, forested area		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <u>Slight</u> Absent		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		✓ WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		✓ WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i> )	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

<b>Overall Hydrologic Determination =</b> WWC
<b>Secondary Indicator Score (if applicable) =</b> 5.0

#### Justification / Notes :

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Absent of a defined bed and bank. Vegetation throughout channel. Crossed by overhead TVA transmission line.

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Flows into an intermittent stream. Reach from lat/long coordinates is only 155 feet.

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## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 3.0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	<u>1</u>	2	3
2. Sinuous channel	0	<u>1</u>	2	3
3. In-channel structure: riffle-pool sequences	<u>0</u>	1	2	3
4. Sorting of soil textures or other substrate	<u>0</u>	1	2	3
5. Active/relic floodplain	0	<u>0.5</u>	1	1.5
6. Depositional bars or benches	<u>0</u>	1	2	3
7. Braided channel	<u>0</u>	1	2	3
8. Recent alluvial deposits	0	<u>0.5</u>	1	1.5
9. Natural levees	<u>0</u>	1	2	3
10. Headcuts	<u>0</u>	1	2	3
11. Grade controls	<u>0</u>	0.5	1	1.5
12. Natural valley or drainageway	<u>0</u>	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	<u>No = 0</u>		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 1.0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	<u>0</u>	1	2	3
15. Water in channel and >48 hours since sig. rain	<u>0</u>	1	2	3
16. Leaf litter in channel (January – September)	1.5	<u>1</u>	0.5	0
17. Sediment on plants or on debris	<u>0</u>	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	<u>0</u>	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	<u>No = 0</u>		Yes = 1.5	

<b>C. Biology</b> (Subtotal = 1.0 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>	3	2	1	<u>0</u>
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>	3	2	<u>1</u>	0
22. Crayfish in stream (exclude in floodplain)	<u>0</u>	1	2	3
23. Bivalves/mussels	<u>0</u>	1	2	3
24. Amphibians	<u>0</u>	0.5	1	1.5
25. Macrobenthos (record type & abundance)	<u>0</u>	1	2	3
26. Filamentous algae; periphyton	<u>0</u>	1	2	3
27. Iron oxidizing bacteria/fungus	<u>0</u>	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>	<u>0</u>	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 5.0

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

Transmission line crossing. Rain event  
occurred 48 hours prior to survey.





## **APPENDIX D - 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.

TN Solar 1, LLC  
Skyhawk Solar Project



Photographs  
March 2-4, and April 14-21, 2020  
Obion and Weakley Counties, TN





Photograph C-5: View of PUB W-219, facing north.



Photograph C-6: View of PUB W-228, facing southeast.

TN Solar 1, LLC  
Skyhawk Solar Project



Photographs  
March 2-4, and April 14-21, 2020  
Obion and Weakley Counties, TN





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.

TN Solar 1, LLC  
Skyhawk Solar Project



Photographs  
March 2-4, and April 14-21, 2020  
Obion and Weakley Counties, TN





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.

TN Solar 1, LLC  
Skyhawk Solar Project



Photographs  
March 2-4, and April 14-21, 2020  
Obion and Weakley Counties, TN





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.

TN Solar 1, LLC  
Skyhawk Solar Project



Photographs  
March 2-4, and April 14-21, 2020  
Obion and Weakley Counties, TN





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.

## **APPENDIX E – PROTECTED SPECIES FIELD HABITAT ASSESSMENT 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**

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**LIST OF ABBREVIATIONS**

<b><u>Abbreviation</u></b>	<b><u>Term/Phrase/Name</u></b>
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 may 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.**

<b>Common Name (Scientific Name)</b>	<b>Protection Classification<sup>a</sup></b>	<b>Status<sup>b</sup></b>	<b>County</b>	<b>Range and/or Habitat Requirements</b>	<b>Potential to Occur within Survey Area</b>	<b>Effects Determination</b>
Indiana Bat ( <i>Myotis sodalis</i> )	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 ( <i>Myotis septentrionalis</i> )	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  $\geq 3$  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 <sup>(a)(b)</sup>	County	Range and/or Habitat Requirements	Potential to Occur within Survey Area	Effects Determination
Lake Cress ( <i>Neobeckia aquatica</i> )	S	Obion,	Gum of cypress swamps	Does Not Occur	No effect
Harbison's Hawthorn ( <i>Crataegus harbisonii</i> )	E	Obion, Weakley	Dry rocky calcareous woods	Does Not Occur	No effect
Copper Iris ( <i>Iris fulva</i> )	T	Obion	Bottomlands	Does Not Occur	No effect
Featherfoil ( <i>Hottonia inflata</i> )	S	Obion	Wet sloughs and ditches	Unlikely to Occur	No effect
Ovate-leaved Arrowhead ( <i>Sagittaria platyphylla</i> )	S	Obion	Swamps, emergent	Unlikely to Occur	No effect
Water-purslane ( <i>Didiplis diandra</i> )	T	Obion	Swamps	Unlikely to Occur	No effect
Choke Cherry ( <i>Prunus virginiana</i> )	S	Obion	Moist coves and slopes	Unlikely to Occur	No effect
Sweetscent Ladies'-tresses ( <i>Spiranthes odorata</i> )	E	Obion	Swamp or pond margins	Unlikely to Occur	No effect
Nuttall's Waterweed ( <i>Elodea nuttallii</i> )	S	Obion	Aquatic; streams and ponds	Unlikely to Occur	No effect
Yellow Water- crowfoot ( <i>Ranunculus flabellaris</i> )	T	Obion	Ponds and Marshes	Unlikely to Occur	No effect
Bristly Sedge ( <i>Carex comosa</i> )	T	Obion	Swamps	Unlikely to Occur	No effect
American Ginseng ( <i>Panax quinquefolius</i> )	S-CE	Obion	Rich woods	Does Not Occur	No effect
Spinulose Shield Fern ( <i>Dryopteris carthusiana</i> )	T	Weakley	Bogs	Does Not Occur	No effect
Naked-stem Sunflower ( <i>Helianthus occidentalis</i> )	S	Weakley	Limestone glades and barrens	Does Not Occur	No effect

Common Name (Scientific Name)	Status <sup>(a)(b)</sup>	County	Range and/or Habitat Requirements	Potential to Occur within Survey Area	Effects Determination
Red Turtlehead ( <i>Chelone obliqua</i> )	S	Weakley	Alluvial swamps and wet woods	Does Not Occur	No effect
Hatchie Burrowing Crayfish ( <i>Creaserinus hortoni</i> )	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 ( <i>Peucaea aestivalis</i> )	E	Obion	Dry open pine or oak woods	Unlikely to Occur	No effect
Eastern Woodrat ( <i>Neotoma floridana illinoensis</i> )	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												Breeding Season
		■ probability of presence   ■ breeding season     survey effort   — no data												
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
American Kestrel	<i>Falco sparverius paulus</i>	— — — —			■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	— — — —			■ — ■ —	April 1 – August 31
Rusty Blackbird	<i>Euphagus carolinus</i>	— — — —			— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	■ — ■ —	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 minimize 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 1<sup>st</sup> through September 1<sup>st</sup> 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

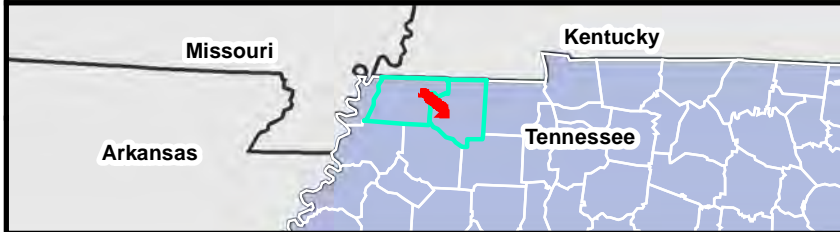
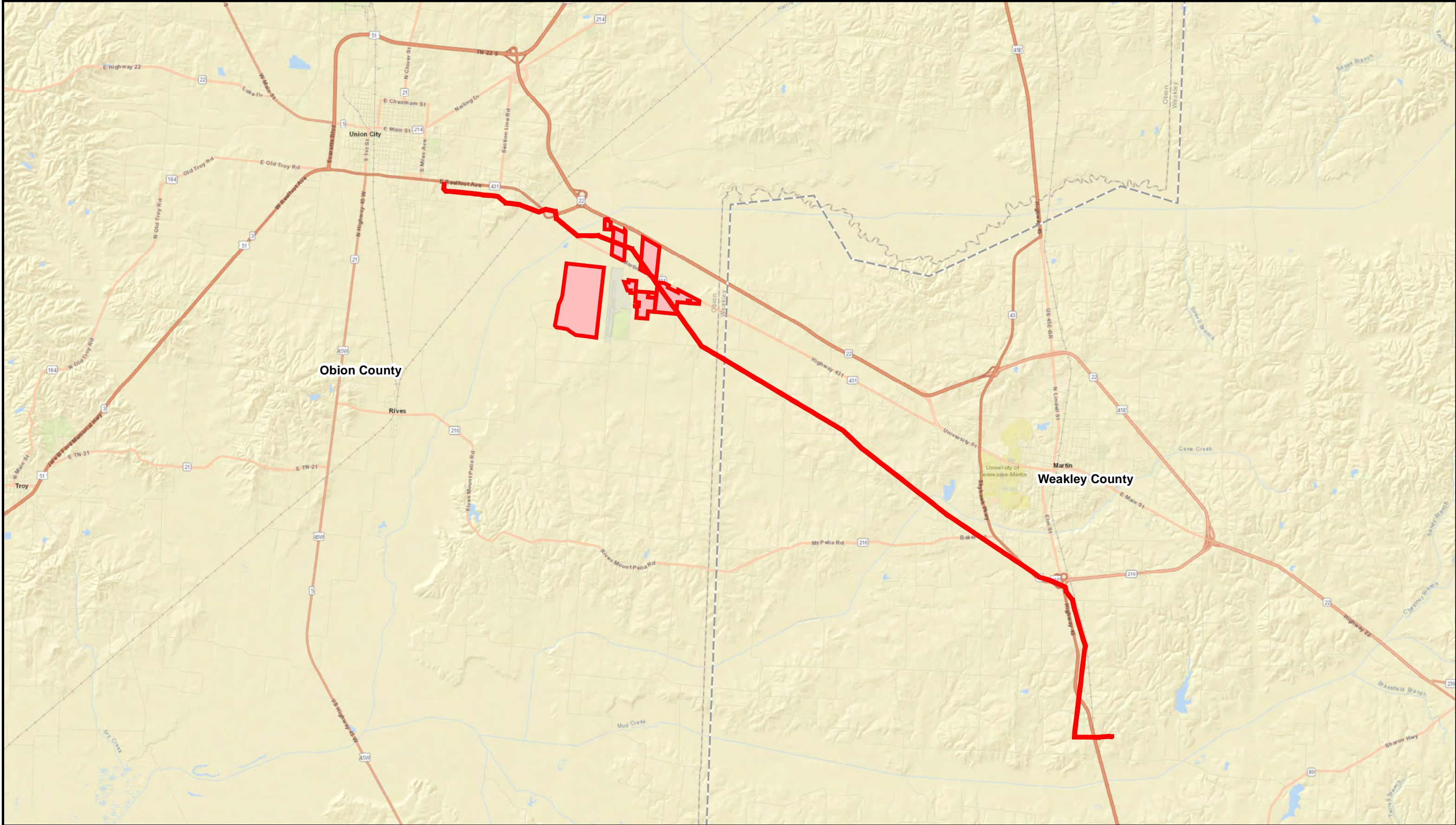
- Burns & McDonnell. 2020. *Draft Wetland Delineation Report – Skyhawk Solar Array Project - Parcels*. Atlanta, Georgia: Burns & McDonnell Engineering Company, Inc.
- Burns & McDonnell. 2020. *Draft Wetland Delineation Report – Skyhawk Solar Array Project – TVA Transmission Line*. Atlanta, Georgia: Burns & 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/EPADDataCommons/ORD/Ecoregions/us/Eco\\_Level\\_III\\_US.pdf](http://newftp.epa.gov/EPADDataCommons/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](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](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/inbafactsht.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.






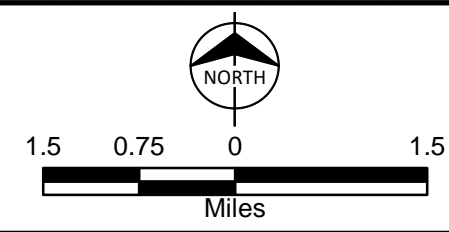
## **APPENDIX A - SITE VICINITY FIGURE**



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Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

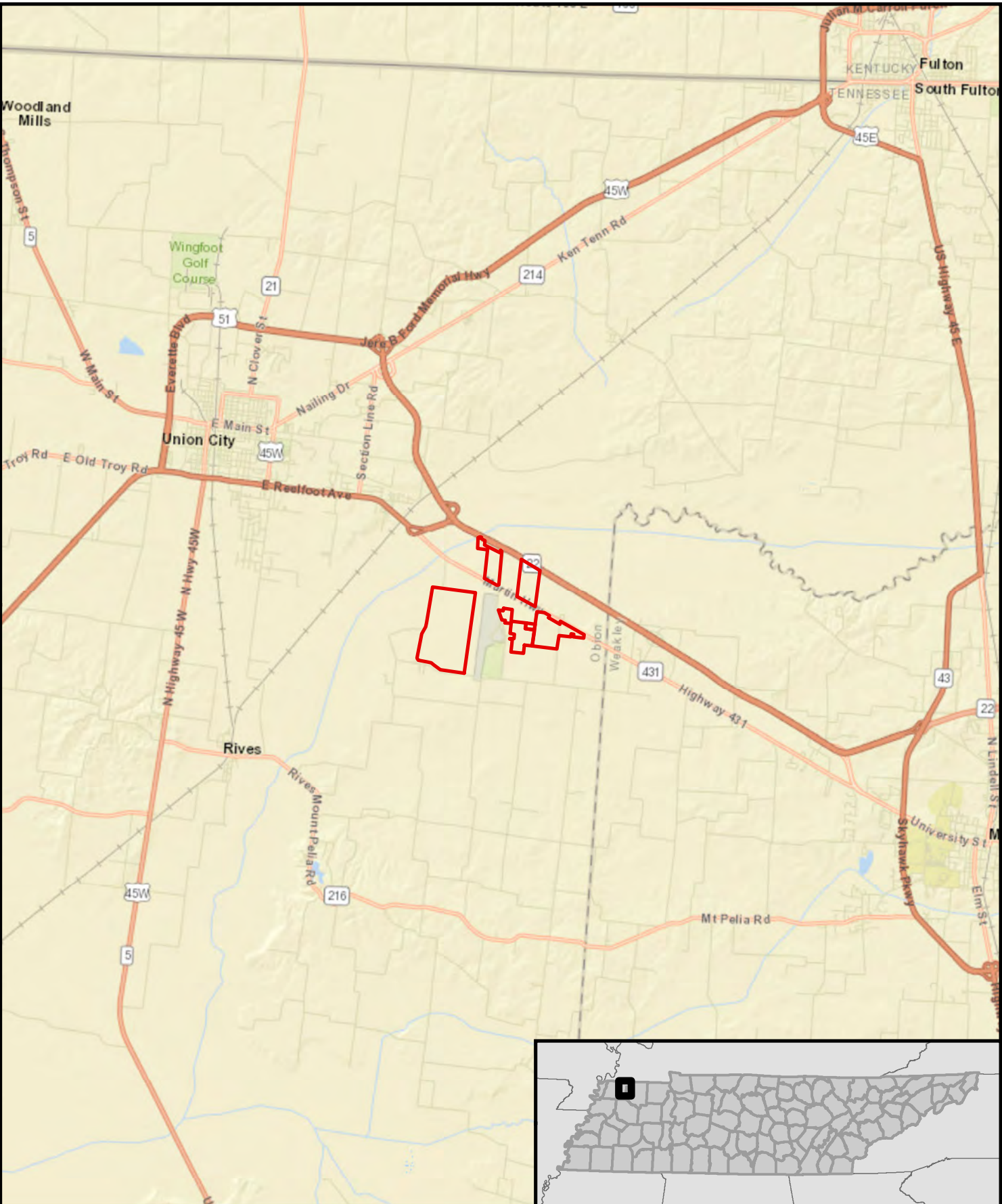


-  Solar Array Parcels
-  Overhead Fiber Line
-  County Boundary

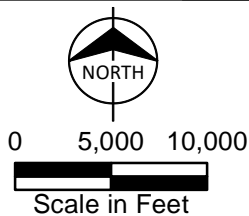


Appendix A: Site Vicinity Figure  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN





 Parcels

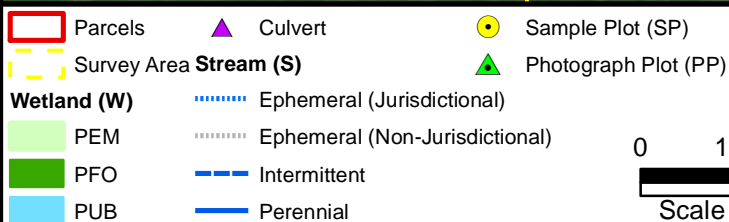


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Appendix B:  
Water Resources Figure  
Solar Array Parcels  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion County, TN  
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## **APPENDIX B – WATER RESOURCES FIGURES**



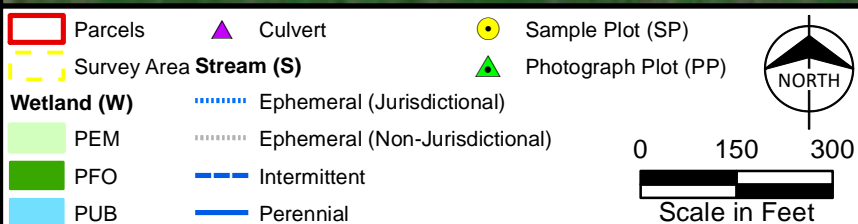
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Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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	Parcels		Culvert		Sample Plot (SP)
	Survey Area		Photograph Plot (PP)		
<b>Wetland (W)</b>			Ephemeral (Jurisdictional)		
	PEM		Ephemeral (Non-Jurisdictional)		
	PFO		Intermittent		
	PUB		Perennial		

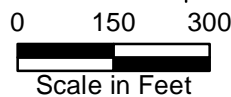
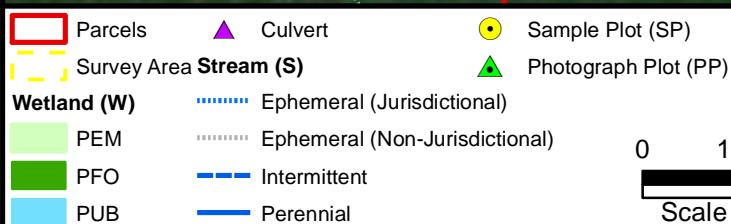
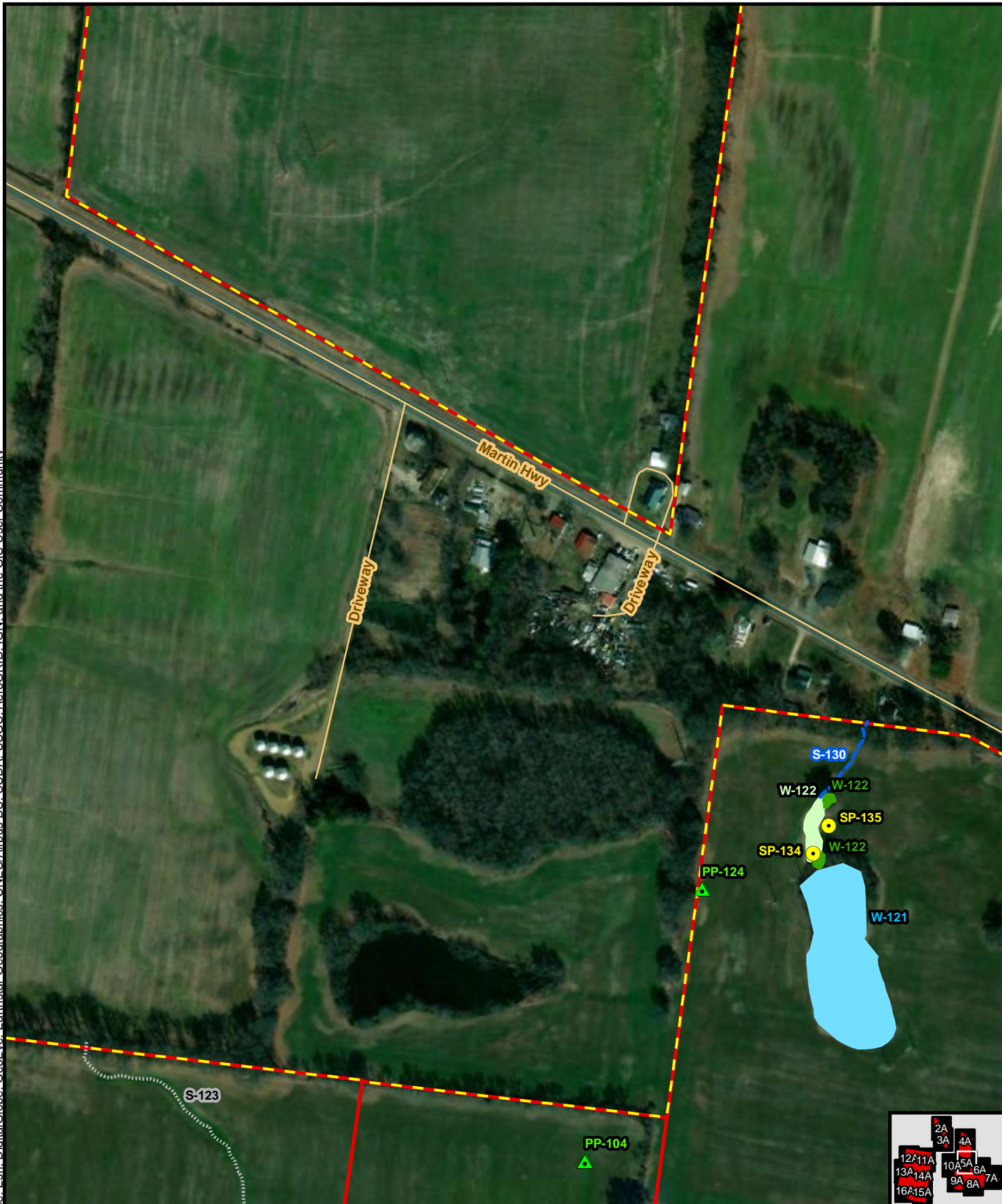


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Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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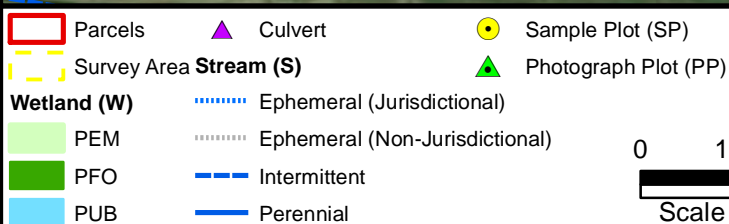


Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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Appendix B:  
Water Resources Figures  
Solar Array Parcels  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion County, TN  
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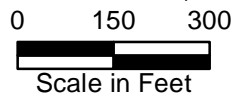
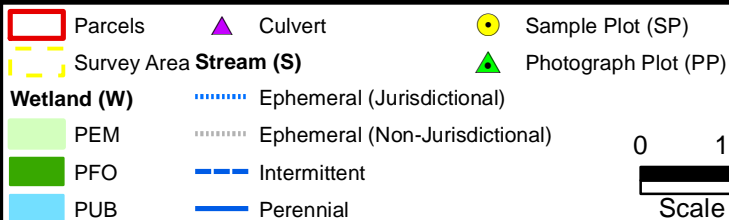
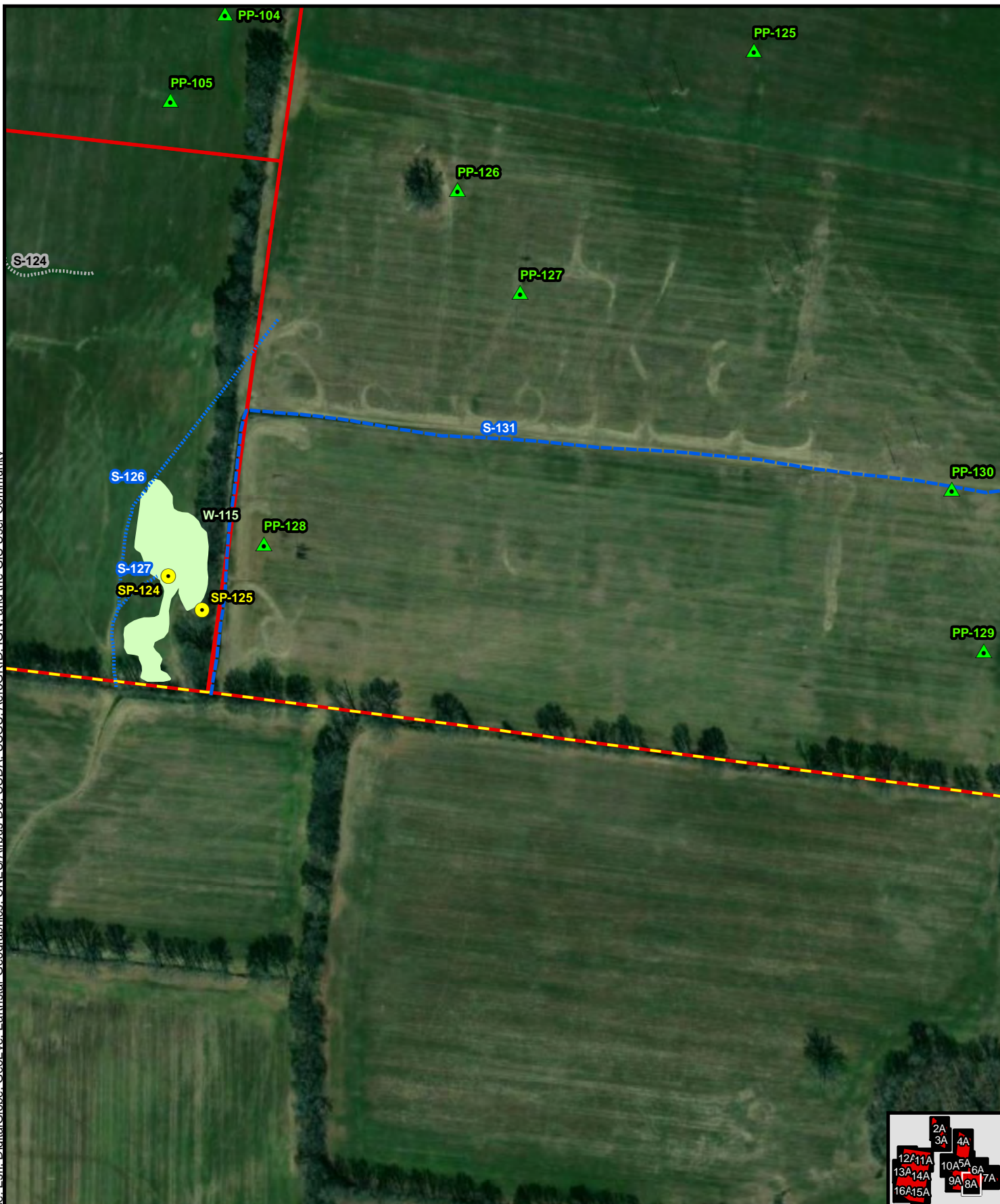




A diagram of a 4x4 grid. The grid contains red numbers 1 through 16 and black numbers 1A through 16A. The red numbers are arranged in a pattern that suggests a 4x4 grid, with some numbers missing or overlapping. The black numbers are arranged in a similar pattern, also with some missing or overlapping. The red numbers are: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16. The black numbers are: 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 10A, 11A, 12A, 13A, 14A, 15A, 16A.



