

June 16, 2022

Tennessee Valley Authority
1101 Market Street
Chattanooga
Tennessee, 37402-2801

**Subject: Engineer's Certification of Wetlands Location Restriction Demonstration
North Rail Loop Landfill Cell 2
Tennessee Valley Authority Gallatin Fossil Plant
Gallatin, Tennessee**

1.0 PURPOSE

The purpose of this document is to certify that the Tennessee Valley Authority (TVA) Gallatin Fossil Plant (GAF) North Rail Loop (NRL) Landfill Cell 2 is in compliance with the wetlands location restriction requirements specified in 40 CFR § 257.61 of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals Rule (CCR Rule). Cell 2 is defined by the CCR Rule as a lateral expansion of the existing NRL Landfill (Cell 1). Presented below is the background, summary of findings, and certification.

2.0 BACKGROUND

In accordance with 40 CFR § 257.61(a), all new and existing CCR impoundments, new CCR landfills, and lateral expansions of units must not be located in wetlands, as defined in 40 CFR § 232.2, unless the owner or operator demonstrates that the CCR unit meets the requirements of paragraphs 40 CFR § 257.61(a)(1) through (5).

3.0 SUMMARY OF FINDINGS

A Location Restriction Demonstration (Demonstration) has been prepared and is provided in **Attachment A**. The Demonstration shows that the NRL Landfill Cell 2 meets the requirements set forth in 40 CFR § 257.61(a).

4.0 CERTIFICATION

I, David E. Skeggs, being a Professional Engineer in good standing in the State of Tennessee, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with the accepted practice of engineering; that the information contained herein is accurate as of the date of my signature below; and that the North Rail Loop Landfill Cell 2 meets the requirements of 40 CFR § 257.61(a).

SIGNATURE: 
David E. Skeggs, PE

DATE: June 16, 2022

ADDRESS: 5438 Wade Park Boulevard
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Raleigh, NC 27607

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ATTACHMENTS: A – Wetlands Location Restriction Demonstration



Attachment A
Wetlands Location Restriction
Demonstration

TVA GALLATIN FOSSIL PLANT – SUMNER COUNTY, TENNESSEE

WETLANDS
LOCATION RESTRICTION DEMONSTRATION
40 CFR § 257.61
NORTH RAIL LOOP
LANDFILL CELL 2

Prepared for



Tennessee Valley Authority
1101 Market St.
Chattanooga, TN 37402-2801

Revision 1
June 16, 2022

Prepared by

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REVISION HISTORY

Revision	Revision Date	Description
0	09/10/2021	Initial Issue
1	06/16/2022	Revised Section 2.1 to clarify wetland impacts during Cell 1 construction and to reference recent delineations. Updated delineations depicted on Figure 4.



1.0 INTRODUCTION

1.1 OBJECTIVE

This Location Restriction Demonstration (Demonstration) has been prepared for the North Rail Loop (NRL) Landfill Cell 2, which is a lateral expansion of the existing NRL Coal Combustion Residuals (CCR) Landfill (Cell 1), located at the Tennessee Valley Authority's (TVA) Gallatin Fossil Plant (GAF) in Sumner County, Tennessee.

The purpose of this Demonstration is to document compliance with the wetlands location restriction requirements set forth in 40 CFR §257.61 of the United States Environmental Protection Agency (USEPA) CCR Rule.

1.2 CCR RULE REQUIREMENTS – 40 CFR § 257.61

§ 257.61 Wetlands

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in § 232.2 of this chapter, unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section.

(1) Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.

(2) The construction and operation of the CCR unit will not cause or contribute to any of the following:

(i) A violation of any applicable state or federal water quality standard;

(ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;

(iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and

(iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:



- (i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;*
 - (ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;*
 - (iii) The volume and chemical nature of the CCR;*
 - (iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;*
 - (v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and*
 - (vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.*
- (4) To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs (a)(1) through (3) of this section, then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and*
- (5) Sufficient information is available to make a reasoned determination with respect to the demonstrations in paragraphs (a)(1) through (4) of this section*
- (b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of paragraph (a) of this section.*
- (c) The owner or operator of the CCR unit must complete the demonstrations required by paragraph (a) of this section by the date specified in either paragraph (c)(1) or (2) of this section.*
 - (1) For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.*
 - (2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.*



(3) The owner or operator has completed the demonstration required by paragraph (a) of this section when the demonstration is placed in the facility's operating record as required by § 257.105(e).