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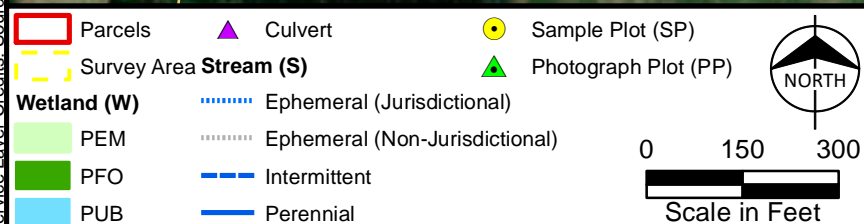
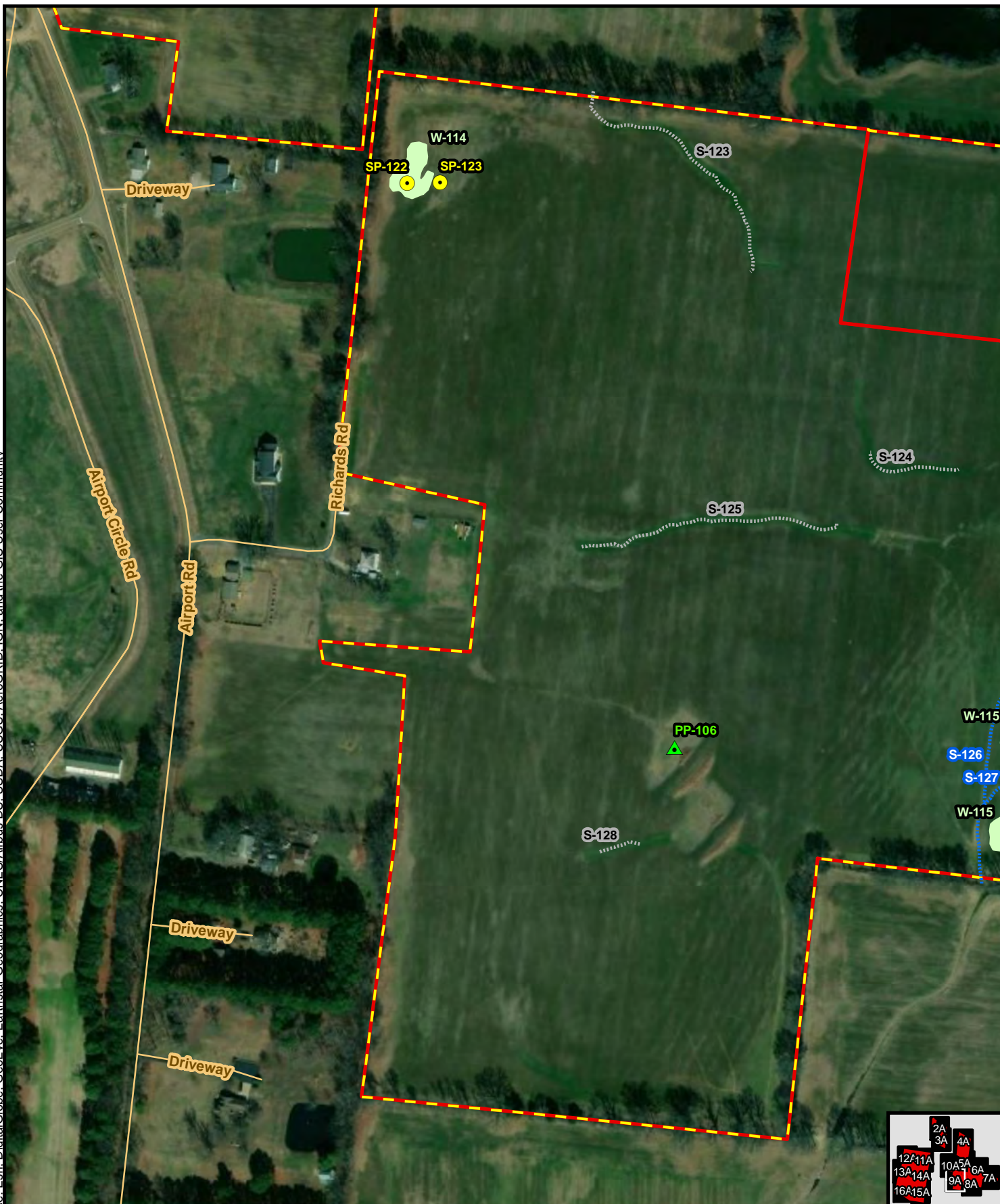


Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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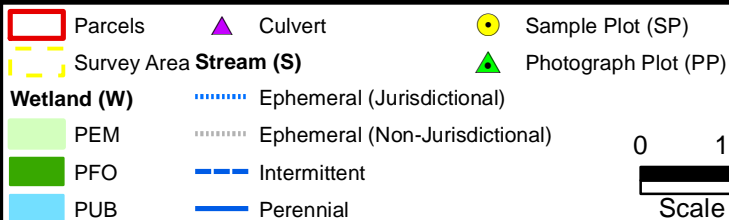
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Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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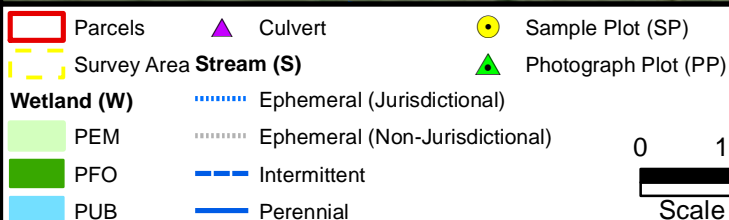
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Appendix B:  
 Water Resources Figures  
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 TN Solar 1, LLC  
 Obion County, TN  
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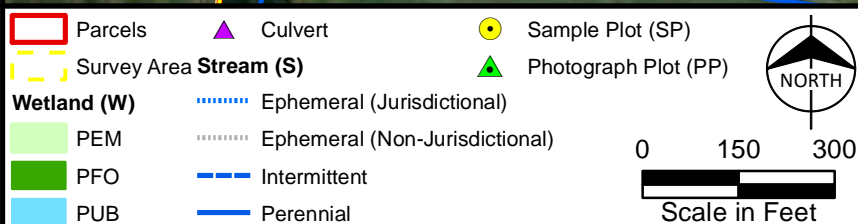


Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
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Appendix B:  
Water Resources Figures  
Solar Array Parcels  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion County, TN  
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| <span style="background-color: green;"> </span> PFO                         | <span style="color: blue;">---</span> Intermittent                   |  |
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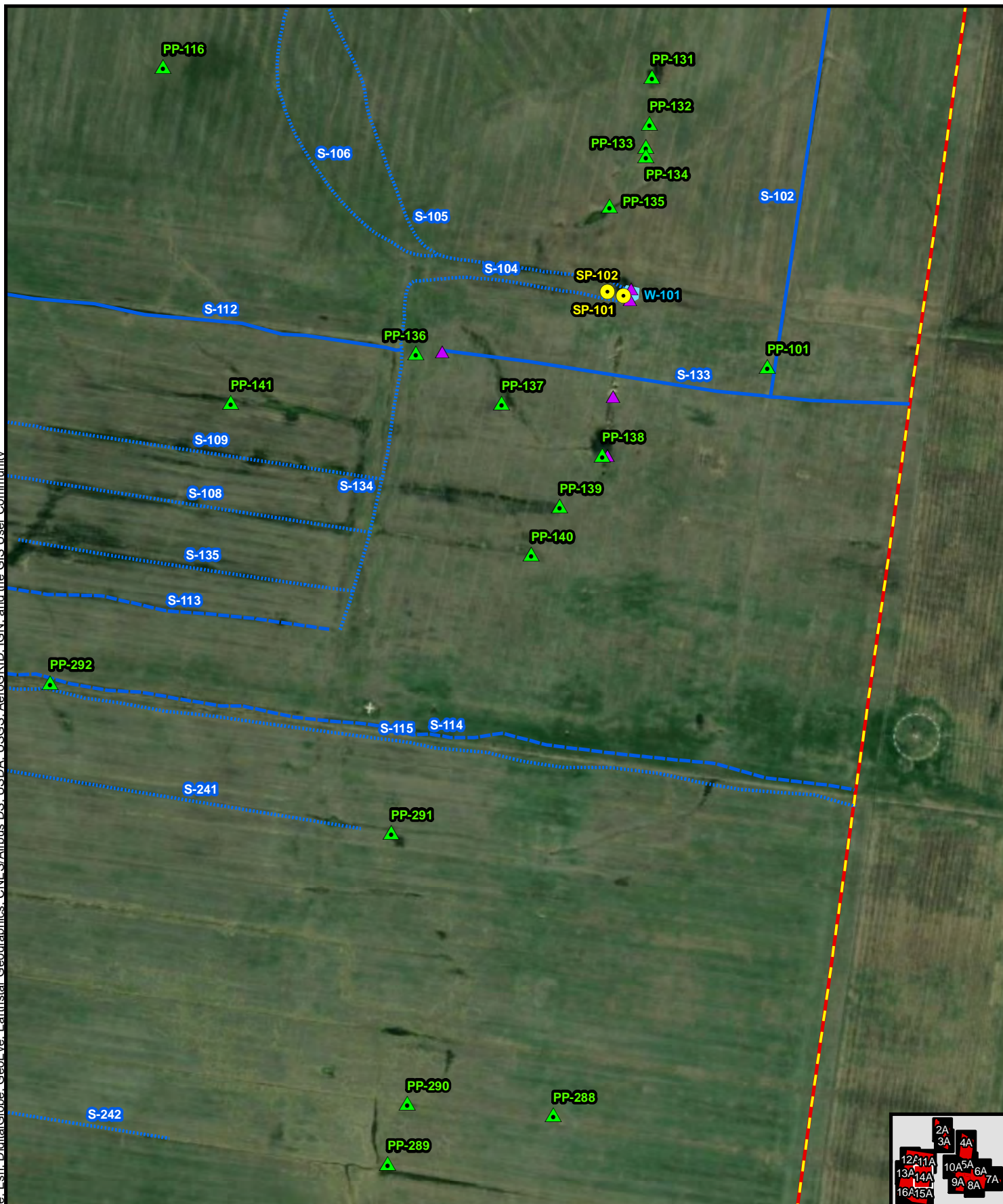


Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
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 Obion County, TN  
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|--------------------|--------------------------------|------------------|
| Parcels            | Culvert                        | Sample Plot (SP) |
| Survey Area        | Photograph Plot (PP)           |                  |
| <b>Wetland (W)</b> | Ephemeral (Jurisdictional)     |                  |
| PEM                | Ephemeral (Non-Jurisdictional) |                  |
| PFO                | Intermittent                   |                  |
| PUB                | Perennial                      |                  |

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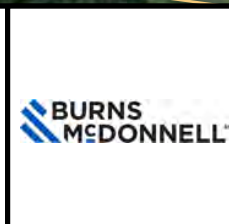
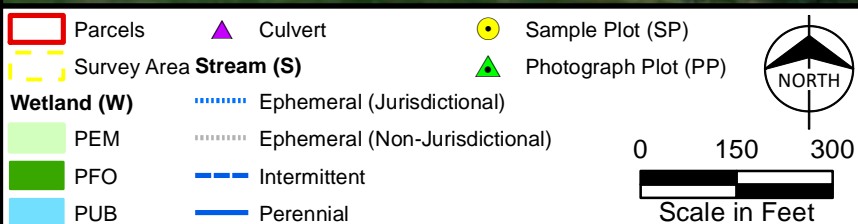
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Appendix B:  
Water Resources Figures  
Solar Array Parcels  
Skyhawk Solar Project  
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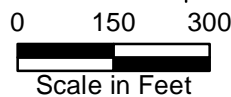
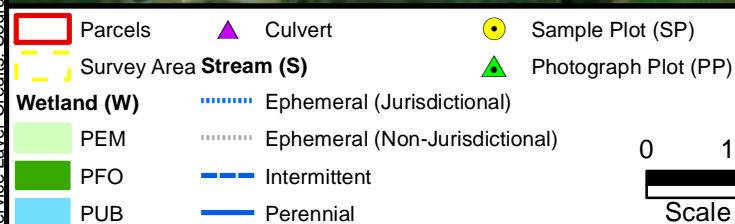
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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Appendix B:  
Water Resources Figures  
Solar Array Parcels  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion County, TN  
Page 15A of 16A



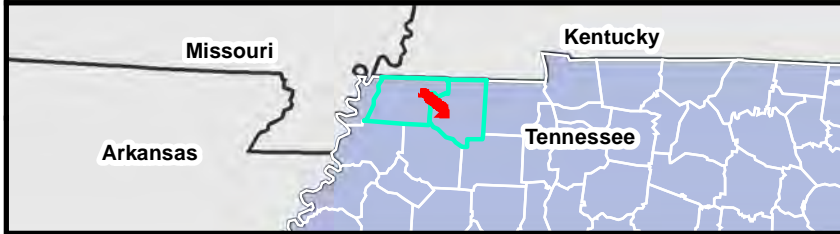
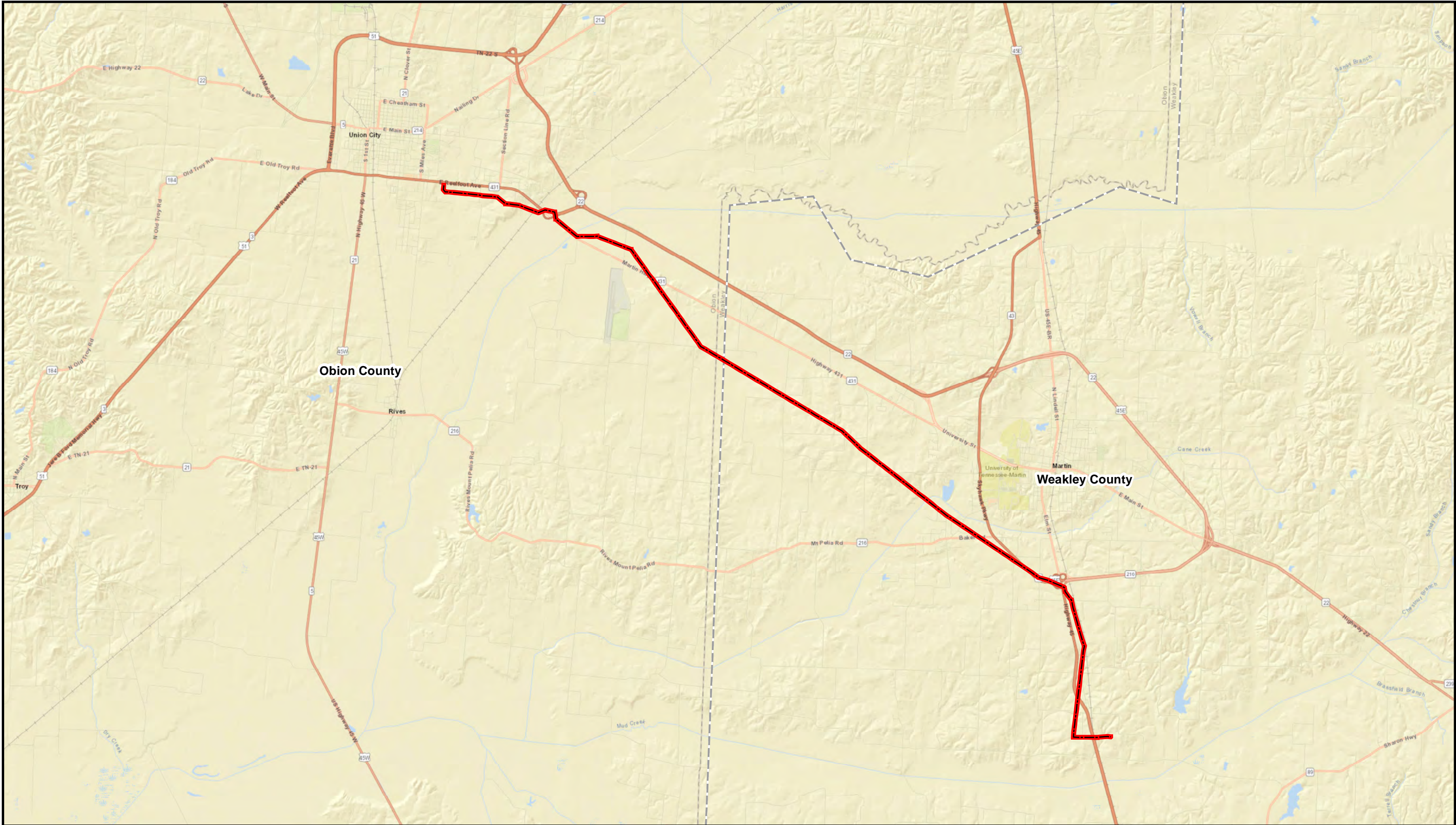
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



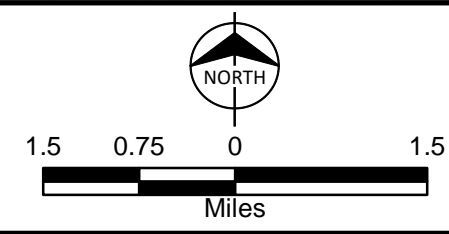
Appendix B:  
 Water Resources Figures  
 Solar Array Parcels  
 Skyhawk Solar Project  
 TN Solar 1, LLC  
 Obion County, TN  
 Page 16A of 16A



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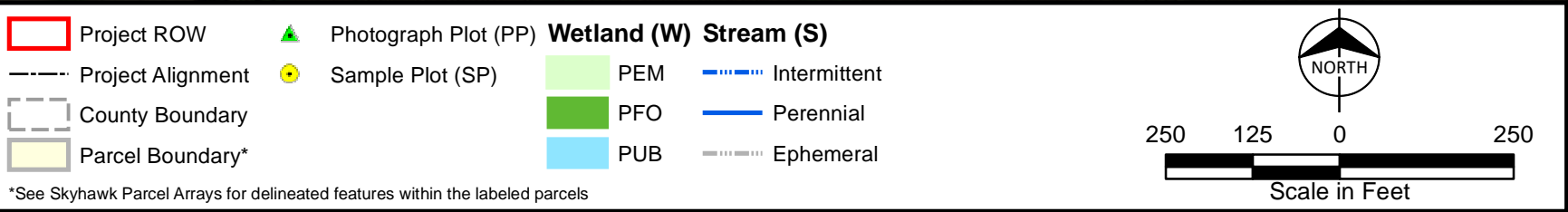
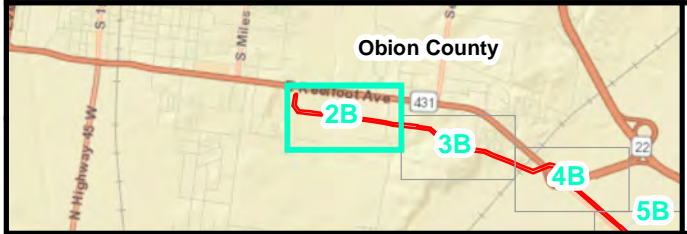
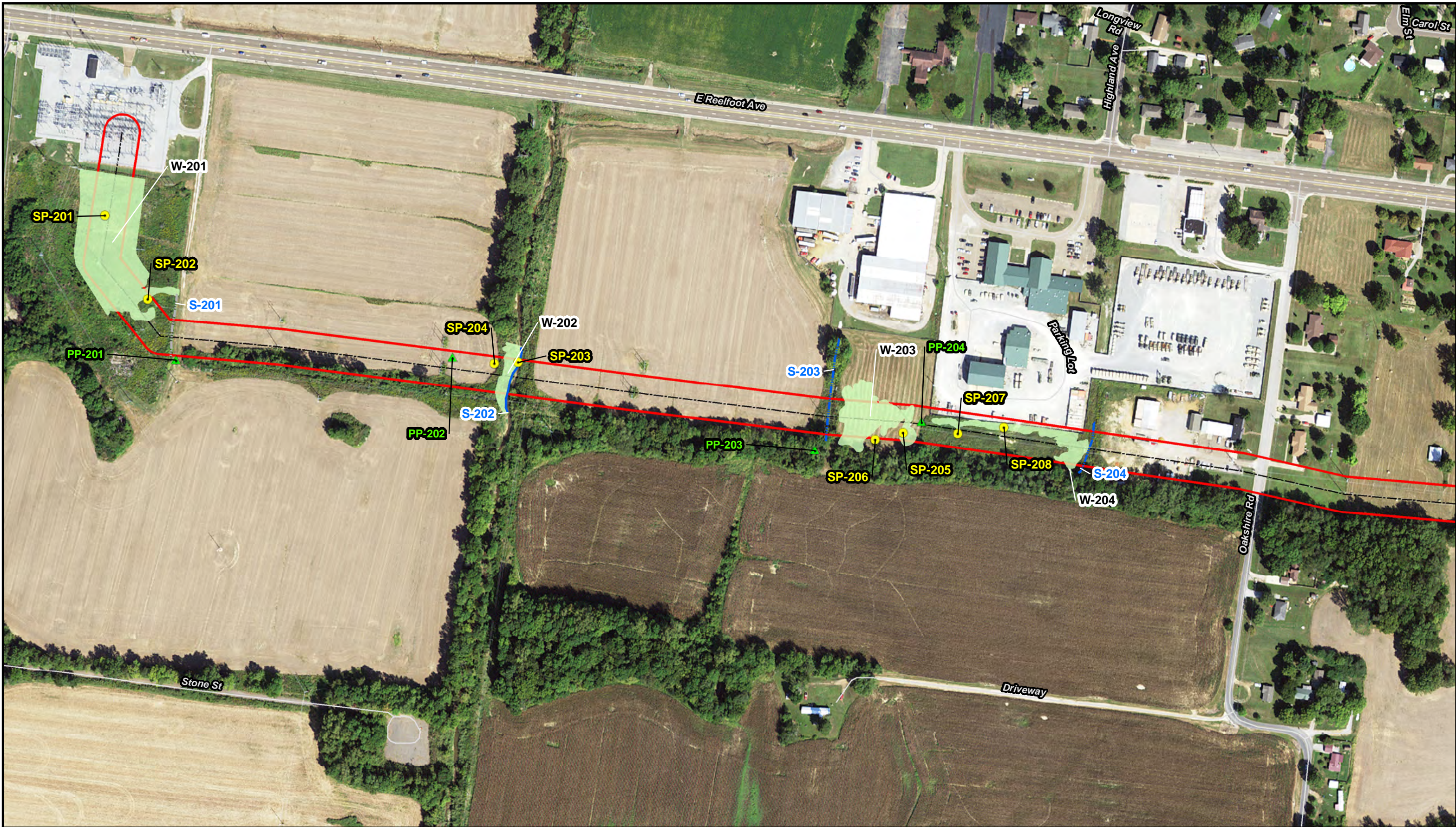
-  Project ROW
-  Project Alignment
-  County Boundary



Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 1B of 27B



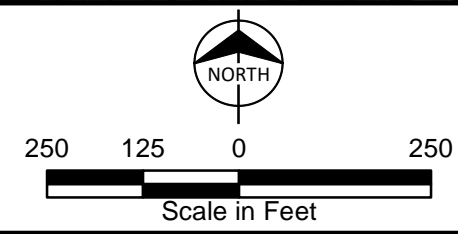
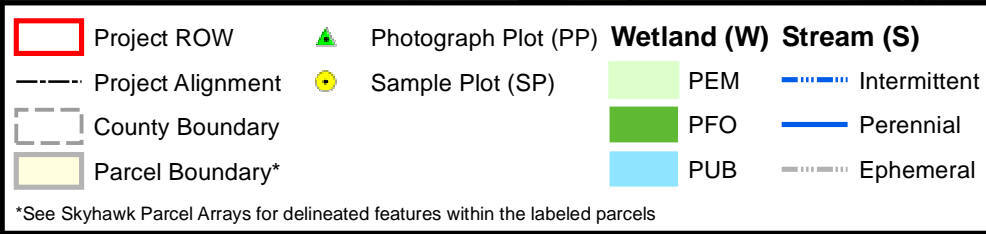
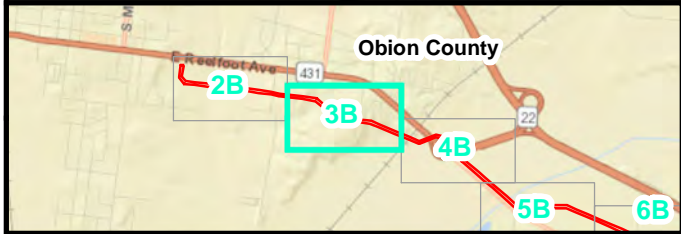
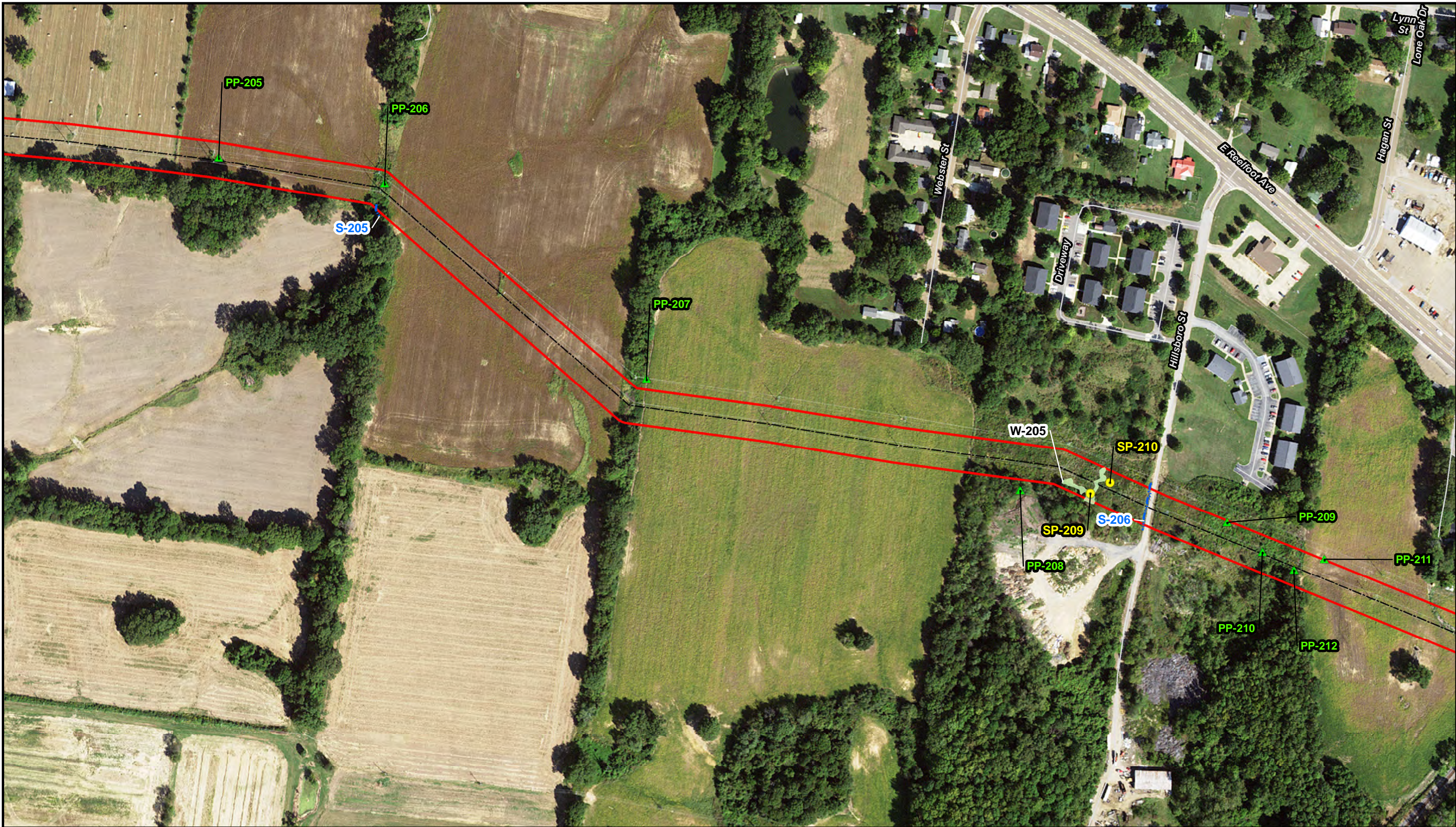
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 2B of 27B



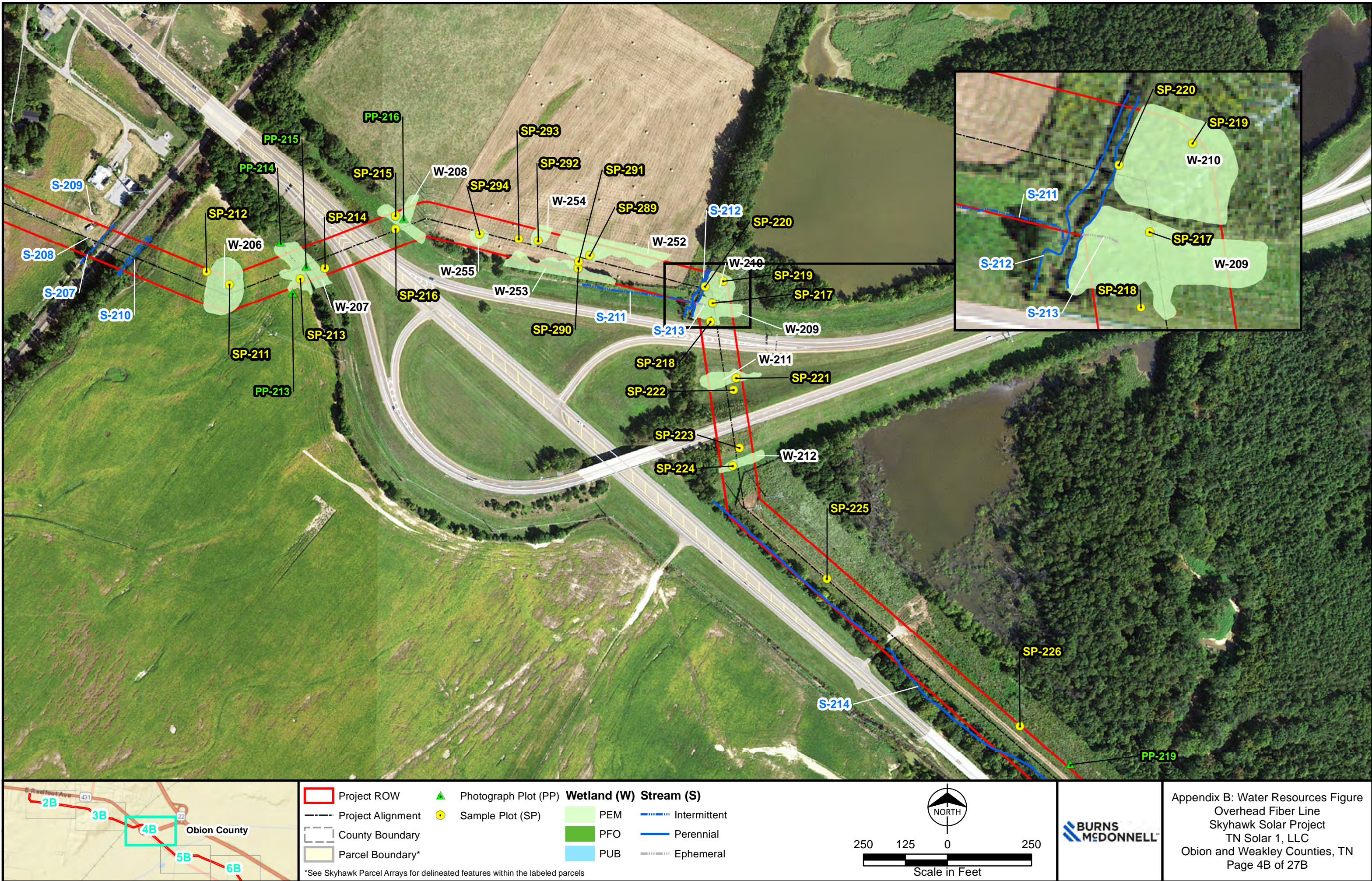
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 3B of 27B

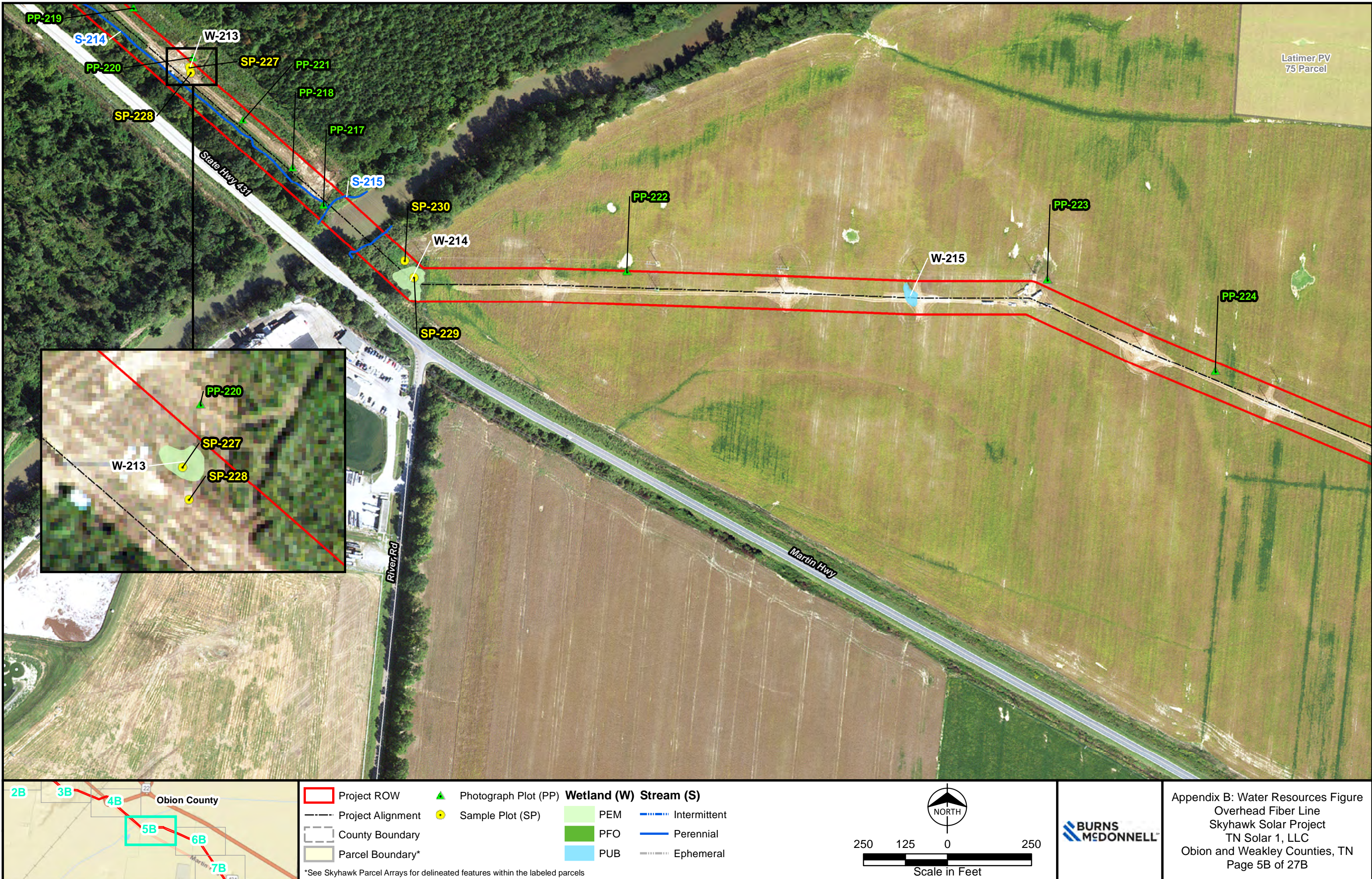


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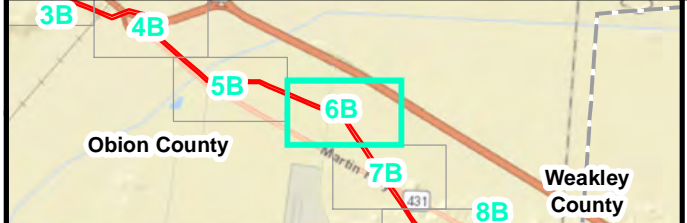
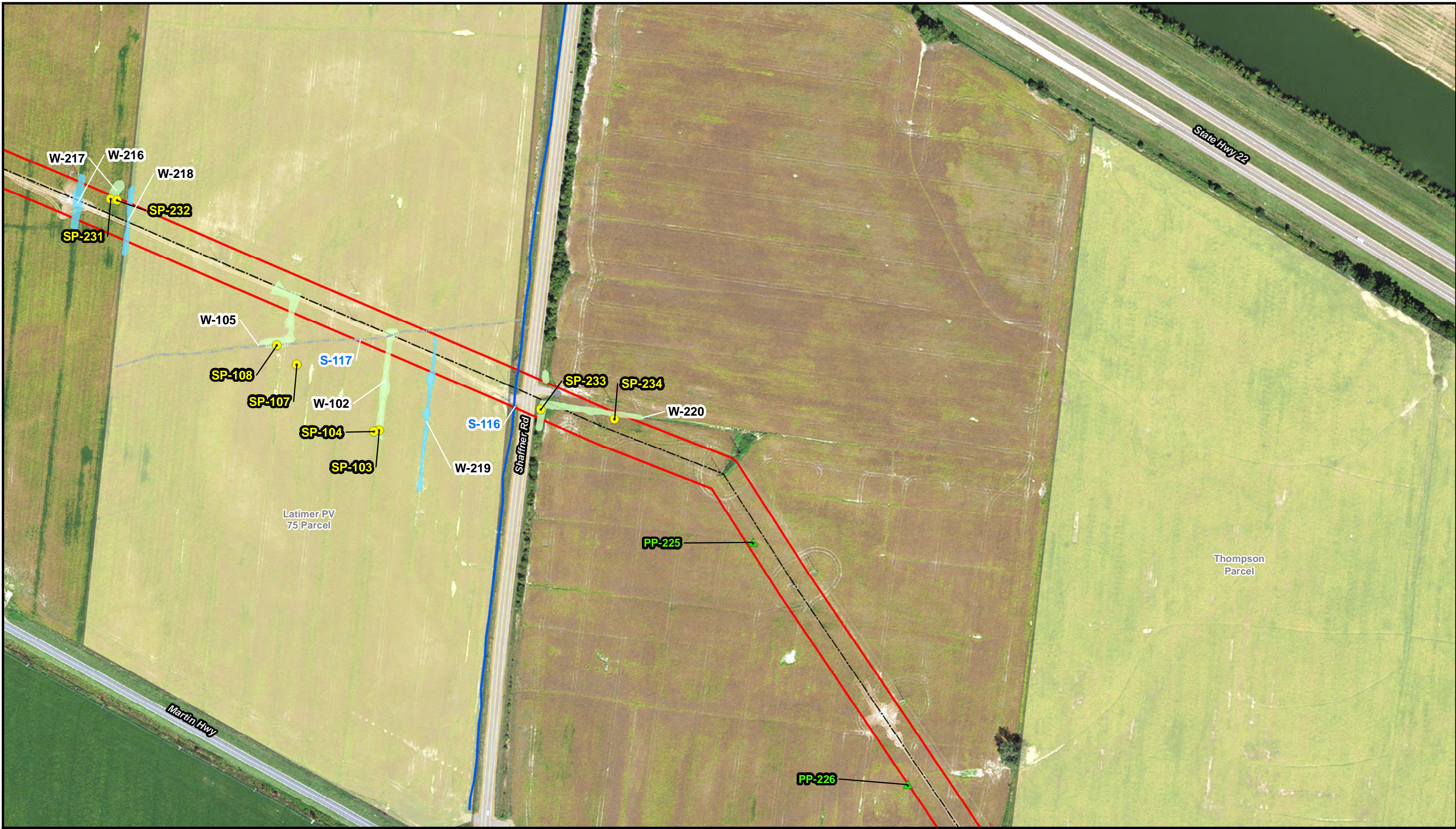


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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
Parcel Boundary*		PUB	Ephemeral

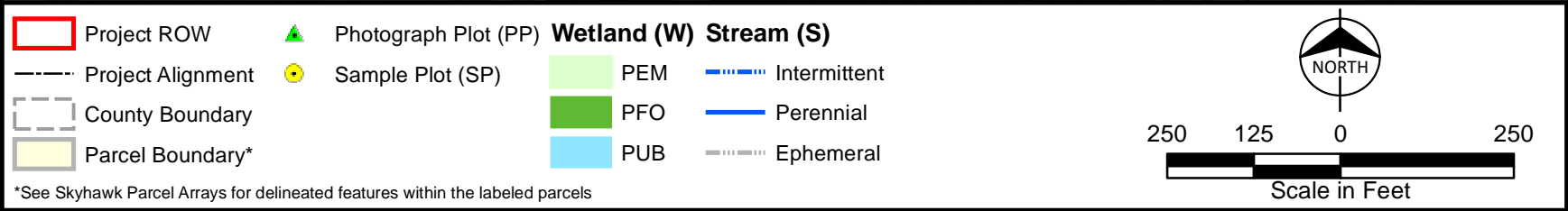
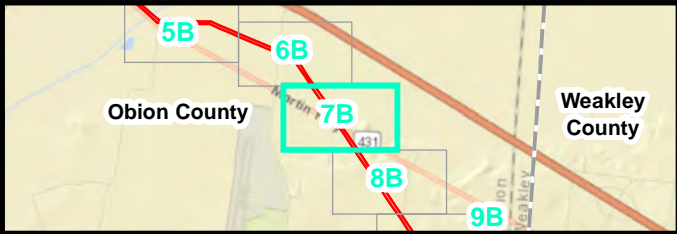
\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 6B of 27B



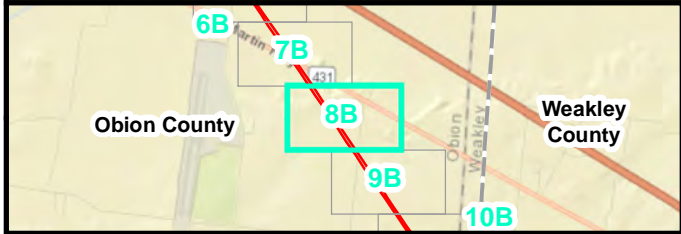
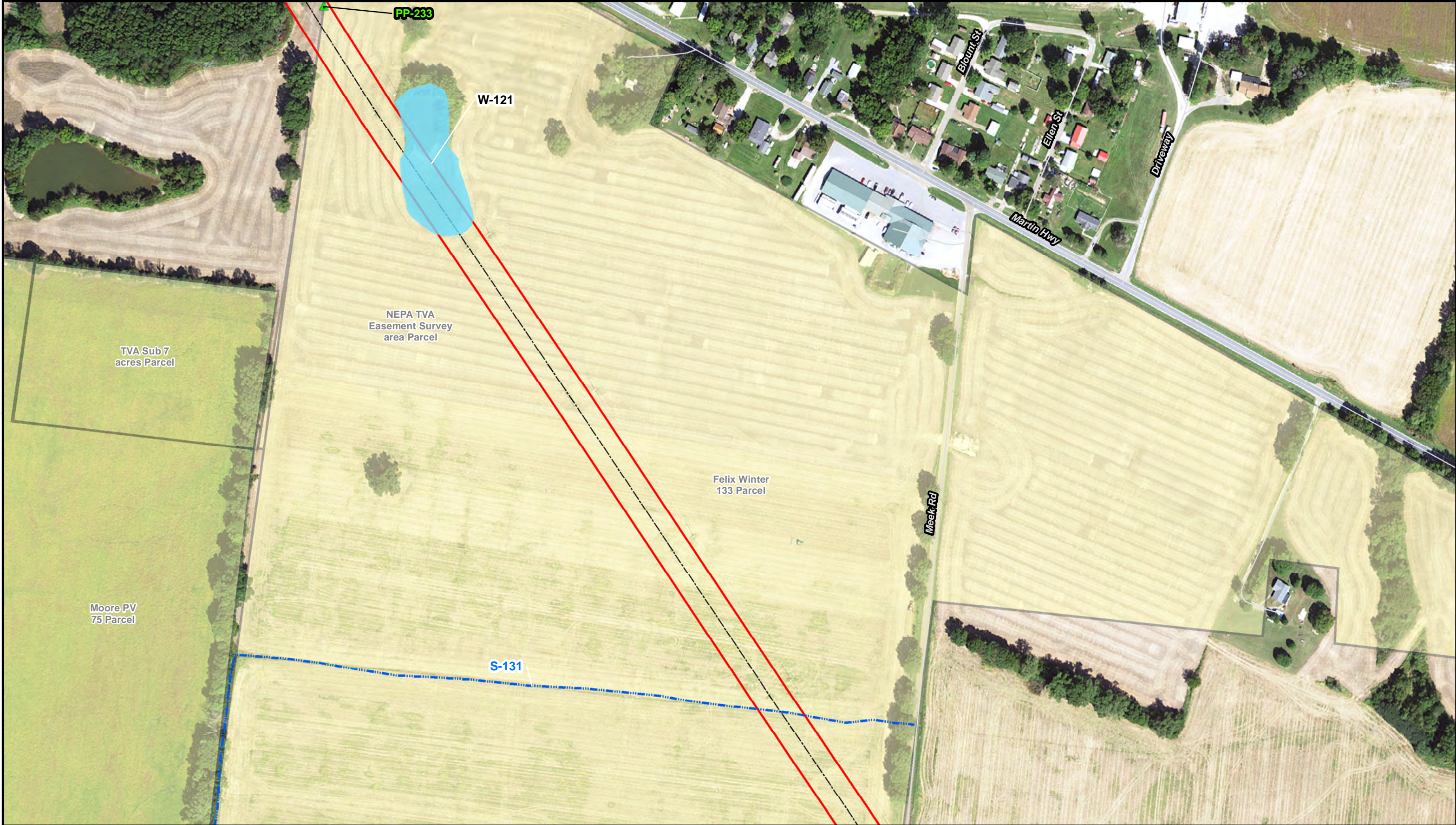
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Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
Parcel Boundary*		PUB	Ephemeral

\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

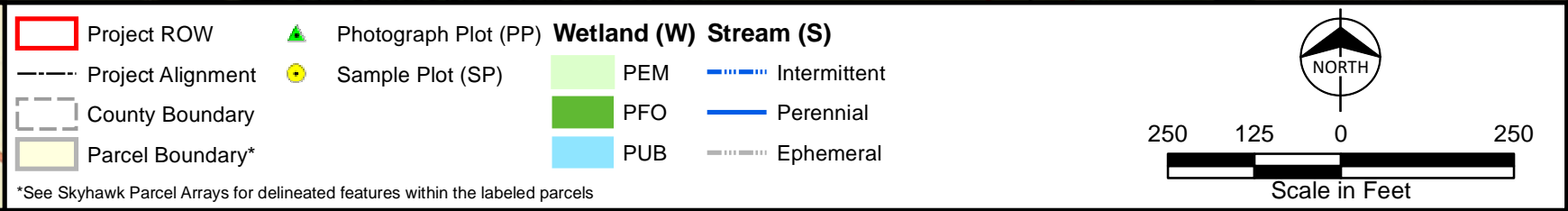
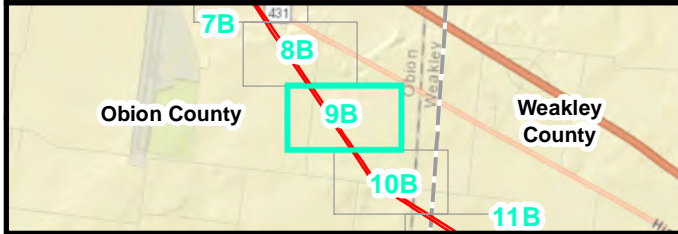
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 8B of 27B