(4) An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of paragraph (a) of this section by the date specified in paragraph (c)(1) of this section is subject to the requirements of § 257.101(b)(1).

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstrations showing compliance with the requirements of paragraph (a) of this section is prohibited from placing CCR in the CCR unit.

(d) The owner or operator must comply with the recordkeeping requirements specified in § 257.105(e), the notification requirements specified in § 257.106(e), and the Internet requirements specified in § 257.107(e).

1.3 METHODOLOGY

This Demonstration is based on existing documentation such as construction drawings, record drawings, and any other pertinent data and/or investigations to support historic conditions and operations at the NRL Landfill.

1.4 SITE BACKGROUND

The NRL Landfill is located on land currently owned by TVA at GAF. GAF is located at 1499 Steam Plant Road in Sumner County, on the north bank of the Cumberland River, approximately four miles southeast of the juncture of U.S. Route 31E and Tennessee State Route 109 in Gallatin. The NRL site for the disposal facility (Figure 1) is located within the GAF reservation, just north of the GAF plant and west of Steam Plant Road. Existing ground surface elevation across the disposal site ranges from approximately 470-ft to 580-ft National Geodetic Vertical Datum of 1929 (NGVD29).

2.0 ASSESSMENT OF SITE WETLANDS

2.1 LOCATION AND CONDITION OF WETLANDS IN THE GAF NRL PROPERTY

Wetlands identified on National Wetland Inventory (NWI) map, Figure 2, in and adjacent to the NRL Landfill are limited to a single palustrine open water area (PUBHx) located to the west of the landfill area (blue circle). Soils in the location of the NRL consist primarily of Inman flaggy silt clay loam (67%), Barfield-rock outcrop complex (13%), Mimosa silt loam (13%) and Hampshire (7%). None of these soils are considered prime farmlands or hydric soils see Figure 3.

A wetlands delineation was conducted by TVA in 2012. NRL Landfill Cell 1 construction was conducted in 2013. A total of two intermittent and 14 ephemeral streams were identified in



the area of the NRL Landfill in the 2012 wetlands delineation. Impacts to these streams were mitigated as a part of the State NRL Landfill Part II Permit. The small wetland (blue circle) to the west of the landfill on the Figure 2 was impacted by the construction of Cell 1 of the landfill. Land use/land cover data and field delineations show that wetlands comprise less than 1 percent of the land use within the GAF NRL area. Open water areas of Old Hickory Reservoir and less than 1 percent of the land area (emergent herbaceous and woody wetlands) are present within the surrounding 5-mile radius. Field delineation efforts to describe the present state of the jurisdictional wetlands within the NRL impact area are discussed below.

Additional wetland delineation was conducted down gradient of the NRL Landfill and Ash Pond Complex (APC), specifically Ash Pond A, in the area of the Stilling Ponds by AECOM in 2018 as part of the CCR rule evaluation for breach analysis for the Ash Ponds. New wetland delineations were also performed within the rail loop area of the site as part of the Surface Impoundment Closure and Restoration Project EIS (TVA 2020a). These delineations are depicted in Figure 4. Wetlands north of the Stilling Ponds (Figure 4) are unlikely to be impacted by construction of Cell 2 of the NRL Landfill.

2.2 IMPACTS

A total of approximately 2,000 linear feet of intermittent stream and 3,000 feet of ephemeral stream were identified within the proposed limits of disturbance for the entire footprint of the NRL Landfill prior to initial site construction (TVA 2012). A 404 permit from the United States Army Corp of Engineers (USACE) and an Aquatic Resource Alteration Permit (ARAP) from TDEC were acquired, and stream credits were purchased prior to construction. Impacts to wetlands outside of the footprint of the NRL Landfill are not anticipated as Ash Pond A is downgradient of the NRL Landfill and would retain any losses from Cell 2 construction (Figure 4).