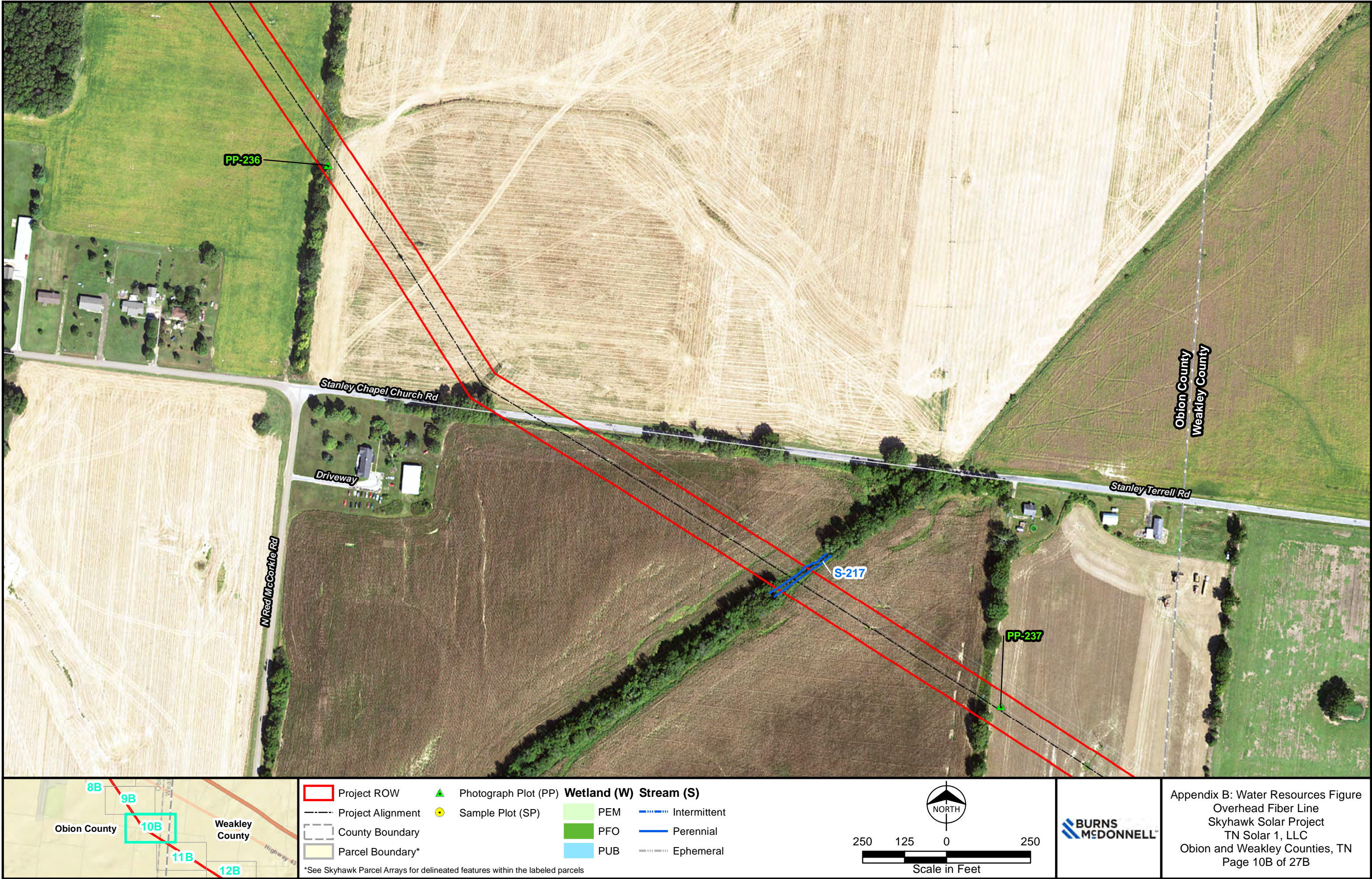
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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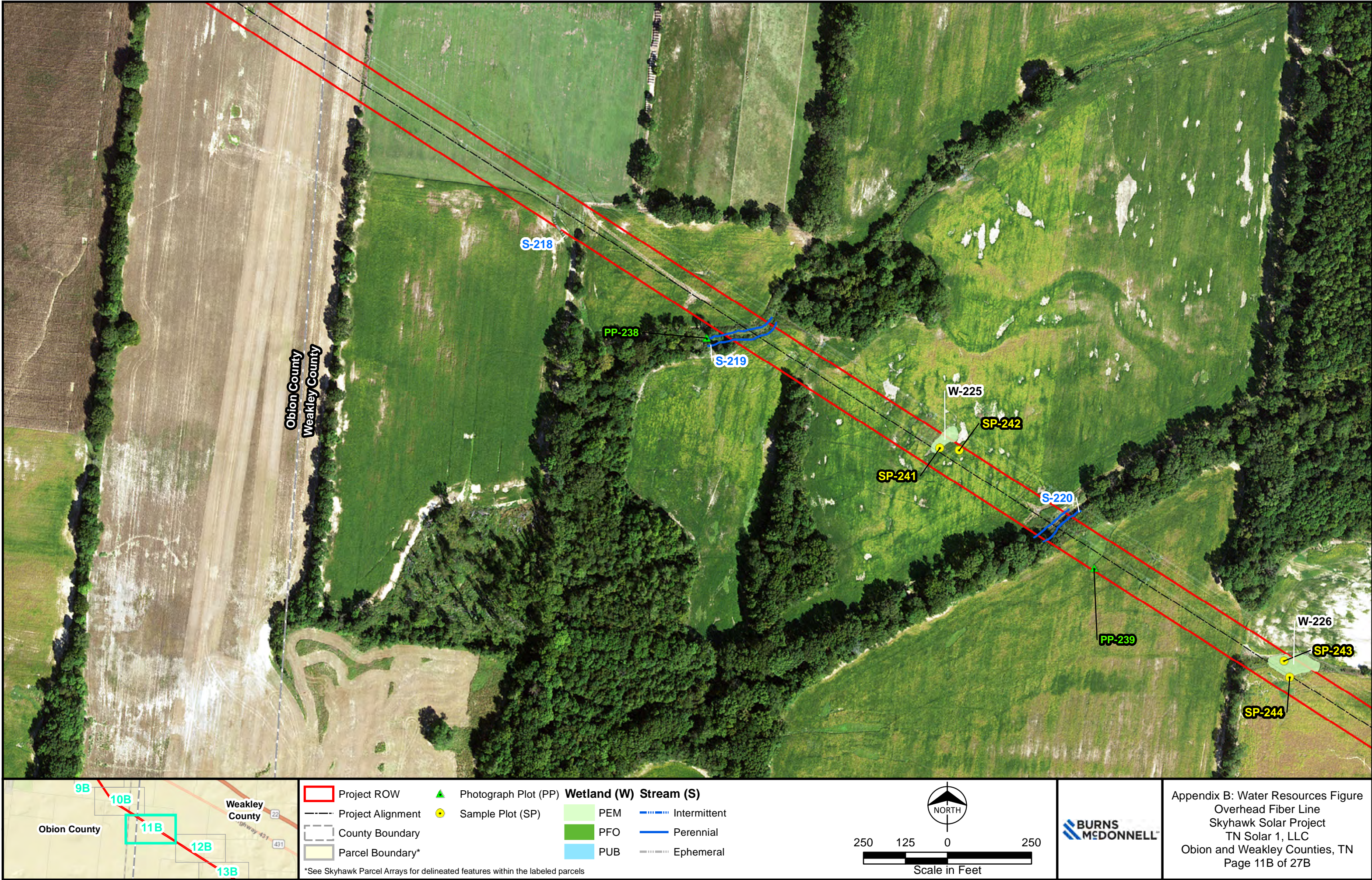


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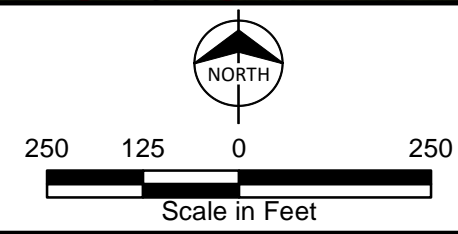
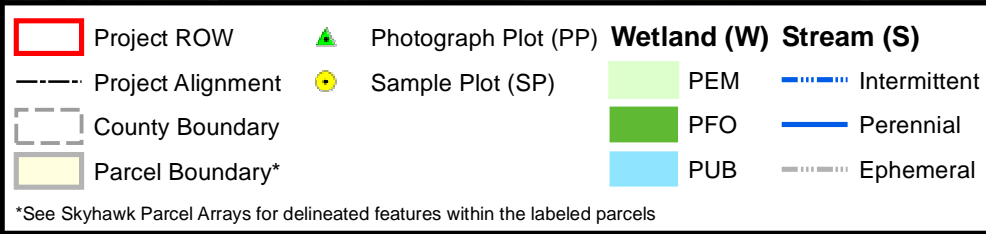
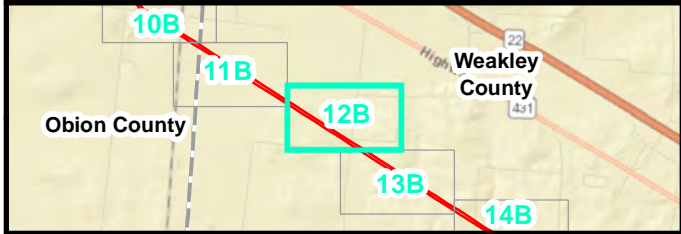


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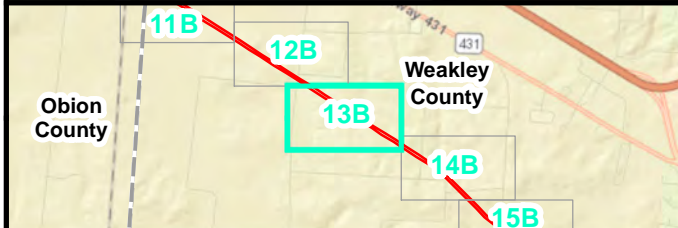
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
Parcel Boundary*		PUB	Ephemeral

\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

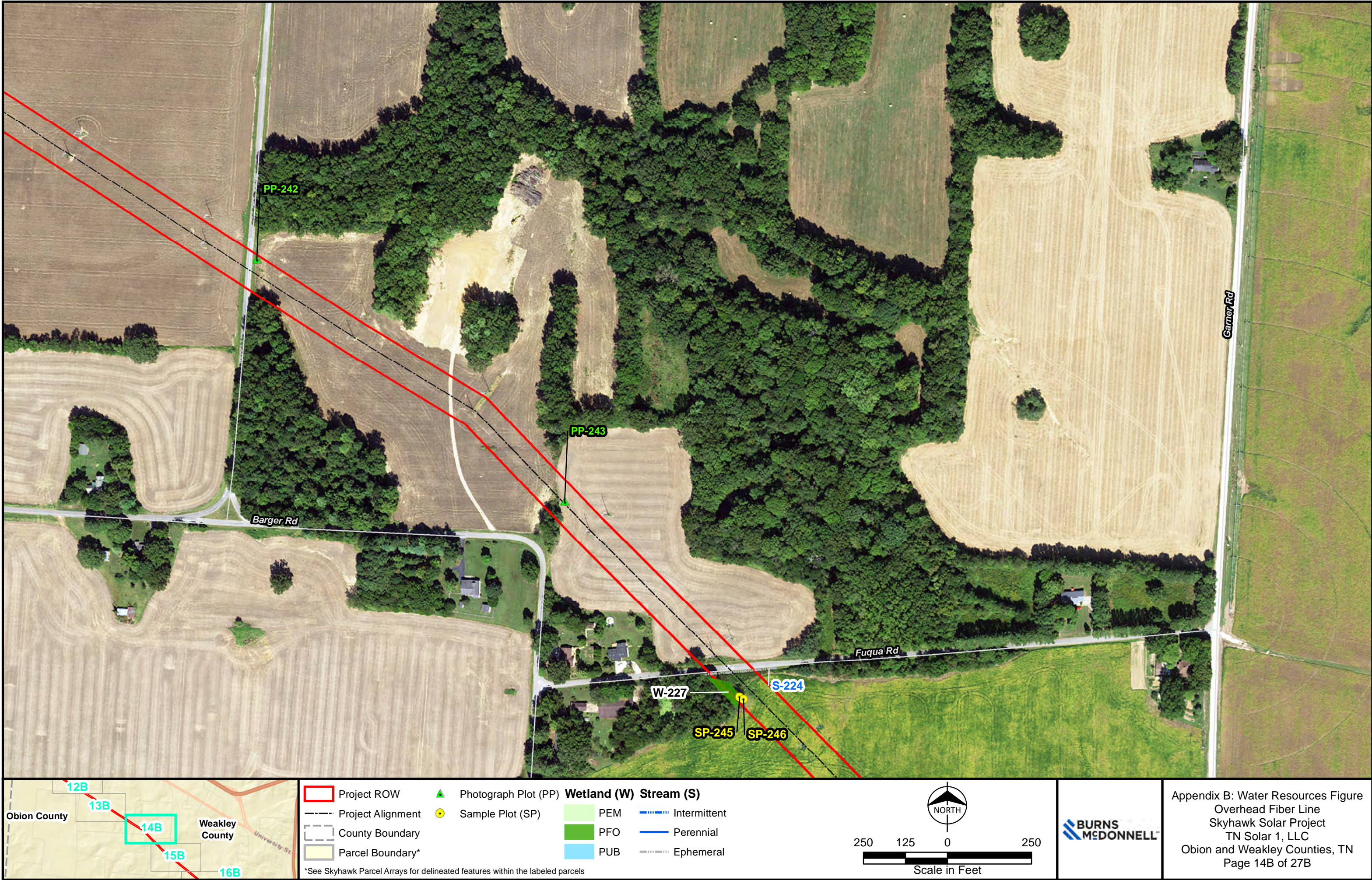
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 13B of 27B

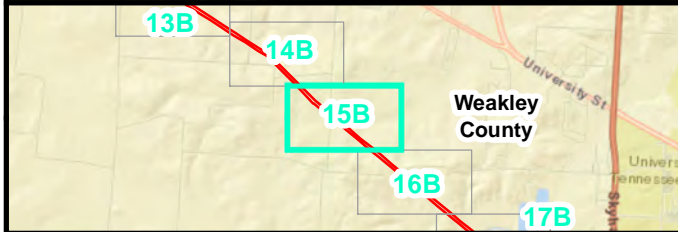
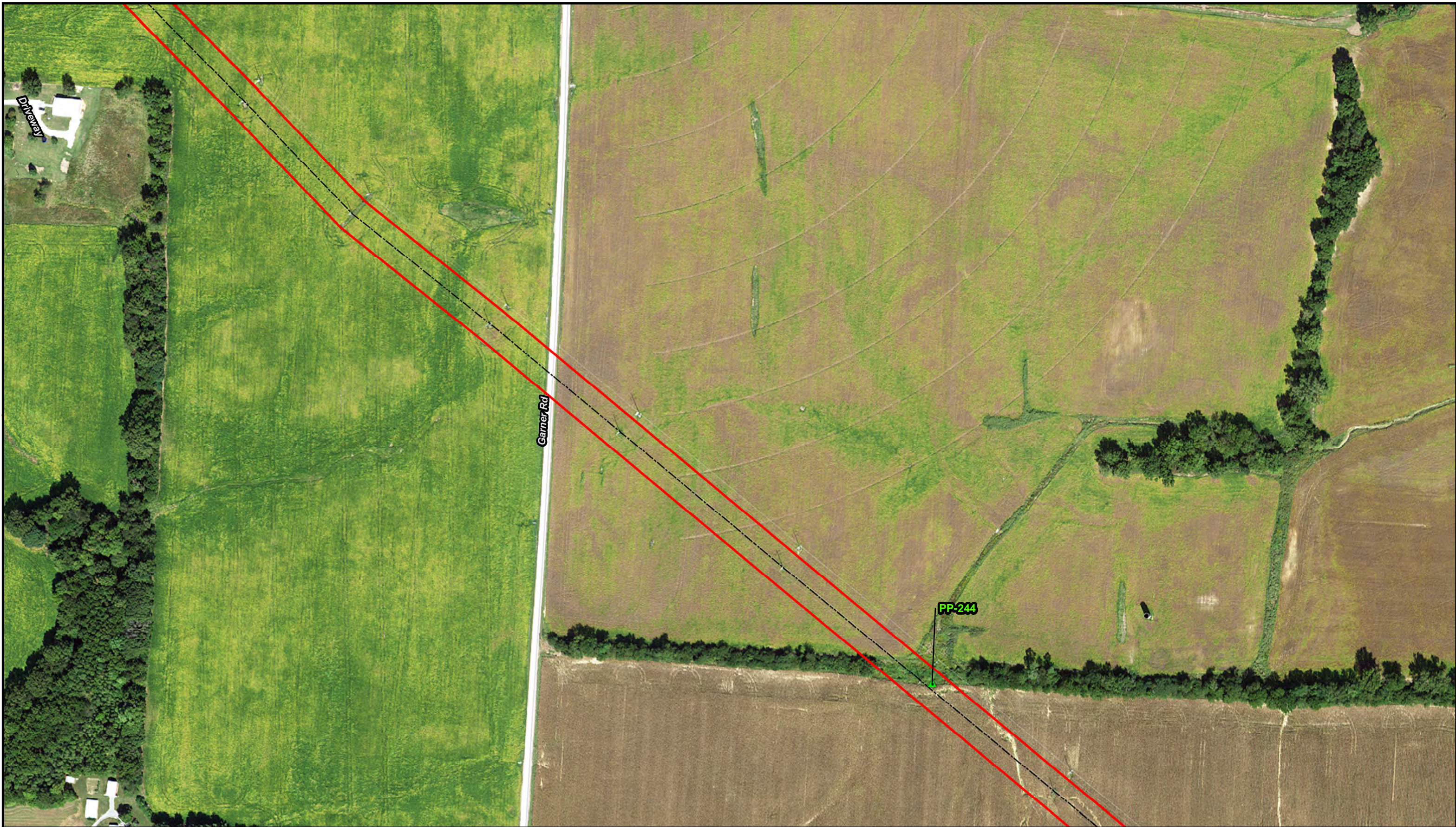


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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
Parcel Boundary*		PUB	Ephemeral

\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

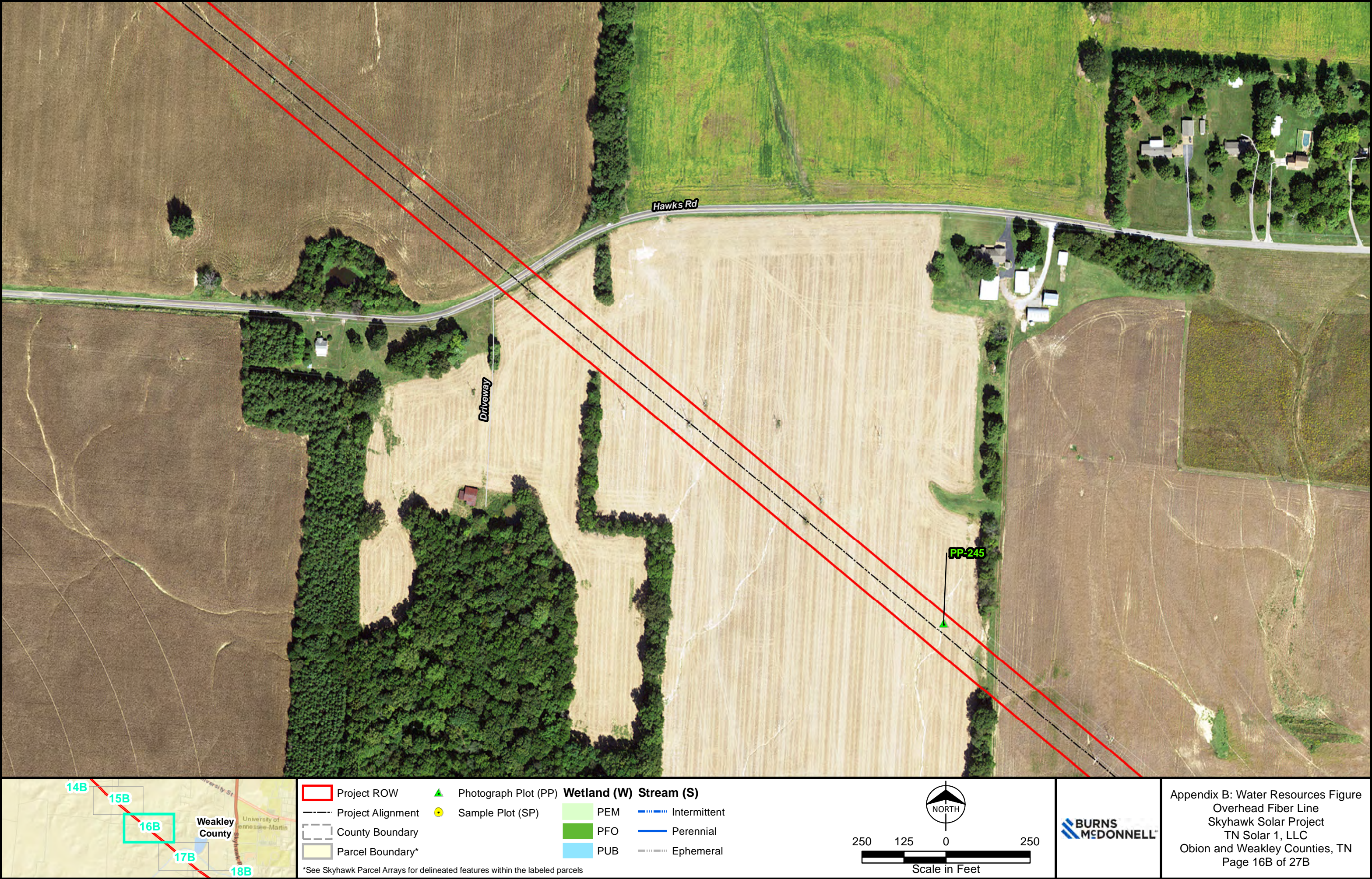
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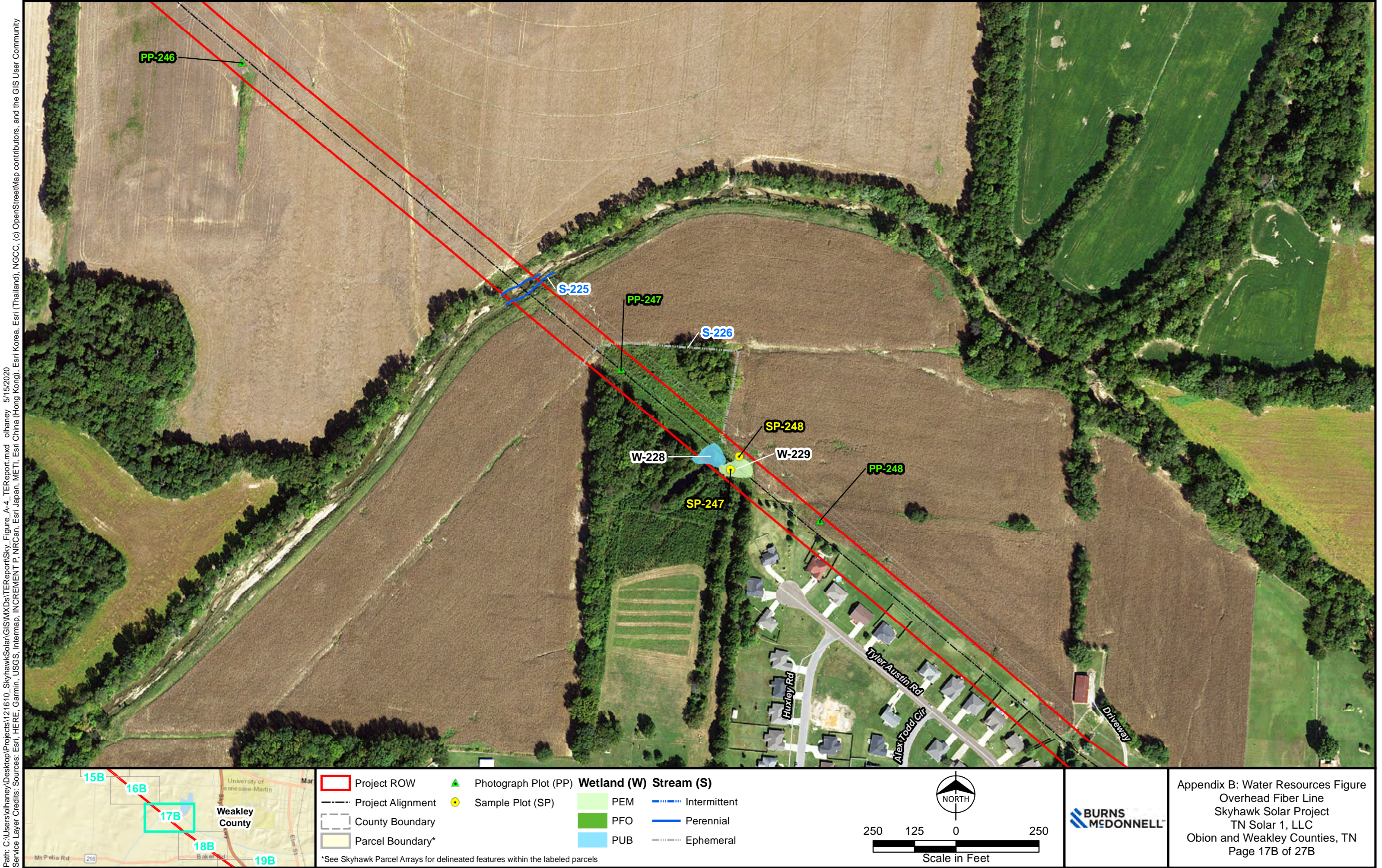
Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 15B of 27B