2.2.1 40 CFR § 257.61(a)(1) – LOCATION ALTERNATIVES

Per 40 CFR § 257.61(a)(1) where applicable under section 404 of the Clean Water Act (CWA) or applicable state wetland laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve the wetlands must be made. The footprint of the site was chosen in order to minimize impacts to wetlands. Construction of the NRL Landfill Cell 1 impacted Waters of the State and United States (streams). These impacts were mitigated through purchase of credits. Future construction of Cell 2 would not directly impact any wetlands or streams. In the event impacts to downgradient wetland areas may occur, they would be mitigated by appropriate compensation in accordance with pending requirements of the permit to be issued by USACE and TDEC. Potential indirect impacts resulting from construction activities, could include erosion and sedimentation from storm water runoff during construction of Cell 2 into offsite or nearby surface waters (Old Hickory Reservoir); but Best Management Practices (BMPs) will be implemented to minimize this potential.



2.2.2 40 CFR §257.61(a)(2) – CONSTRUCTION AND OPERATION

2.2.2.1 Applicable Water Quality Standards

In accordance with the CCR Rule, all applicable units that have the potential to impact wetlands, must comply with the regulatory standards set forth in all applicable governing documents. In examination of the CCR Rule and the proposed NRL Landfill Cell 2, the proposed expansion will comply with all required state and federal programs, including the CWA and National Pollutant Discharge Elimination System (NPDES) permit.

2.2.2.2 Applicable Effluent Limitations

TVA is required under NPDES Permit No. TN0005428 to meet pH, total suspended solids, total dissolved solids, oil and grease, and chronic whole effluent toxicity limits prior to discharge. The NPDES permit also requires monitoring for a series of total recoverable metals including aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, mercury, molybdenum, nickel, selenium, silver, thallium, and zinc; and radium, sulfate and fluoride (NPDES, 2018).

Effluent Limitations established in NPDES Permit TN0005428 are managed through existing facilities, BMPs, and inspections. TVA has established an Inspection Program that includes weekly and annual landfill inspections, as required by 40 CFR § 257.84. In addition, informal inspections may be performed by operations and maintenance personnel. With these controls, violations due to discharge of contaminants is not anticipated.

2.2.2.3 Endangered Species

In accordance with 40 CFR §257.61(a)(2)(iii), the owner or operator must ensure that the new landfill does not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973. TVA conducted an Environmental Assessment (EA) for the NRL landfill area in 2013. Additional EAs were conducted in 2017 for a dewatering facility directly adjacent and to the southwest of the landfill area. In addition, a 2019 Supplemental EA for the ash dewatering and a 2020 Environmental Impact Statement (EIS) related to proposed Surface Impoundment Closure and Restoration also reviewed potential impacts to endangered or threatened species in the vicinity of the landfill. A review of the TVA Regional Heritage database on July 13, 2018, and TDEC's database (Tennessee State Nature Preserves Commission, 2018) resulted in three state-listed species within three miles of the project footprint; streamside salamander (*Ambystoma barbouri*), Allegheny wood rat (*Neotoma magister*) and water stitchwort (*Stellaria fontinalis*). In addition, there are records of six federally listed terrestrial animal species within three miles of the GAF NRL property (Table 1).



Table 1. Terrestrial Listed Species and Other Species of Conservation Concern Potentially Occurring and/or with Recorded Occurrences within 3 Miles of GAF.

Common Name	Scientific Name	Status ^a	
		Federal	State (Rank) ^b
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	DM	NMGT(S3)
Mammals			
Gray bat	<i>Myotis grisescens</i>	LE	END (S2)
Indiana bat	<i>Myotis sodalis</i>	LE	END (S1)
Northern long-eared bat	<i>Myotis septentrionalis</i>	PE	NMGT (S4)
Allegheny wood rat	<i>Neotoma magister</i>	-	D (S3)
Amphibians			
Streamside salamander	<i>Ambystoma barbourin</i>	-	D (S2)
Plants			
Water Stitchwort	<i>Stellaria fontinalis</i>	-	SC (S3)
Braun's Rock-cress	<i>Arabis perstellata</i>	LE	END(S1)
Leafy Prairie-clover	<i>Dalea foliosa</i>	LE	END(S2S3)
Spring Creek Bladderpod	<i>Lesquerella perforate</i>	LE	END(S1)

Source: NatureServe Natural Heritage database, accessed July 13, 2018

^a Status Codes: END = Endangered; LE = Listed Endangered; LT = Listed Threatened; SPCO = Listed Special Concern; NMGT = In Need of Management; THR = Threatened; TRKD = Tracked by the Tennessee Natural Heritage Program