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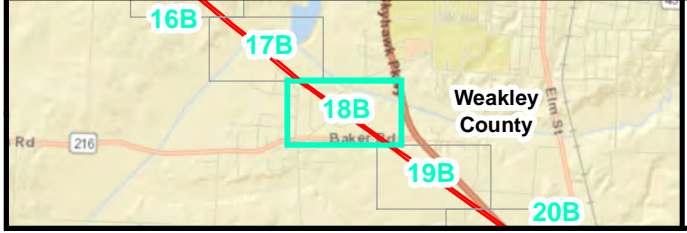
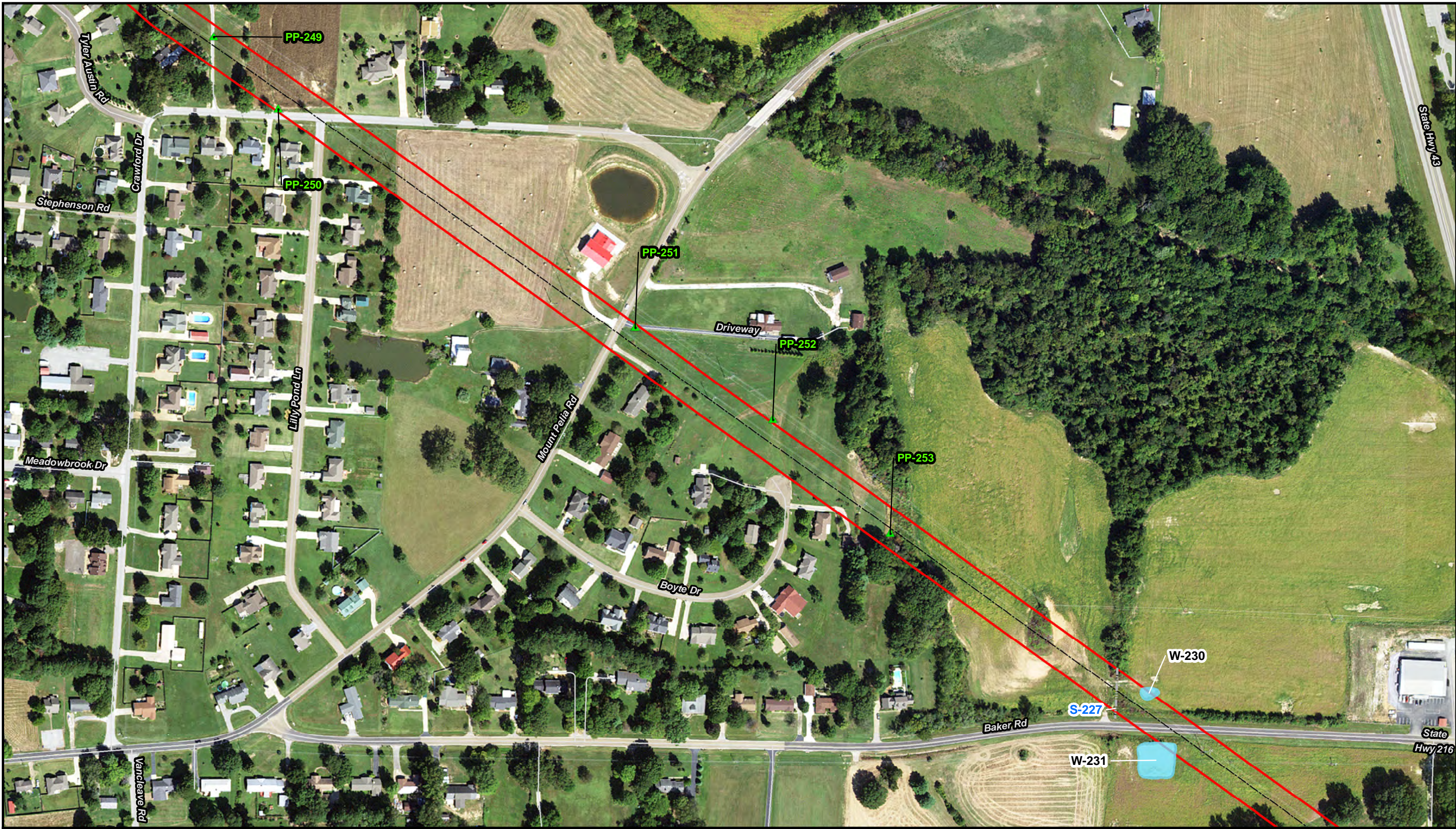








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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
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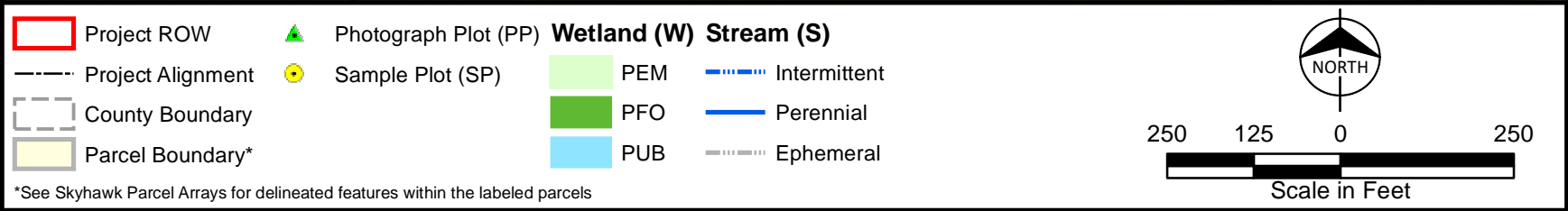
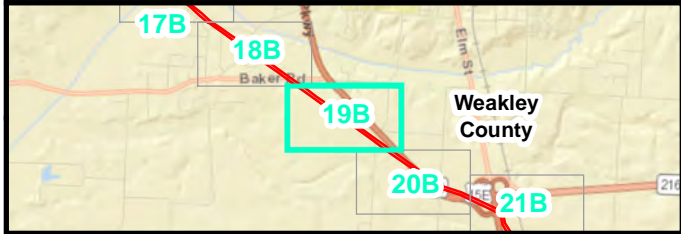
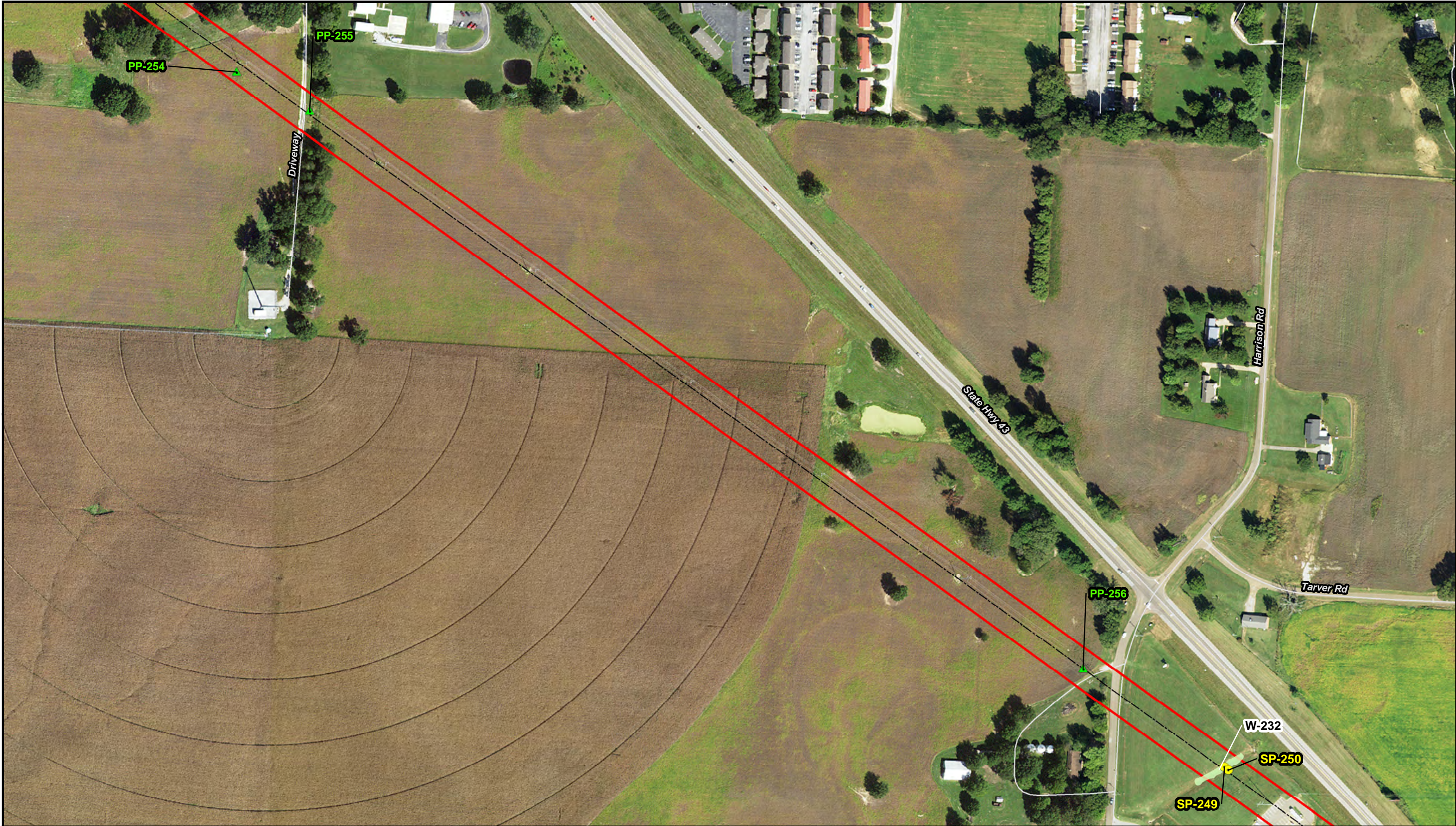
\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels

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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 18B of 27B



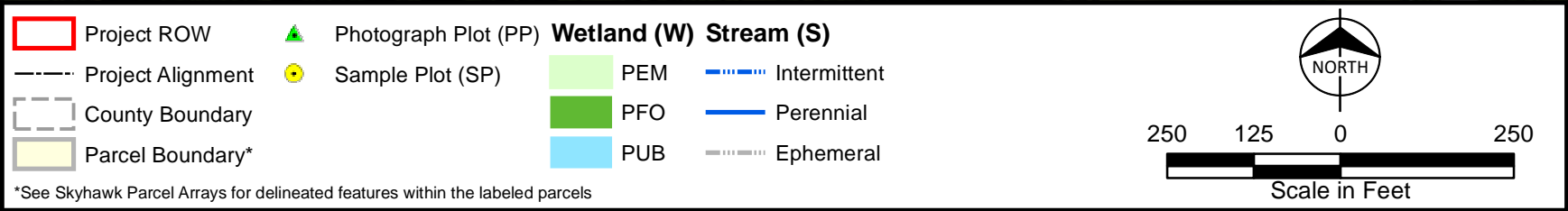
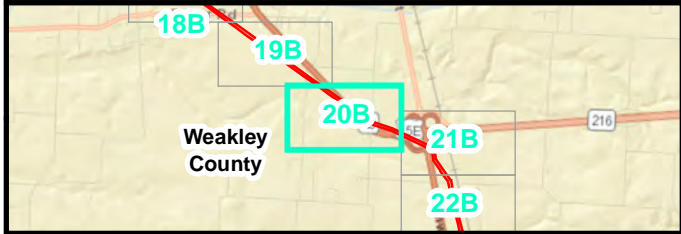
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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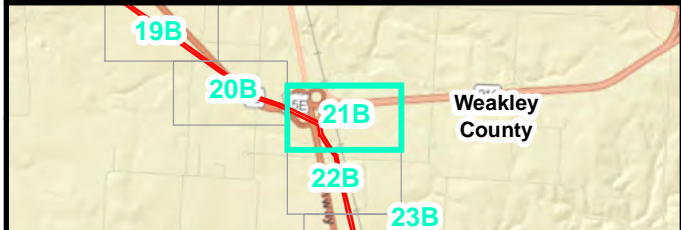
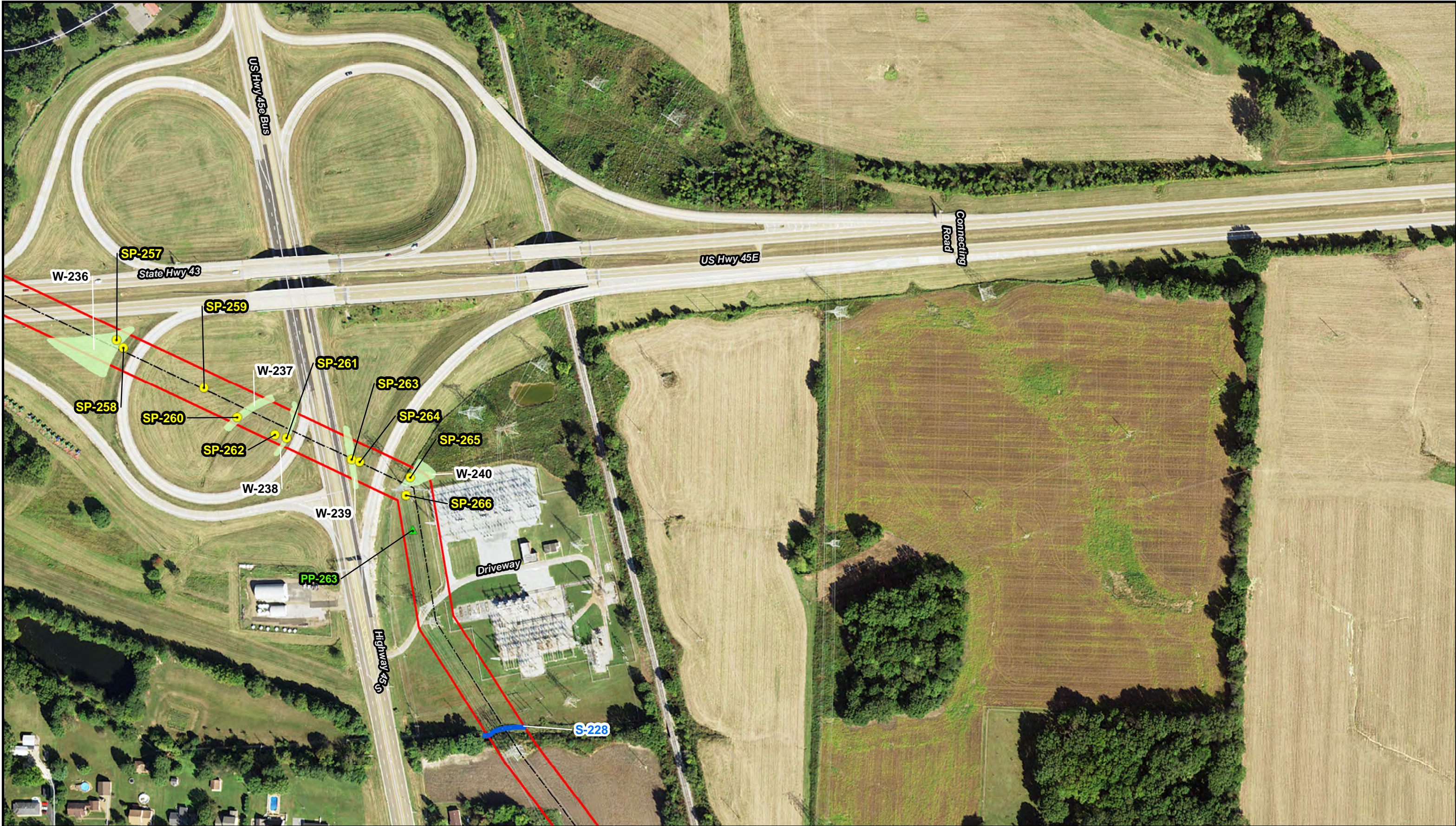
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Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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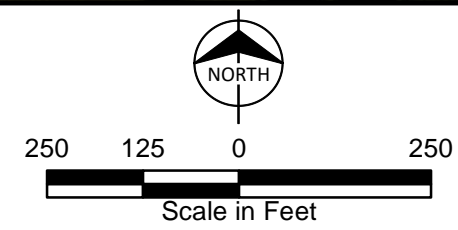


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Project ROW	Photograph Plot (PP)	<b>Wetland (W)</b>	<b>Stream (S)</b>
Project Alignment	Sample Plot (SP)	PEM	Intermittent
County Boundary		PFO	Perennial
Parcel Boundary*		PUB	Ephemeral

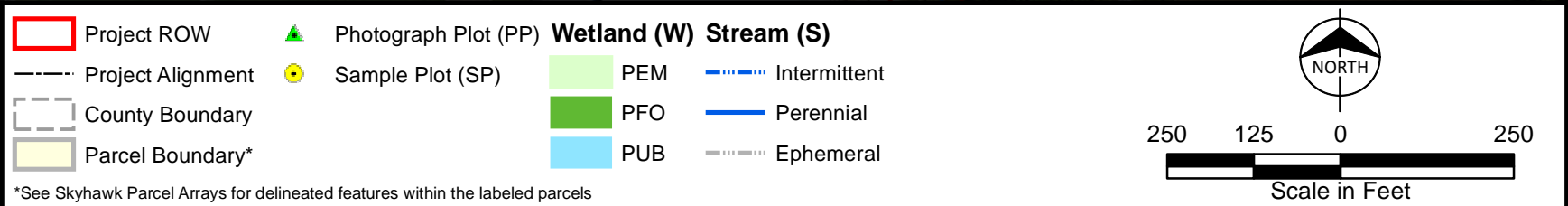
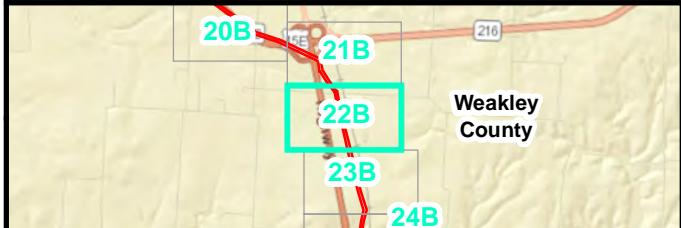
\*See Skyhawk Parcel Arrays for delineated features within the labeled parcels



Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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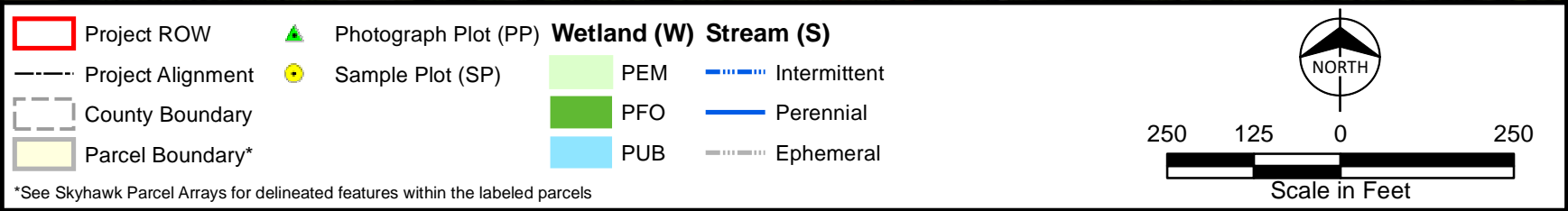
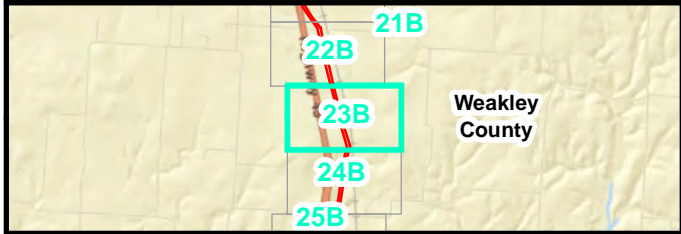
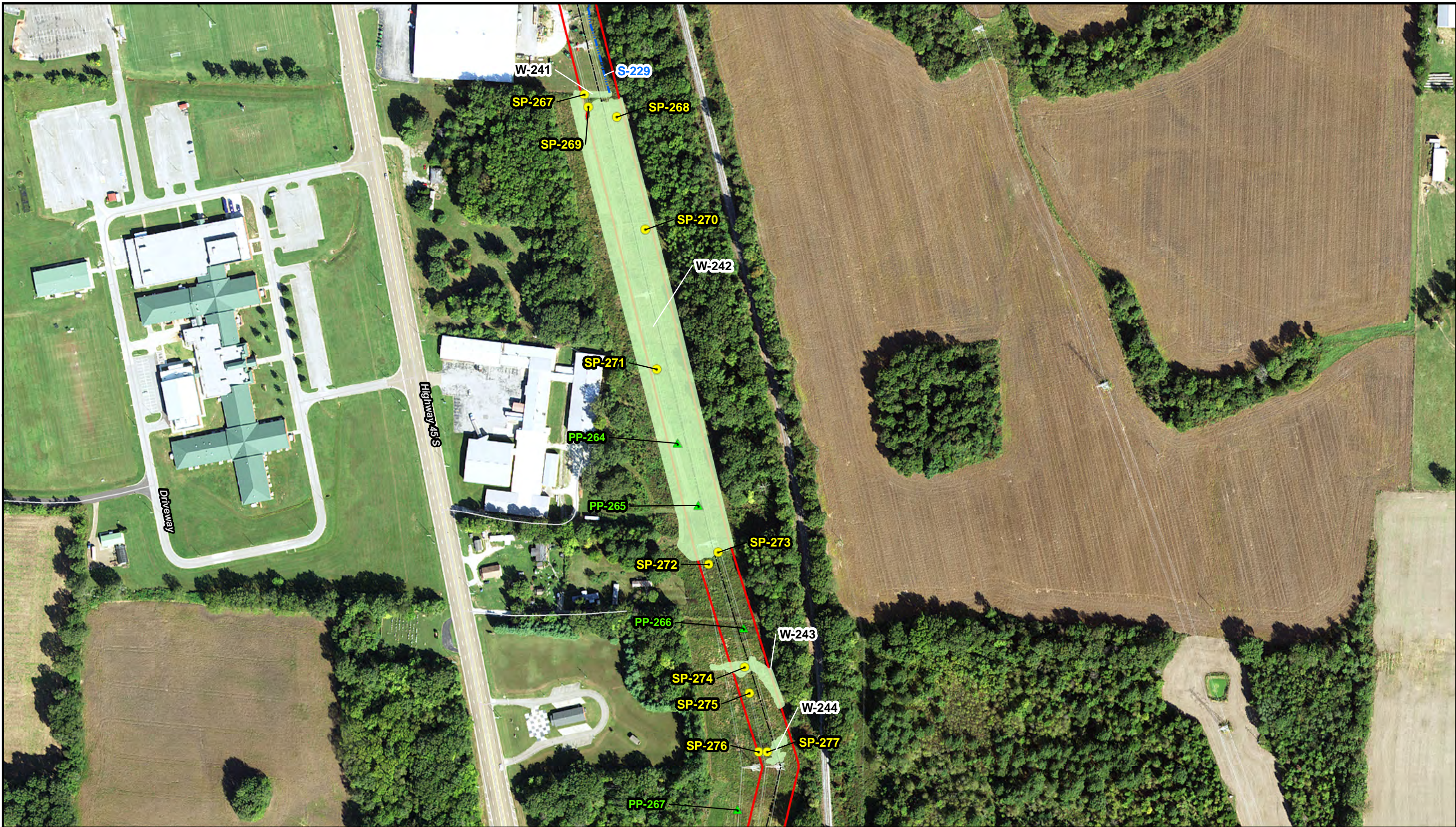
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Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Appendix B: Water Resources Figure  
Overhead Fiber Line  
Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 22B of 27B

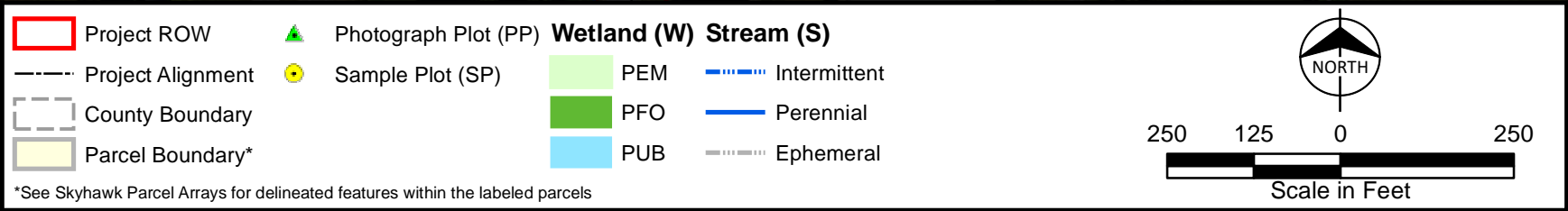
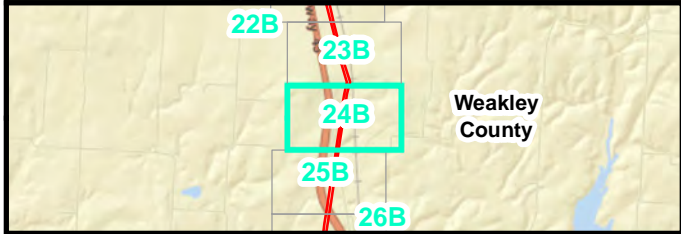
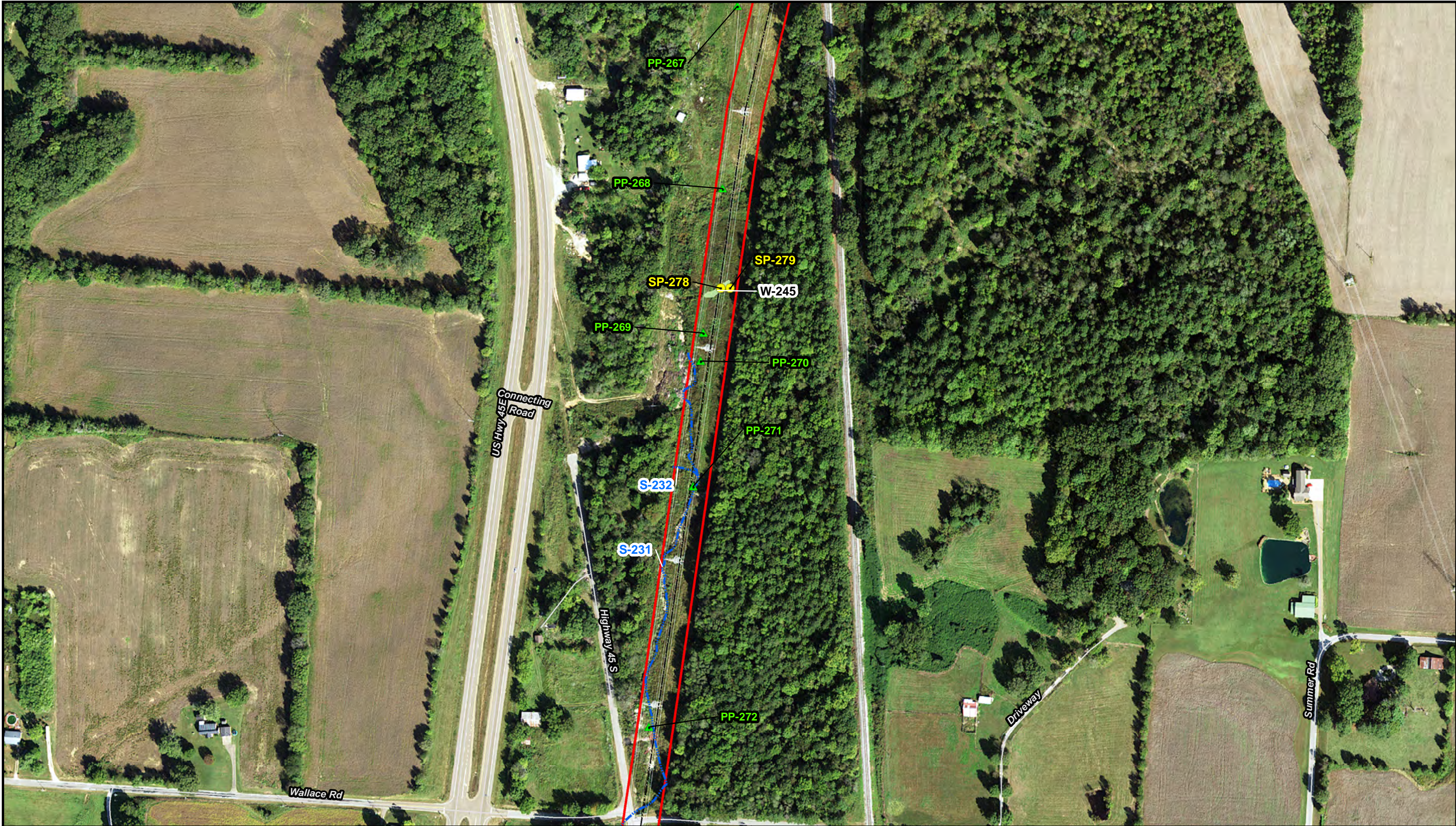