^b Status Ranks: S1 = Extremely rare and critically imperiled; S2 = Very rare and imperiled; S3 = Vulnerable; S4 = Apparently secure, but with cause for long-term concern; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2)

One federally listed species (gray bat), and a federally delisted and monitored species (bald eagle) are known to occur in Sumner County, Tennessee. Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall. They prefer to forage over water bodies (Brady et al. 1982). While the gray bat has been documented in Sumner County, the nearest recorded occurrence of a gray bat is from a cave located in Wilson County approximately 1,300 feet across the Cumberland River/Old Hickory Lake from the southern portion of the GAF reservation. This cave has been monitored since 1976, with estimated bat numbers ranging from 0 to 17,000 per survey. The most recent survey was conducted in the summer of 2013 and found an estimate of around 17,000 bats (the most since monitoring began). No caves have been documented in the GAF NRL property, and none were encountered during National Environmental Policy Act (NEPA) related field investigation. No records of Indiana bats are known from Sumner County, Tennessee. The nearest known Indiana bat record is from a maternity colony approximately 16.1 miles southeast of the GAF NRL property in Wilson County, Tennessee. The nearest known record for the northern long-eared bat is from a cave in Sumner County approximately 16.2 miles away.

The Allegheny woodrat has a state status of Deemed in Need of Management but has no federal status. It utilizes habitats associated with rock outcroppings, rocky cliffs, talus slopes, and caves, especially when found in a mixed conifer-hardwood forest. The nearest record of the Allegheny woodrat is from a cave approximately 0.5 mile from the GAF NRL property. Thirteen additional caves, which potentially may provide habitat this species, are known within 3 miles



of the Project Area. Suitable habitat for this species does not exist within the GAF NRL property (TVA 2018b).

Streamside salamander has a state status of Deemed in Need of Management but has no federal status. Closely related to the small-mouthed salamander, which is identical in appearance, the streamside salamander is found in scattered populations in Middle Tennessee, particularly in limestone habitats. This species is found in upland forests close to streams and typically lays eggs in late winter in ephemeral streams. While one limestone stream is located to the south of the GAF NRL property, streamside salamanders were not observed within the rail loop area during surveys conducted by TVA and TDEC in 2019 at the GAF as part of the Surface Impoundment Closure and Restoration Project EIS (TVA 2020a).

Of the known occurrences of Braun's rock-creep in Tennessee, the closest is a population site near the southern boundary of Wilson County (USFWS 2018b), south of the Cumberland River over 5 miles from the GAF reservation. Braun's rock-creep inhabits limestone bluffs, a habitat not present in the GAF NRL property. Spring Creek bladderpod is known to occur within 3 miles of GAF; however, it has been found only in Wilson County, south of the Cumberland River from GAF. Spring Creek bladderpod inhabits cultivated fields, floodplains, and outcrops, habitats not present in the GAF NRL property. Occurrences of leafy prairie-clover have been reported from Sumner County, but not within 3 miles of GAF. Leafy prairie-clover inhabits rocky washes in glades, habitats not present in the GAF NRL property. Water stitchwort, a state species of special concern, has been recorded south of the Cumberland River in Wilson County, not in Sumner County. Water stitchwort inhabits seeps and limestone creek beds, habitats not present in the GAF NRL property. No endangered, threatened, or rare plants or habitats to support them were observed during NEPA related site visits. No critical habitat was reported in the IPaC report for the vicinity of the GAF reservation.

Habitat assessment surveys for Indiana bat and the northern long-eared bat were performed during field surveys conducted on the GAF reservation in 2011, 2012, 2016, 2017 and 2018 using the United States Fish and Wildlife Service (USFWS) 2018 and 2017 Range-wide Indiana bat Summer Survey Guidelines. In April 2018, TVA completed a Programmatic Consultation under Section 7 of the ESA with the USFWS through which potential impacts to federally listed bats for actions such as this landfill were considered. Conservation measures were developed as a part of this consultation to minimize potential impacts to these species and were implemented during this project. While mitigation was not a requirement that came from this Programmatic Consultation, TVA does undergo many stewardship projects associated with recovery of federally listed bats. These stewardship projects are located in biologically relevant areas where they are most likely to benefit the species. Recent projects include installing artificial bat roosting structures, installing gates at known bat roosts to protect hibernating bats, and partnering with other agencies to protect lands with known maternity roosting sites.