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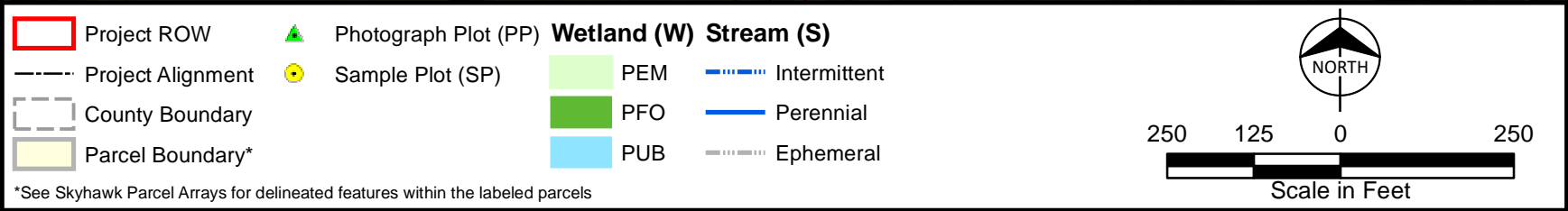
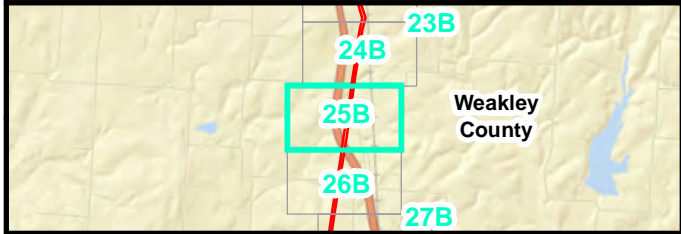
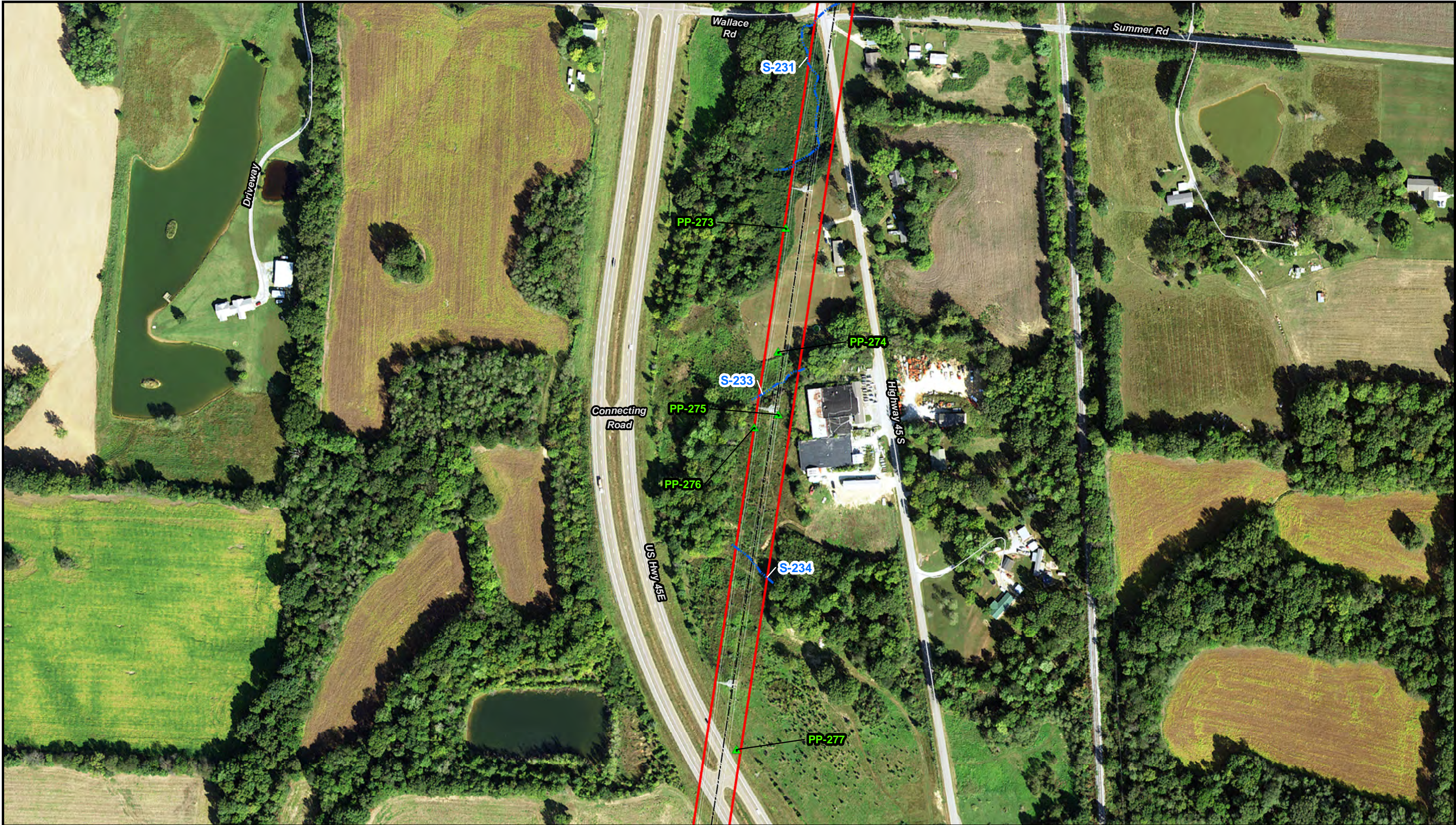
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Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Appendix B: Water Resources Figure  
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Skyhawk Solar Project  
TN Solar 1, LLC  
Obion and Weakley Counties, TN  
Page 24B of 27B



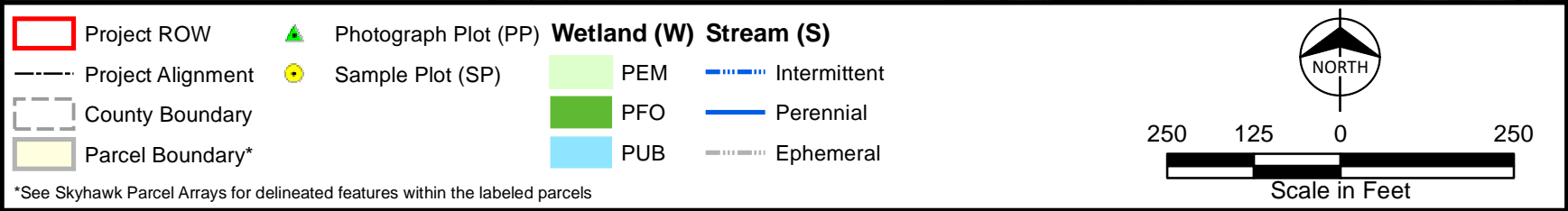
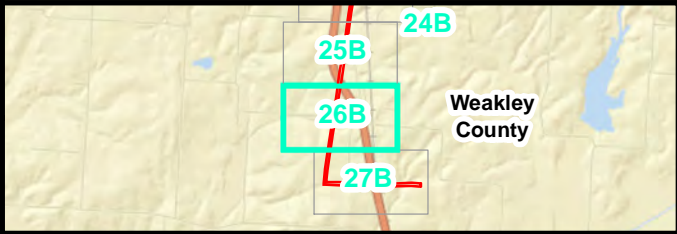
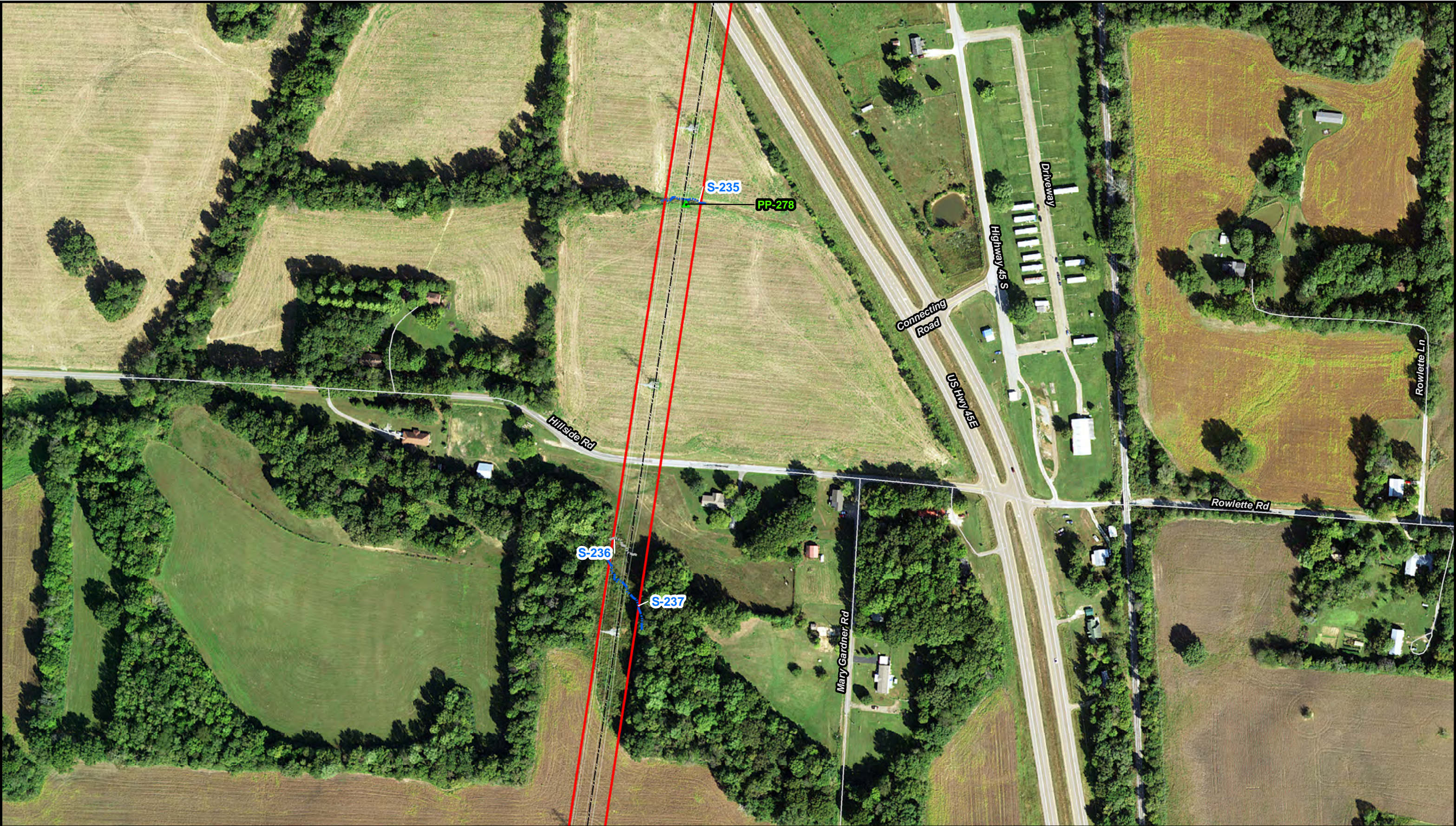
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Appendix B: Water Resources Figure  
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TN Solar 1, LLC  
Obion and Weakley Counties, TN  
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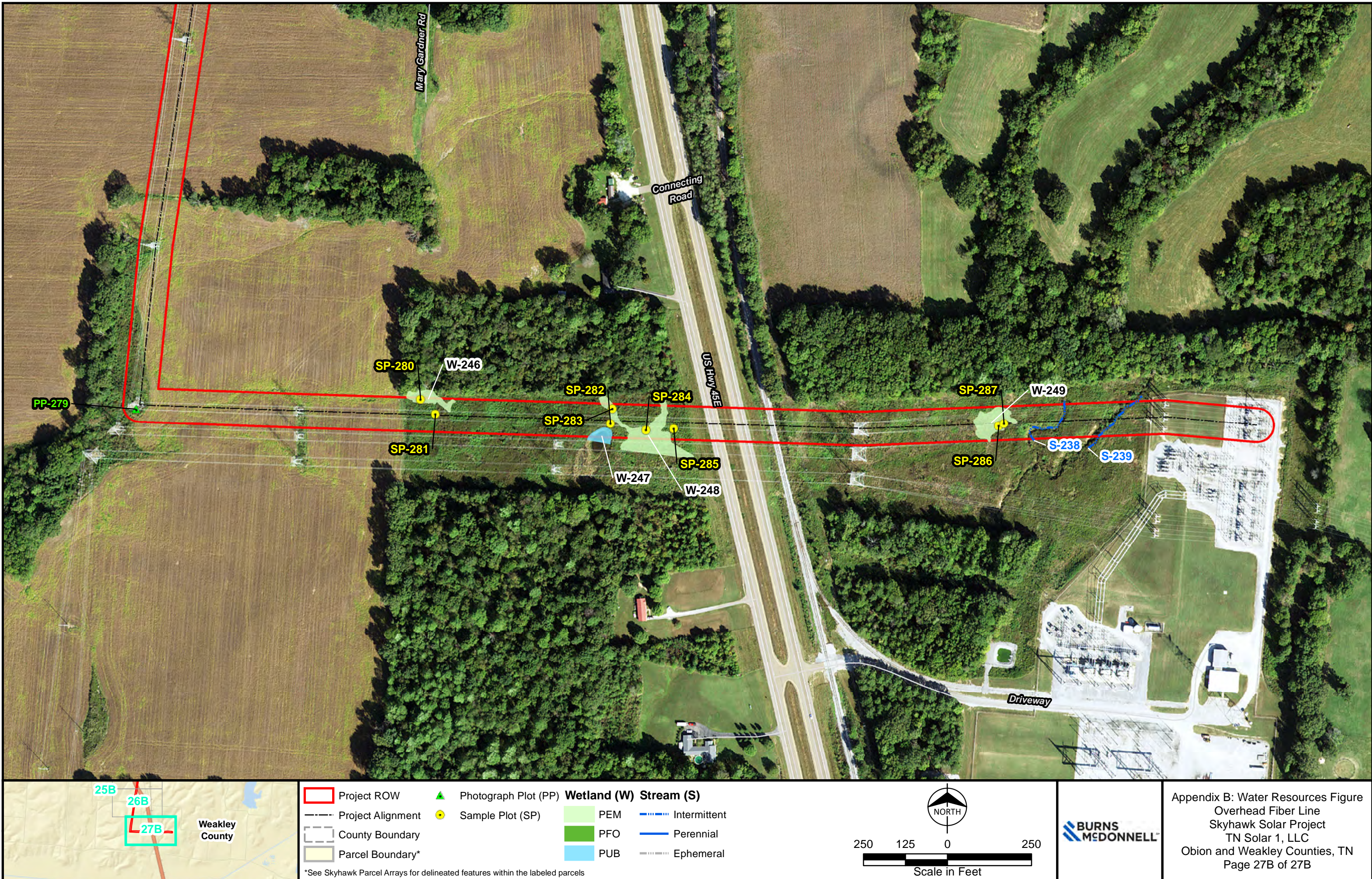
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**APPENDIX C – U.S. FISH AND WILDLIFE SERVICE INFORMATION FOR  
PLANNING AND CONSULTATION (IPAC) REPORTS**



## 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](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

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## Project Summary

Consultation Code: 04ET1000-2019-SLI-0908

Event Code: 04ET1000-2019-E-01786

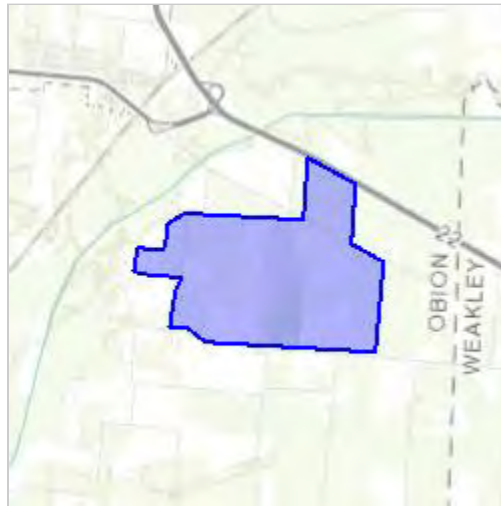
Project Name: Skyhawk Solar Project

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

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## 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<sup>1</sup>, 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 <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# 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:

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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
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# 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

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## 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

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## 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.

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## Mammals

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Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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## **APPENDIX F – ONSITE AND OFFSITE DRAINAGE REPORT**

# **ONSITE AND OFFSITE DRAINAGE REPORT**

## **Skyhawk Solar Project**

### **Obion County, Tennessee**

#### **PREPARED FOR**

**TN Solar 1, LLC**  
800 Bricknell Ave, Suite 1100  
Miami, Florida 33131  
Contact: Matthew Gomes  
Director of Development  
Origis Energy USA  
(786) 656 1385

#### **PREPARED BY**

**Kimley»Horn**

421 Fayetteville St., Suite 600  
Raleigh, NC 27601  
Contact: John Barefoot  
(919) 653-5843  
April 2020



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# 1 INTRODUCTION

## 1.1 PROJECT BACKGROUND

Kimley-Horn was retained by TN Solar 1, LLC to conduct a hydrologic analysis for the proposed solar photovoltaic (PV) generation facility Skyhawk Solar in Obion County, Tennessee (Figure 1). The project site is located approximately 5 miles southeast of Union City, Tennessee, neighboring the Everett-Stewart Regional Airport. This report summarizes the results of the existing conditions drainage analysis in and around the project site. The drainage analysis estimates the existing conditions 100-year flood and scour depths in and around the project site.

## 1.2 SITE DESCRIPTION

The project site is approximately 765 acres located in Obion County, Tennessee east of the North Fork Obion River. It is bounded by TN-22 to the north and River Road to the west. The existing site land cover consists primarily of agricultural land. The offsite areas included in the analysis are comprised of agricultural land, woody wetlands, and developed land.

The latest USGS Quad Map (Figure 8) shows one Unnamed Tributary to the North Fork Obion River passing through the site and discharging to the riparian wetland system east of the North Fork Obion River.

The project site is located within **FEMA FIRM Panels 47131C0219C, 47131C0240C, and 47183C0100D** (Figure 9). **FEMA unshaded Zone X** contains areas determined to be outside the 0.2% (500-year) annual chance floodplain. **FEMA Zone A** contains areas determined by FEMA to be inside the 1% annual chance special flood hazard area via Approximate or Limited Detail methods.

Most of the site lies within **FEMA Zone A** associated with the North Fork Obion River. The easternmost parcel of the project site is within **FEMA unshaded Zone X**.

The existing topography is generally moderately sloped with some steep areas. The slope ranges from 1 to 10 percent within most of the site, with slopes over 10 percent located along ridges and steeper channel banks. The majority of the site has less than a 3 percent slope. The elevation ranges from 290 to 342 feet, decreasing toward the north and west portions of the project site along the banks of the North Fork Obion River.

Kimley-Horn received survey of specific hydraulic structures within and adjacent to the project site from Survey and Mapping, LLC (SAM) on April 8, 2020. A total of 36 culvert locations were confirmed and measured during the site visit (Figure 3).

# 2 ENGINEERING METHODOLOGY

The project site is at risk from onsite flooding due to extreme onsite precipitation events and extreme riverine flooding from the North Fork Obion River. This analysis modeled an extreme 100-year precipitation event occurring over both the onsite area and the approximately 500 square mile watershed of the North Fork Obion River upstream of the project site. This methodology captures the initial flooding resulting from onsite precipitation as well as the later riverine flooding as the offsite precipitation flowing from the upstream watershed passes through the project site.



## **2.1 MODEL SELECTION**

The topography within the project site creates drainage patterns that vary in direction across the land surface outside of defined channels. Two-dimensional (2-D) hydrodynamic models are ideal for modeling the runoff and drainage patterns of flat areas without strong one-dimensional channel definition. Onsite modeling in this analysis utilizes the 2-D version of the U.S Army Corps of Engineers' Hydrologic Center River Analysis System (HEC-RAS) version 5.0.7.

The North Fork Obion River watershed as well as the smaller Harris Fork Creek and Grove Creek watersheds were modeled in HEC-HMS version 4.3 to generate a river hydrograph from each watershed.

## **2.2 MODEL TOPOGRAPHY AND EXTENTS**

The model topography is derived from LiDAR elevation data obtained from Tennessee Department of Finance and Administration website (Figure 2). All mapping was done using vertical datum NAVD 88. Onsite topography was used to define the onsite 2-D modeling boundary just beyond the estimated runoff boundary to allow the model to calculate the direction of runoff (Figure 3).

## **2.3 SOIL DATA**

The soil data obtained from the NRCS Web Soil Survey indicates the site is composed mostly of silt loam with assigned Hydrologic Soil Groups B, C, D, B/D, and C/D (Figure 6). Due to the extreme nature of the modeled 100-year rainfall event and the resulting inundation conditions that follow, soils with dual classification are assumed to be undrained and are modeled as group D. Assuming that the soils are undrained in the modeled scenario produces conservative runoff volumes and inundation depths.

## **2.4 PRECIPITATION**

The precipitation depth for the 24-hour, 1-percent (100-year) annual chance event was obtained from the NOAA Atlas 14 Precipitation-Frequency Estimates. The rainfall distribution hyetographs utilized for both offsite and onsite hydrology modeling were created by distributing the 24-hour rainfall total over the SCS Type II synthetic rainfall distribution curve. The SCS Type II distribution was selected based on geographic boundaries for SCS rainfall distributions provided in Appendix B of the USDA's Technical Release 55.

## **2.5 HYDROLOGIC ANALYSIS**

### *2.5.1 ONSITE HYDROLOGY*

Onsite hydrology was simulated as excess rainfall runoff applied directly to the onsite 2-D modeling area. The total 24-hour rainfall depth for the 100-year annual chance event is 7.76 inches. Kimley-Horn used the USACE's Hydrologic Modeling System software (HEC-HMS) version 4.3 to produce a timeseries of the precipitation excess from the rainfall distribution hyetograph. The precipitation excess timeseries is the amount of rainfall that is converted to runoff after subtracting the rainfall captured in microtopography on the surface and losses due to infiltration. Kimley-Horn used the Soil Conservation Service (SCS) curve number loss method within HEC-HMS to calculate the losses over the 2-D modeling area based on land cover and soil data. National Land Cover Database (NLCD) 2016 data and aerial imagery were used to delineate the existing land cover within the 2-D modeling area. The resulting precipitation excess timeseries was applied equally across the 2-D modeling area.

### 2.5.2 OFFSITE HYDROLOGY

Kimley-Horn modeled offsite runoff from the North Fork Obion River, Harris Fork Creek, and Grove Creek watersheds (Figure 3) using HEC-HMS version 4.3. Each watershed was divided using USGS HUC12 subbasins and then subdivided further to achieve drainage areas of roughly 20 square miles or smaller.

Each drainage area was assigned a total 24-hour rainfall depth and a resulting SCS rainfall distribution based on its specific location. Kimley-Horn used the SCS Unit Hydrograph Method within HEC-HMS to generate runoff hydrographs for each drainage area from the rainfall distributions. SCS curve numbers were calculated for each drainage area using a combination of the 2016 National Land Cover Database and Hydrologic Soil Groups from USDA Web Soil Survey. Kimley-Horn used a frequency storm precipitation model within HEC-HMS for this analysis. Drainage area lag times were calculated using the Folmar and Miller method, which was developed for drainage areas up to 20 square miles.

HEC-HMS uses the Muskingum-Cunge method to route the runoff hydrographs from each drainage area through the downstream channels to the onsite 2-D modeling area. The Muskingum-Cunge method is based on general channel characteristics and slopes along each channel. Kimley-Horn used publicly available USGS topographic data to calculate the required channel information.

The three resulting offsite hydrographs for the North Fork Obion River, Harris Fork Creek, and Grove Creek watersheds were validated using USGS gage data and two regulatory FEMA Flood Insurance Study discharges.

The resulting offsite hydrograph for the North Fork Obion River was compared to USGS gage 07025400 on the North Fork Obion River. The USGS gage contained a record of over 50 years of annual peak streamflow records and 20 years of hourly streamflow data. The gaged streamflow data in conjunction with nearby daily precipitation records demonstrated that the resulting offsite hydrograph from HEC-HMS reasonably estimates the peak discharge for a 100-yr event.

The resulting offsite hydrographs for the Harris Fork Creek and Grove Creek were compared to FEMA FIS report 47131CV000A, which contains a Summary of Discharges derived from regression equations. The summary of discharges demonstrated that the resulting offsite hydrographs from HEC-HMS reasonably estimate the peak discharges for a 100-yr event.