2.2.2.4 Marine Protection Act

The 1972 Marine Mammal Protection Act was enacted to protect all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the United States.



The act establishes an ending on the taking and importation of marine mammals and marine mammal by products. According to County Report of Endangered, Threatened, Proposed & Candidate Species in Sumner County, Tennessee, there are no known aquatic and/or marine mammals present within Sumner County that are found in the Marine Mammal Protection Act. Additionally, based on the definition of “marine” as set forth in 15 CFR § 922.3, the proposed landfill site does not include any marine sanctuaries and therefore this requirement is not applicable.

2.2.3 40 CFR §257.61(a)(3) – POTENTIAL FOR SIGNIFICANT DEGRADATION

2.2.3.1 Erosion Stability and Migration Potential of Wetland Soils

The wetland study conducted as part to the 2013 EA determined the wetland soils, and muds and deposits used to support the proposed landfill do not pose any erosion stability or migration concern.

2.2.3.2 Erosion Stability and Migration Potential of Dredge/Fill

No dredging is proposed in conjunction with the NRL Landfill Cell 2 construction at GAF.

2.2.3.3 CCR Volume and Chemical Nature

The NRL Landfill is designed to accommodate about 6.8 million cubic yards of CCR. Previous chemical testing of this CCR material has been conducted. The landfill includes a bottom liner system which is designed to contain CCR and leachate.

2.2.3.4 Fish and Wildlife Impacts

Following the construction phase and during operation of Cell 2 of the NRL Landfill, wildlife use of the proposed landfill area would be limited; however, some scattered herbaceous areas could develop and could be used by grassland species or species adapted to disturbed areas. The proposed project is not expected to result in any substantial impacts to populations of wildlife species.

2.2.3.5 Environmental Impacts

URS performed slope stability analyses that were presented as part of the State Part II Permit Application for the NRL Landfill (URS, 2013). It was determined that the calculated factors of safety (FS) met the required target FS. Therefore, a slope failure and subsequent release of CCR is not anticipated.

2.2.3.6 Additional Factors

This CCR unit is subject to TVA’s CCP Storage Facilities Inspection Program. The inspection program includes scheduled annual, quarterly and weekly inspections as well as unscheduled special (emergency) inspections. Additionally, TVA plant personnel make daily observations of the disposal areas. Maintenance is performed on an as-needed basis, and TVA documents repair and maintenance activities.



2.2.4 40 CFR §257.61(a)(4) – WETLAND MITIGATION

A 404 permit from USACE and an ARAP from TDEC were acquired by TVA in 2013 for the NRL Landfill. All specified mitigation measures were addressed.

3.0 CONCLUSIONS

The purpose of this demonstration is to document that the requirements in 40 CFR § 257.61(a) have been met to support certification for the NRL Landfill Cell 2 at TVA GAF prior to placement of CCR.

In accordance with 40 CFR § 257.61(a), the NRL Landfill Cell 2 area complies with all required state and federal programs, including CWA and NPDES. Moreover, in combination of field surveys and delineations performed, no known threatened and endangered species have been noted within the GAF NRL property. Also, according to the County Report of Endangered, Threatened, Proposed & Candidate Species, there are no known aquatic and/or marine mammals present within Sumner County that are listed in the Marine Mammal Protection Act. The wetland demonstration determined the wetland soils do not pose erosion stability or migration concerns and landfill construction and operation are not expected to result in any substantial impacts to populations of wildlife species. The NRL Landfill Cell 2 is not anticipated to have significant effects on the surrounding environment from a catastrophic release, based on stability analyses. The footprint of the site was chosen in order to minimize impacts to wetlands. Mitigation measures for stream and wetland impacts as determined in consultation with the USACE and TDEC have been implemented.

Based on this assessment, the NRL Landfill Cell 2 at GAF meets the requirements of 40 CFR § 257.61(a) of the CCR Rule.