The three resulting offsite hydrographs were applied as boundary conditions to the 2-D modeling area.

**Table 1: Upstream Drainage Area Summary**

Location	Drainage Area (mi <sup>2</sup> )	Peak Flow (cfs)
North Fork Obion River	425.8	29,304
Grove Creek	14.2	5,599
Harris Fork Creek	48.5	14,430



## 2.6 HYDRAULIC ANALYSIS

In HEC-RAS, the 2-D modeling boundary was divided into a 2-D computational grid with a maximum cell size of 200-feet (Figure 3). The LiDAR-derived model terrain surface was used to develop a family of rating tables for the stage storage volume in each computational grid cell. HEC-RAS defines cross sections at each cell face of the computational grid to more accurately simulate flow between cells.

The computational grid was further refined by adding breaklines to subdivide cells along important hydraulic features such as channels, culverts, roads, and berms (Figure 3). The minimum computational grid cell size along breaklines is 4 feet.

Culvert measurements received from survey were incorporated into the 2-D hydraulic model. Survey information was used to assign Manning's  $n$ , entrance loss, and exit loss values during the modeling process. Aerial imagery and LiDAR was referenced to assign culvert lengths and invert elevations. Several structures that were not measured during survey are also included in the model, estimated from publicly available data.

Roughness coefficients were applied to the grid to account for energy losses to water flow due to friction based on existing landcover data.

Outflow boundary conditions for the model were defined at the boundary of the 2-D computational grid. The boundary condition type was set to normal depth and assigned a friction slope ranging from 0.03 to 0.2 percent.

## 2.7 INUNDATION DEPTH CALCULATION SUMMARY

Predicted inundation depths for existing conditions are calculated based on the 2-D modeling simulation and are mapped within the study area. Results are shown in Figure 5. The mapping reflects depths that are expected to equal or exceed 0.25 feet. The direct rainfall method produces depth in every grid cell of the mesh. Shallower depths are removed from the mapping as is typically done for models based on the direct rainfall method.

The inundation depths on the project parcels range from 0 to 8 feet, with a very localized maximum of 16 feet in the very northwestern corner of the northwestern parcel. The regions with over 2 feet of expected depth are mostly restricted to channels, established FEMA flood zones, areas associated with backwater from the North Fork Obion River, or areas that are impounded by a downstream change in elevation.

## 2.8 SCOUR DEPTH CALCULATION SUMMARY

Pier scour depth is calculated within the project parcels using guidance in *HEC-18: Evaluating Scour at Bridges, Fifth Edition* (FHWA, 2012). The calculated pier scour depth is based on the modeled maximum flow velocity and maximum flow depth. While the flow depth and flow velocity may not reach their maximum levels at the same time and location, this assumption produces a conservative estimate of scour for the entire site. The model indicates portions of the site will experience potential scour depths in excess of one foot, generally along defined flow paths (channels and draws). Anticipated scour depths within the project parcels are shown in Figure 6.

# 3 CONCLUSIONS

The inundation depths generally range from 0 to 8 feet in most areas onsite. The deepest

inundation is shown within the northern parcels and is associated with overtopping from the North Fork Obion River that backs up through the parcels. Areas of greater inundation within the southern parcels are generally associated with existing onsite channels and local depression ponding.

Recommendations:

- Based on this analysis, we recommend primarily focusing array development on the southern parcels due to the lesser inundation depths and extents within those parcels relative to the 2 northern parcels. If additional area is needed, the northeastern parcel may offer some developable area based on lesser inundation depths relative to the northwestern parcel.
- Based on this analysis, we recommend final system design consider placing equipment outside of areas with inundation depths exceeding 1 foot or provide countermeasures. Countermeasures may include extending posts to elevate equipment or installing additional culverts to provide inundation relief.
- Based on this analysis, we recommend final system design consider placing equipment outside of areas with probable scour depths exceeding 1 foot or provide countermeasures. Countermeasures may include extending posts deeper or applying erosion control matting.



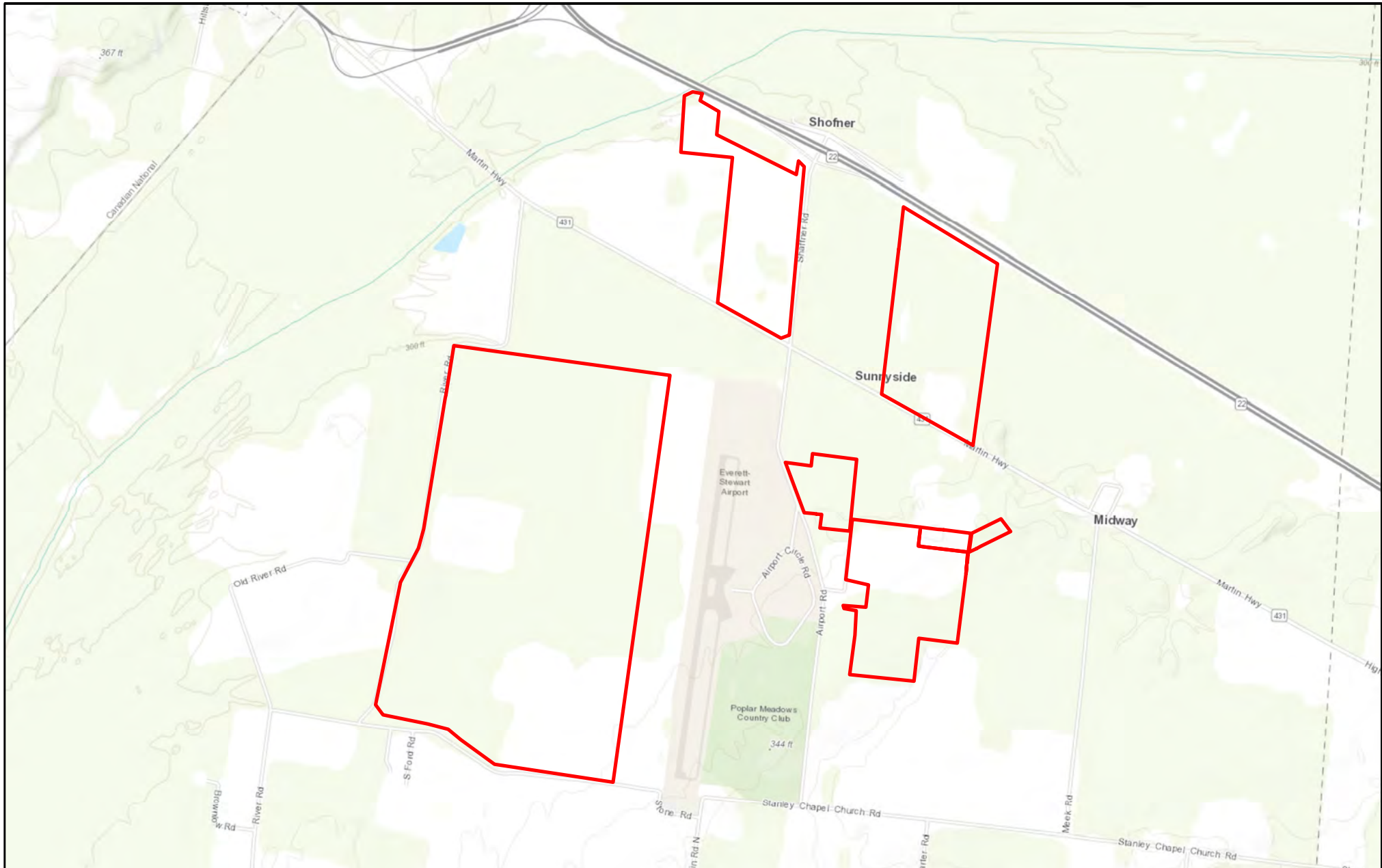
## 4 REFERENCES

- Chow, V.T., 1959. Open Channel Hydraulics. McGraw-Hill, New York.
- Cook, L.M. and McCuen, R.H. (2013). Hydrologic Response of Solar Impacts. Journal of Hydrologic Engineering, 18(5), 536-541.  
<http://ascelibrary.org/doi/abs/10.1061/%28ASCE%29HE.1943-5584.0000530?journalCode=jhyeff&>
- Folmar, N.D., and A.C. Miller. 2008. Development of an empirical lag time equation. Amer. Soc. of Civil Eng. Journal of Irrigation and Drainage. Vol. 134, No. 4.  
<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=27002.wba>
- NOAA Atlas 14, Point Precipitation Frequency (PF) Data Server, visited on February 17, 2020.  
<https://hdsc.nws.noaa.gov/hdsc/pfds/>
- U.S. Army Corps of Engineers (USACE, 2016). 2016. CPD-68: HEC-RAS River Analysis System User's Manual  
<http://www.hec.usace.army.mil/software/hec-ras/documentation/HEC-RAS%205.0%20Users%20Manual.pdf>
- U.S. Army Corps of Engineers (USACE, 2016). 2016. CPD-68A: HEC-RAS River Analysis System 2D Modeling User's Manual  
<http://www.hec.usace.army.mil/software/hec-ras/documentation/HEC-RAS%205.0%202D%20Modeling%20Users%20Manual.pdf>
- U.S. Army Corps of Engineers (USACE, 2016). 2016. CPD-70: HEC-RAS River Analysis System Application Guide  
<http://www.hec.usace.army.mil/software/hec-ras/documentation/HEC-RAS%205.0%20Applications%20Guide.pdf>
- U.S. Army Corps of Engineers (USACE, 2018). 2018. CPD-74A: Hydrologic Modeling System HEC-HMS User's Manual  
[https://www.hec.usace.army.mil/software/hec-hms/documentation/HEC-HMS\\_Users\\_Manual\\_4.3.pdf](https://www.hec.usace.army.mil/software/hec-hms/documentation/HEC-HMS_Users_Manual_4.3.pdf)
- U.S. Department of Agriculture (USDA, 1986). 1986. TR-55: Urban Hydrology for Small Watersheds  
[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1044171.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf)
- U.S. Department of Agriculture, Natural Resources Conservation Service. Part 654 Stream Restoration Design National Engineering Handbook. Chapter 8, Threshold Channel Design. August 2007.
- U.S. Department of Agriculture, Natural Resources Conservation Service. Part 630 Hydrology National Engineering Handbook Chapter 15, Time of Concentration. May 2010.  
<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=27002.wba>
- U.S. Department of Transportation. Federal Highway Administration (2012). Evaluating Scour at Bridges Fifth Edition (Publication No. FHWA-HIF-12-003)  
<https://www.fhwa.dot.gov/engineering/hydraulics/pubs/hif12003.pdf>
- Yang, L., Jin, S., Danielson, P., Homer, C.G., Gass, L., Bender, S.M., Case, A., Costello, C., Dewitz, J.A., Fry, J.A., Funk, M., Granneman, B.J., Liknes, G.C., Rigge,

M.B., and Xian, G., 2018, A new generation of the United States National Land Cover Database—Requirements, research priorities, design, and implementation strategies: ISPRS Journal of Photogrammetry and Remote Sensing, v. 146, p. 108–123, at <https://doi.org/10.1016/j.isprsjprs.2018.09.006>.



## Appendix A – Figures



**Figure 1:  
Site Location Map**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County

Tennessee



**Legend**

Project Area



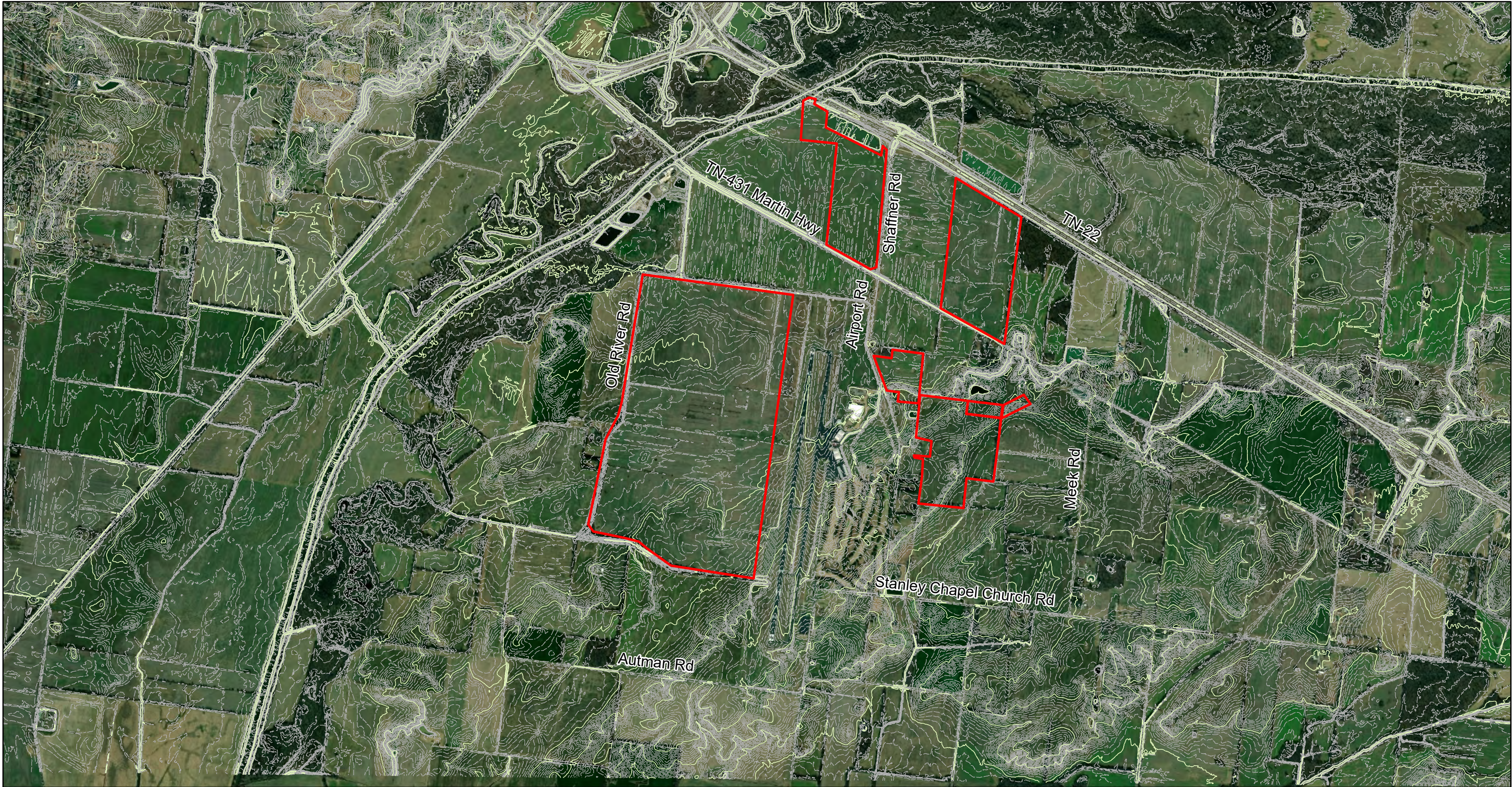
0 1,000 2,000  
Feet

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**April 2020**





**FIGURE 2**  
**TOPOGRAPHIC WORK MAP**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County      Tennessee

**Legend**

- Site Boundary
- Contours - Major (10 ft)
- Contours - Minor (1 ft)



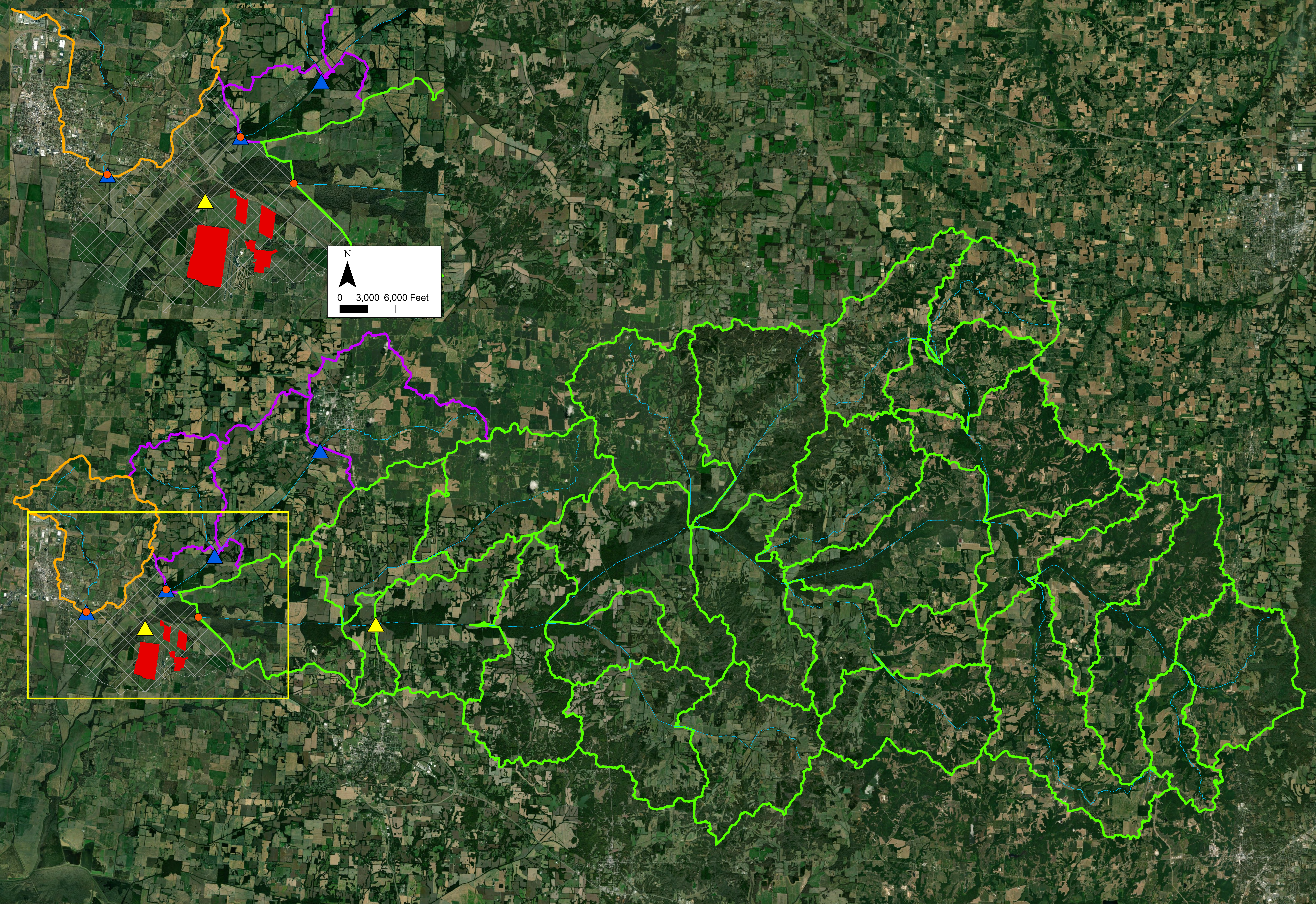
0      1,000      2,000 Feet

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**Kimley»Horn**

**April 2020**





**FIGURE 3  
DRAINAGE AREA MAP**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County      Tennessee

**Legend**

	Site Boundary
	2D Model Area
	Obion River Drainage Area
	Grove Creek Drainage Area
	Harris Fork Creek Drainage Area

**Calibration Points**

	Inflow Boundary Conditions
	FEMA FIS Regression Values
	USGS Stream Gauge

N

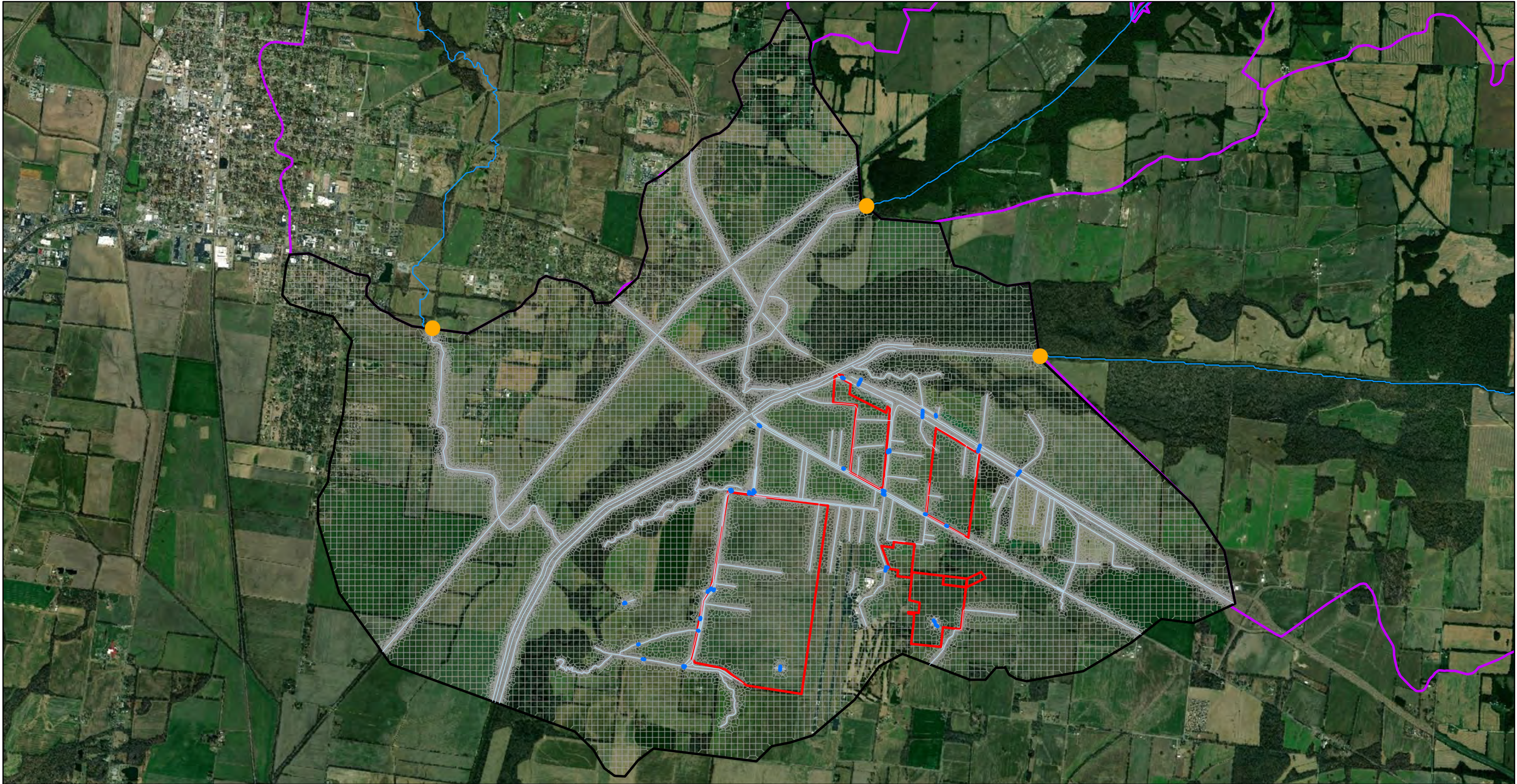
0 5,000 10,000 Feet

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Kimley»Horn

April 2020












**FIGURE 4**  
HEC-RAS STUDY MAP

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County      Tennessee

**Legend**

- |  |   |
|--|---|
|  Site Boundary    |  Contributing Drainage Areas |
|  2-D Boundary     |  Inflow Hydrograph Locations |
|  2-D Mesh Grid    |   |
|  Modeled Culverts |   |
|  Break Lines      |   |



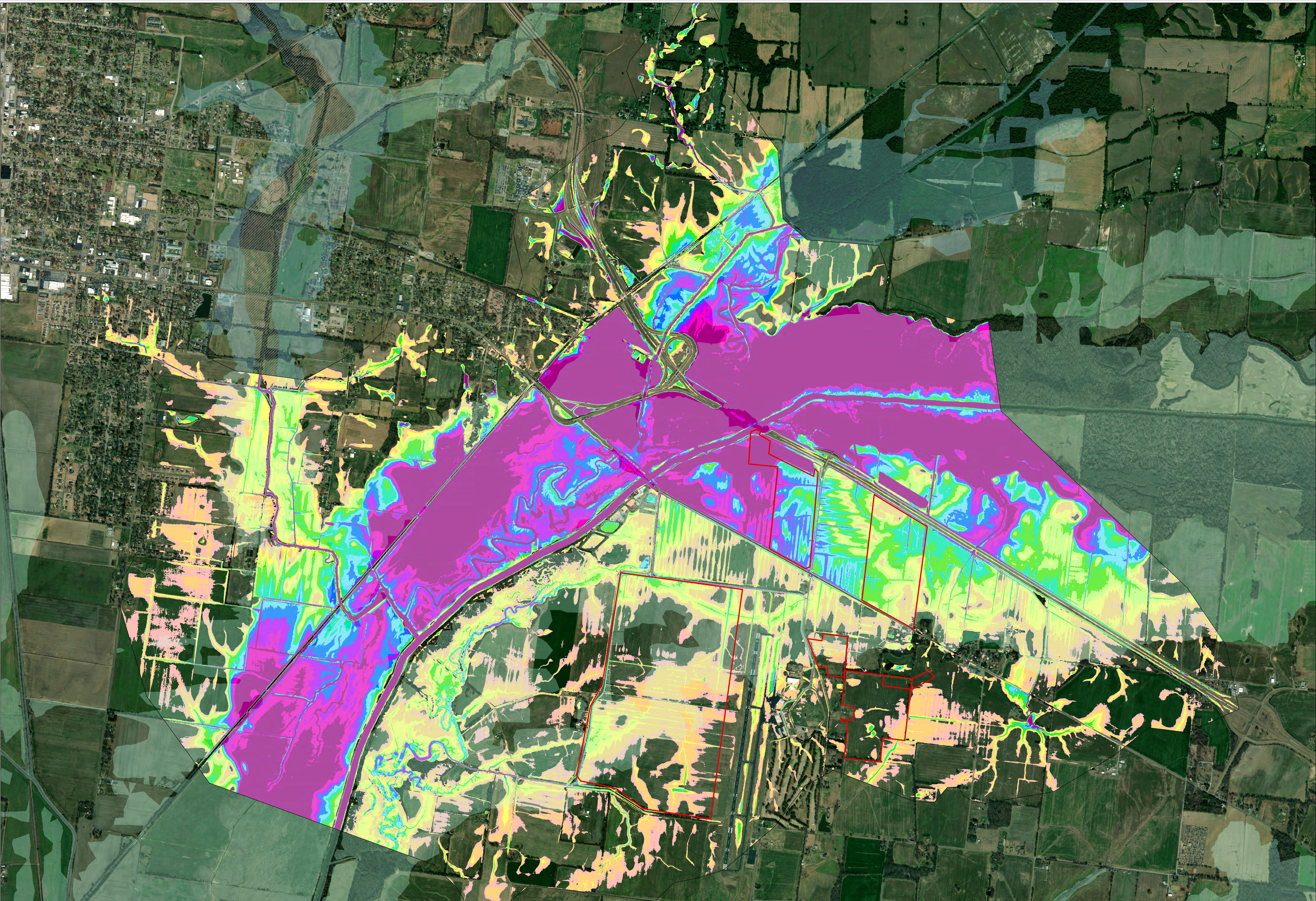
0      1,500      3,000 Feet

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**FIGURE 5**  
**PRE-DEVELOPMENT**  
**100-YEAR DEPTH MAP**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County

Tennessee

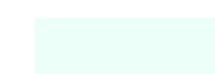
**Legend**



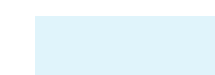
Site Boundary



2-D Boundary



FEMA Zone A



FEMA Zone AE



FEMA Floodway

**Inundation Depth (ft)**

0.25 - 0.5

0.5 - 1

1 - 1.5

1.5 - 2

2 - 2.5

2.5 - 3

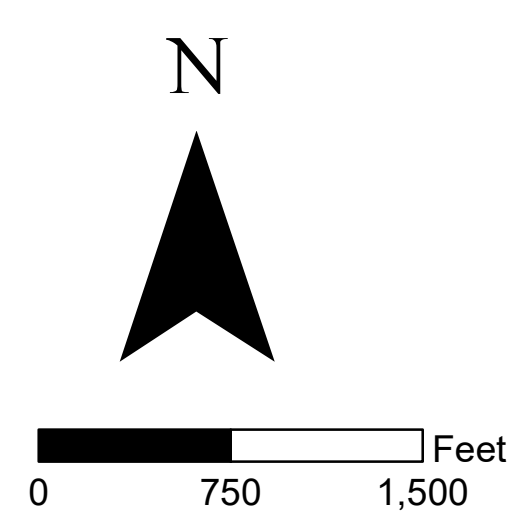
3 - 3.5

3.5 - 4

4 - 4.5

4.5 - 5

> 5

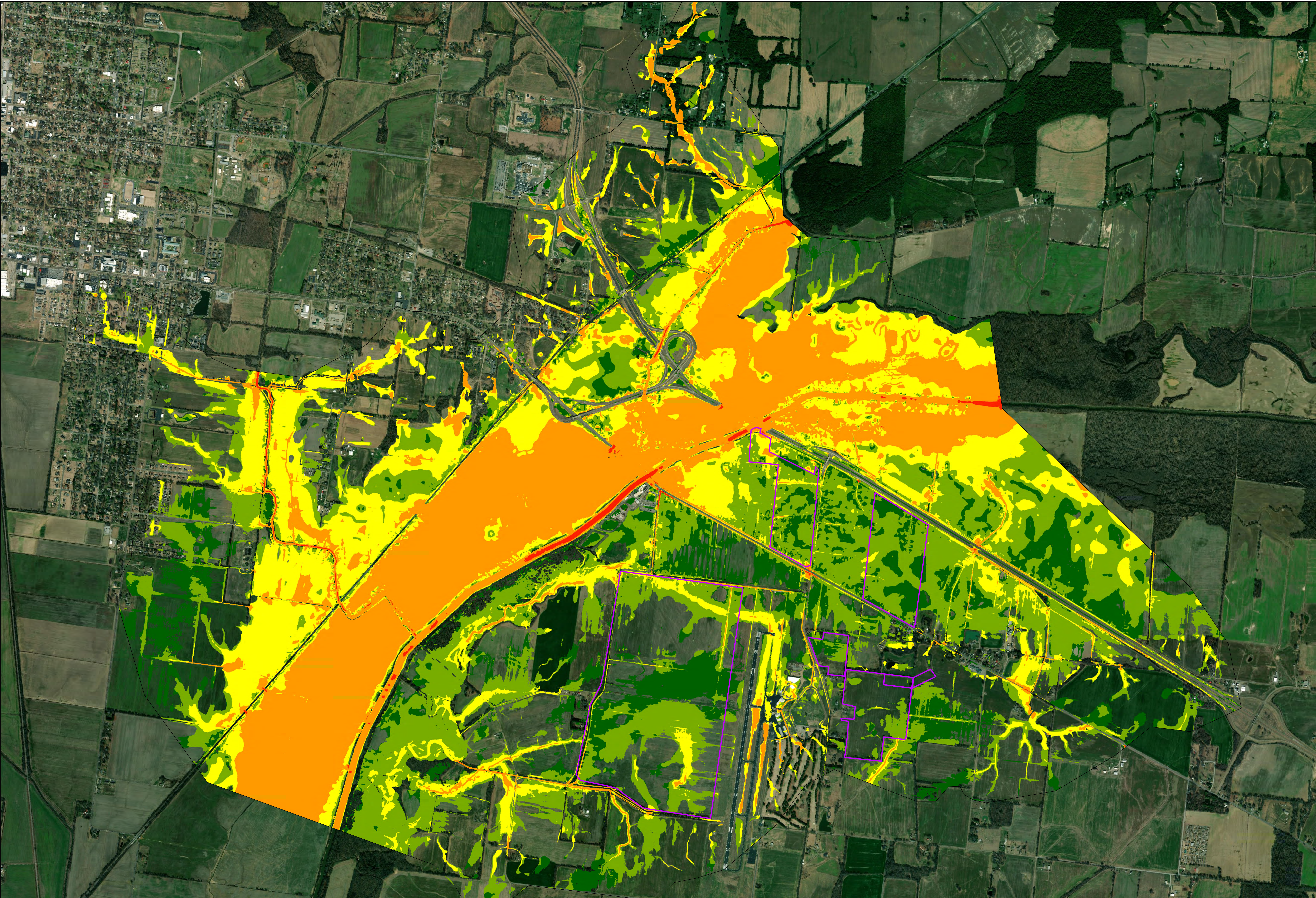


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**FIGURE 6**  
**PRE-DEVELOPMENT**  
**100-YEAR SCOUR DEPTH MAP**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Obion County

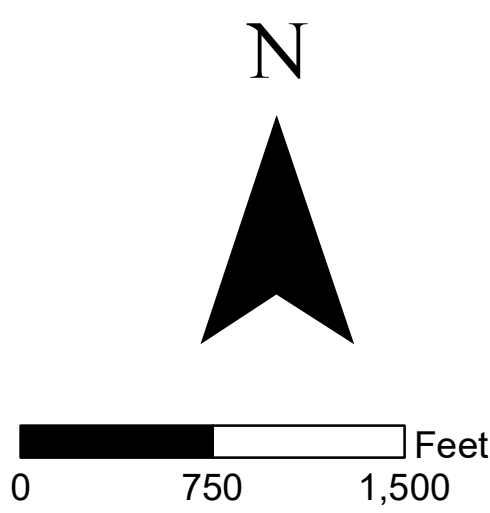
Tennessee

**Legend**

- Site Boundary
- 2-D Boundary

**Scour Depth (ft)**

- 0.25 - 0.5
- 0.5 - 0.75
- 0.75 - 1
- 1 - 2
- > 2



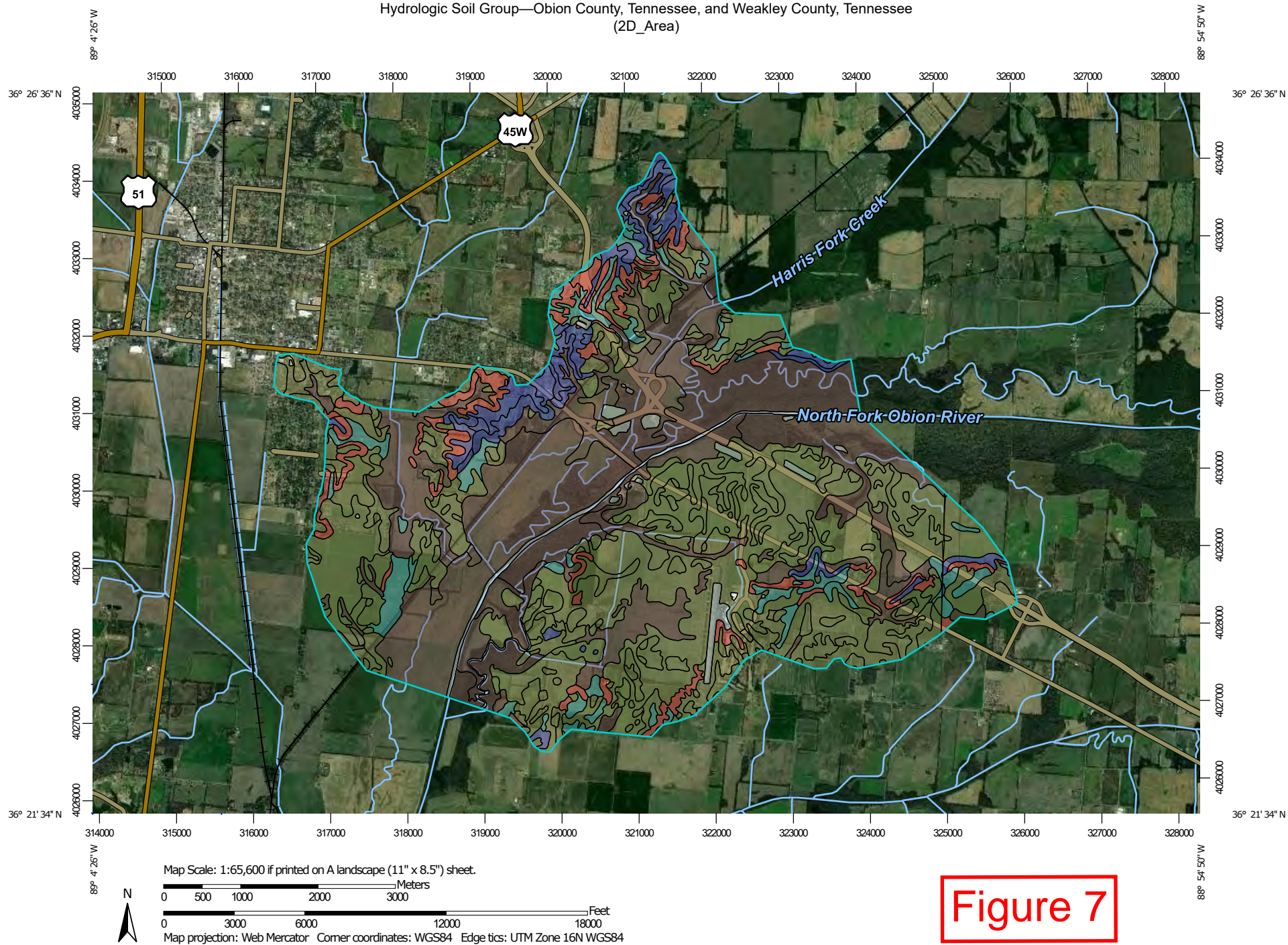
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**Kimley»Horn**

April 2020



# Hydrologic Soil Group—Obion County, Tennessee, and Weakley County, Tennessee (2D\_Area)




**Figure 7**





## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points





 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available


### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Obion County, Tennessee

Survey Area Data: Version 14, Sep 16, 2019

Soil Survey Area: Weakley County, Tennessee

Survey Area Data: Version 16, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 10, 2016—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ad	Adler silt loam	C	7.1	0.1%
Bd	Birds silt loam	B/D	171.0	1.8%
Ca	Calloway silt loam	C/D	362.2	3.9%
Ce	Center silt loam, 0 to 2 percent slopes	C/D	728.7	7.8%
Cl	Collins silt loam	C	107.3	1.1%
Cn	Convent silt loam	C	89.4	1.0%
Dk	Dekoven silt loam	B/D	26.0	0.3%
Fa	Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	B/D	1,250.3	13.4%
FcB	Feliciano silt loam, 2 to 5 percent slopes, northern phase	B	32.3	0.3%
FcB2	Feliciano silt loam, 2 to 5 percent slopes, moderately eroded, northern phase	B	6.2	0.1%
FcE2	Feliciano silt loam, 12 to 20 percent slopes, moderately eroded, northern phase	B	32.4	0.3%
Fn	Fountain silt loam	C/D	389.2	4.2%
GrB	Grenada silt loam, 2 to 5 percent slopes	C/D	486.4	5.2%
GrB2	Grenada silt loam, 2 to 5 percent slopes, eroded	C	81.6	0.9%
GrC2	Grenada silt loam, 5 to 8 percent slopes, eroded	D	269.2	2.9%
GrD2	Grenada silt loam, 8 to 12 percent slopes, eroded	D	35.7	0.4%
LoB	Loring silt loam, 2 to 5 percent slopes	C	119.4	1.3%
LoB2	Loring silt loam, 2 to 5 percent slopes, eroded	C/D	8.6	0.1%
LoC2	Loring silt loam, 5 to 8 percent slopes, eroded	D	85.2	0.9%



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
LoD2	Loring silt loam, 8 to 12 percent slopes, eroded	D	85.0	0.9%
LoE2	Loring silt loam, 12 to 20 percent slopes, eroded	D	0.1	0.0%
MfB	Memphis silt loam, 2 to 5 percent slopes, northern phase	B	165.8	1.8%
MfB2	Memphis silt loam, 2 to 5 percent slopes, moderately eroded, northern phase	B	6.4	0.1%
MfC2	Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase	B	71.0	0.8%
MfD2	Memphis silt loam, 8 to 12 percent slopes, moderately eroded, northern phase	B	32.1	0.3%
MfE2	Memphis silt loam, 12 to 20 percent slopes, moderately eroded, northern phase	B	69.0	0.7%
MfF2	Memphis silt loam, 20 to 30 percent slopes, moderately eroded, northern phase	B	45.2	0.5%
MgF	Memphis - Gullied land complex, 12 to 30 percent slopes	B	5.2	0.1%
Rt	Routon silt loam, 0 to 2 percent slopes	C/D	45.1	0.5%
Ru	Routon-Bonn silt loam complex	C/D	2,061.5	22.0%
Sm	Smoothed land, Memphis soil material		38.1	0.4%
W	Water		157.1	1.7%
Ws	Waverly silt loam	B/D	2,021.7	21.6%
<b>Subtotals for Soil Survey Area</b>			<b>9,091.6</b>	<b>97.2%</b>
<b>Totals for Area of Interest</b>			<b>9,357.5</b>	<b>100.0%</b>

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ca	Calloway silt loam	D	5.2	0.1%
Ce	Center silt loam, 0 to 3 percent slopes	C/D	63.5	0.7%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Co	Collins silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	B	20.7	0.2%
GrB2	Grenada silt loam, 2 to 5 percent slopes, eroded	C	41.7	0.4%
LoD3	Loring silt loam, 8 to 12 percent slopes, severely eroded	D	11.8	0.1%
Rt	Routon silt loam, 0 to 2 percent slopes	C/D	111.9	1.2%
Wa	Waverly silt loam, rarely flooded	B/D	10.9	0.1%
WR	Waverly, Rosebloom silt loams and Frequently flooded soils	B/D	0.3	0.0%
<b>Subtotals for Soil Survey Area</b>			<b>265.9</b>	<b>2.8%</b>
<b>Totals for Area of Interest</b>			<b>9,357.5</b>	<b>100.0%</b>



## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

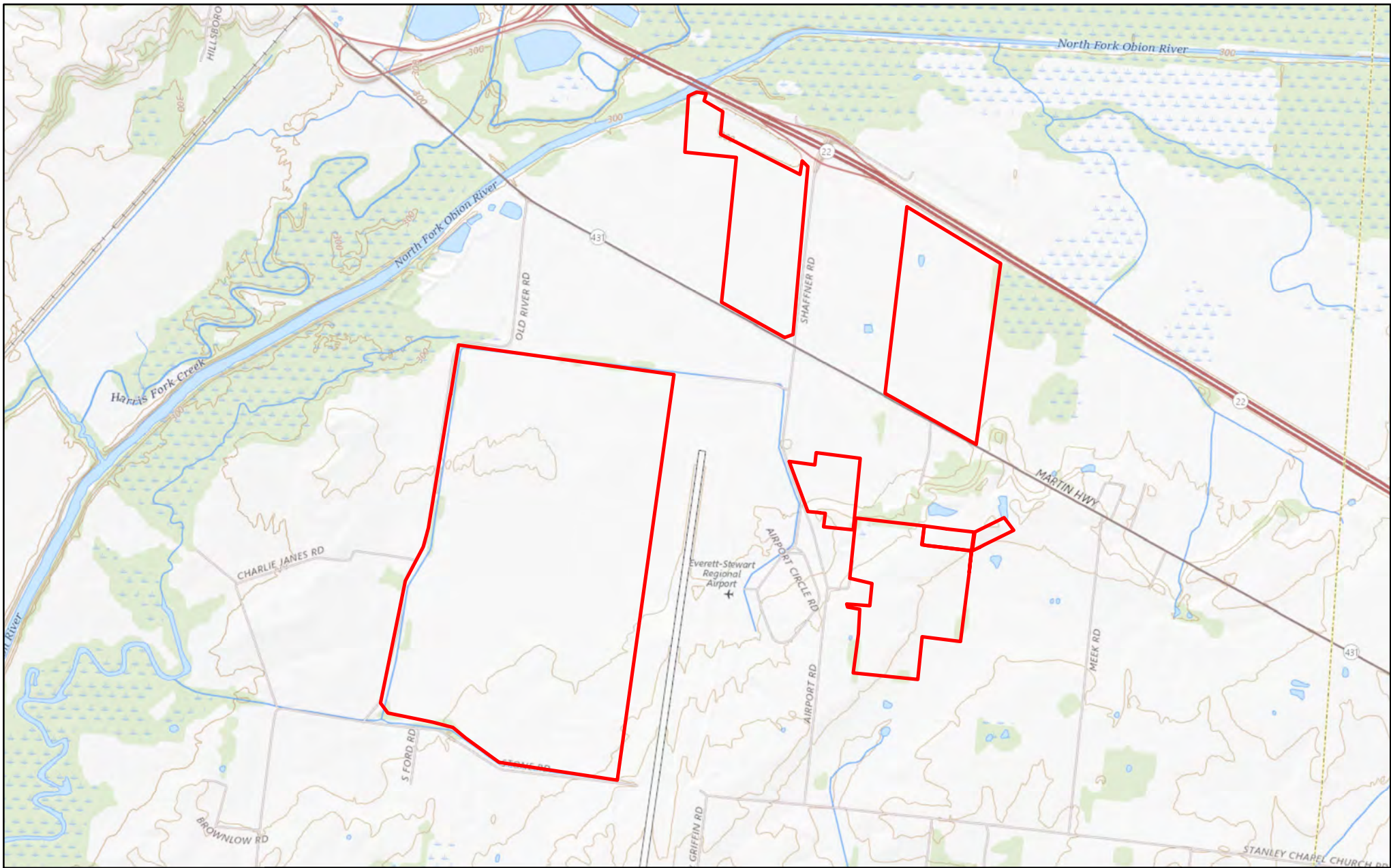
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

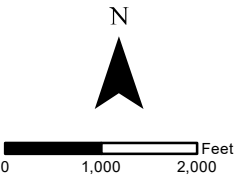


**Figure 8:**  
**USGS Quadrangle Map**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

**Legend**  
[Red Outline] Site Boundary

Obion County      Tennessee

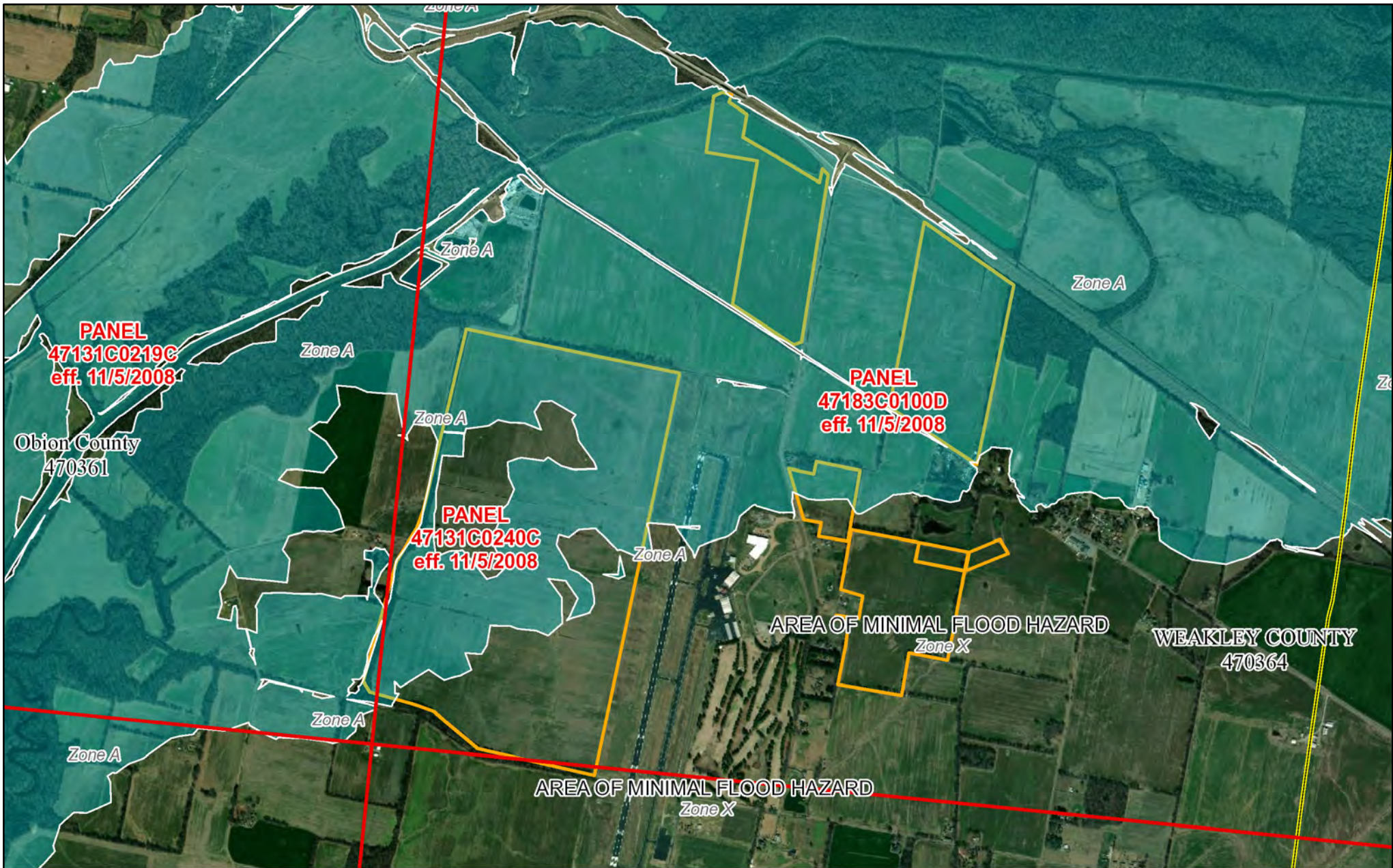


**PREPARED BY**

**Kimley»Horn**

**April 2020**





**Figure 9:  
FEMA FIRM Map**

Skyhawk Solar  
prepared for  
TN Solar 1, LLC

Legend		
<span style="border: 2px solid yellow; display: inline-block; width: 15px; height: 10px;"></span> Site Boundary	<b>Flood Hazard Boundaries</b>	<b>Flood Hazard Zones</b>
<span style="border: 2px solid red; display: inline-block; width: 15px; height: 10px;"></span> FIRM Panels	<span style="border-bottom: 1px solid black; display: inline-block; width: 20px;"></span> Other Boundaries	<b>Zone Type</b>
<span style="border-bottom: 2px solid blue; display: inline-block; width: 20px;"></span> Profile Baselines	<b>Line Type</b>	<span style="background-color: lightblue; display: inline-block; width: 15px; height: 10px;"></span> 1% Annual Chance Flood Hazard
<span style="border-bottom: 2px solid black; display: inline-block; width: 20px;"></span> Transect Baselines	<span style="border-bottom: 2px solid red; display: inline-block; width: 20px;"></span> Limit Lines	<span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Regulatory Floodway
<span style="border: 2px solid yellow; display: inline-block; width: 15px; height: 10px;"></span> Political Jurisdictions	<span style="border-bottom: 2px solid red; display: inline-block; width: 20px;"></span> SFHA / Flood Zone Boundary	<span style="background-color: yellow; display: inline-block; width: 15px; height: 10px;"></span> Special Floodway
		<span style="background-color: orange; display: inline-block; width: 15px; height: 10px;"></span> Area of Undetermined Flood Hazard
		<span style="background-color: lightorange; display: inline-block; width: 15px; height: 10px;"></span> 0.2% Annual Chance Flood Hazard
		<span style="background-color: lightgrey; display: inline-block; width: 15px; height: 10px;"></span> Future Conditions 1% Annual Chance Flood Hazard
		<span style="background-color: pink; display: inline-block; width: 15px; height: 10px;"></span> Area with Reduced Risk Due to Levee

PREPARED BY

Kimley»Horn

April 2020



0 1,000 2,000 Feet