4.0 REFERENCES

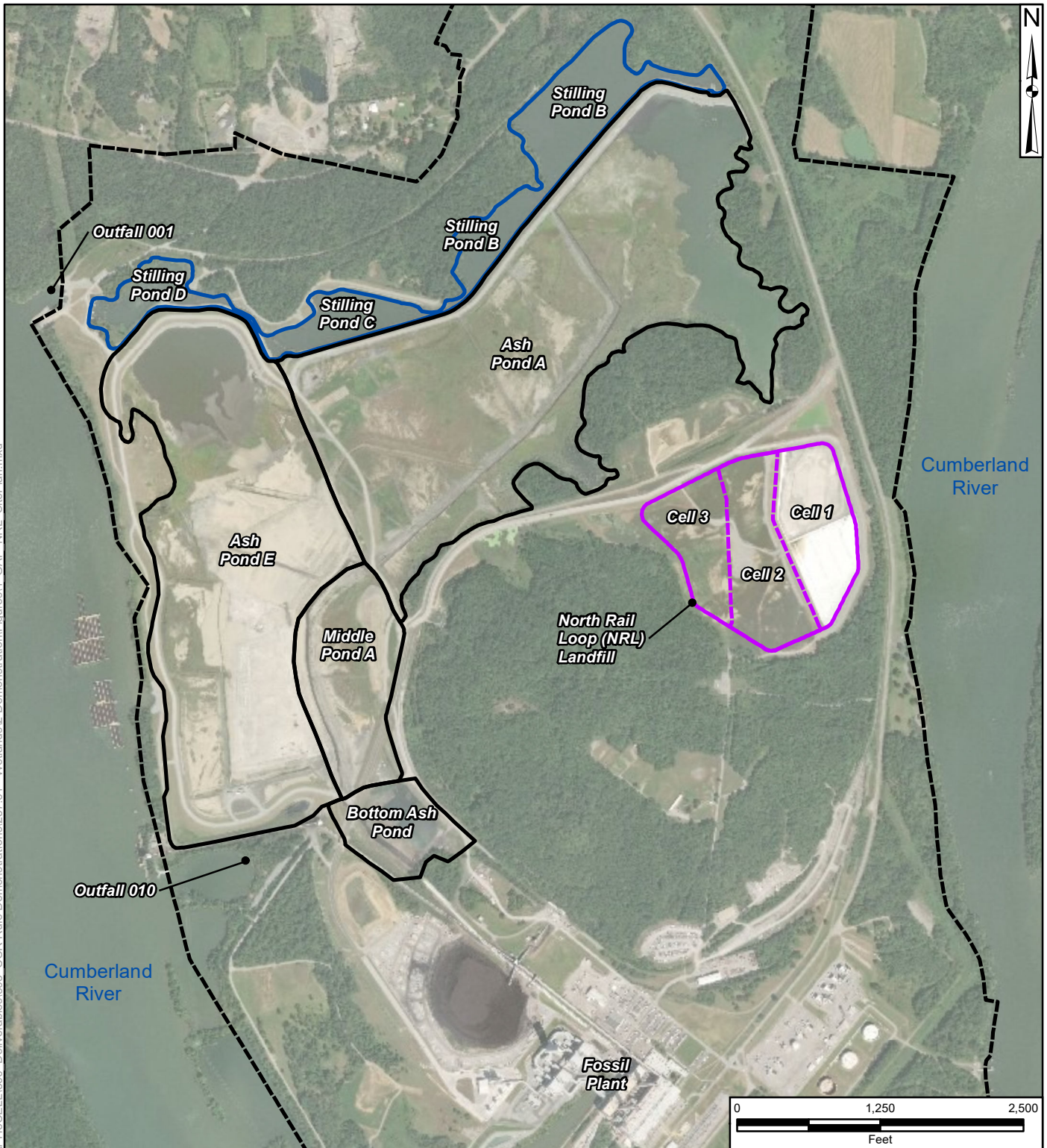
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USFWS (2018). Braun's Rockcress (*Arabis perstellata*) 5-Year Review: Summary and Evaluation. Final. Southeast Region, Kentucky Ecological Services Field Office, Frankfort, KY. August 2018.

FIGURES



Document Path: O:\DCS\Projects\EN\60570642_TVA\PH3CELL\500_Deliverables\503_CCR Rule Demonstrations\257.61 - Wetlands\2-Demonstration\Figures\1_GAF_NRL_SitePlan.mxd

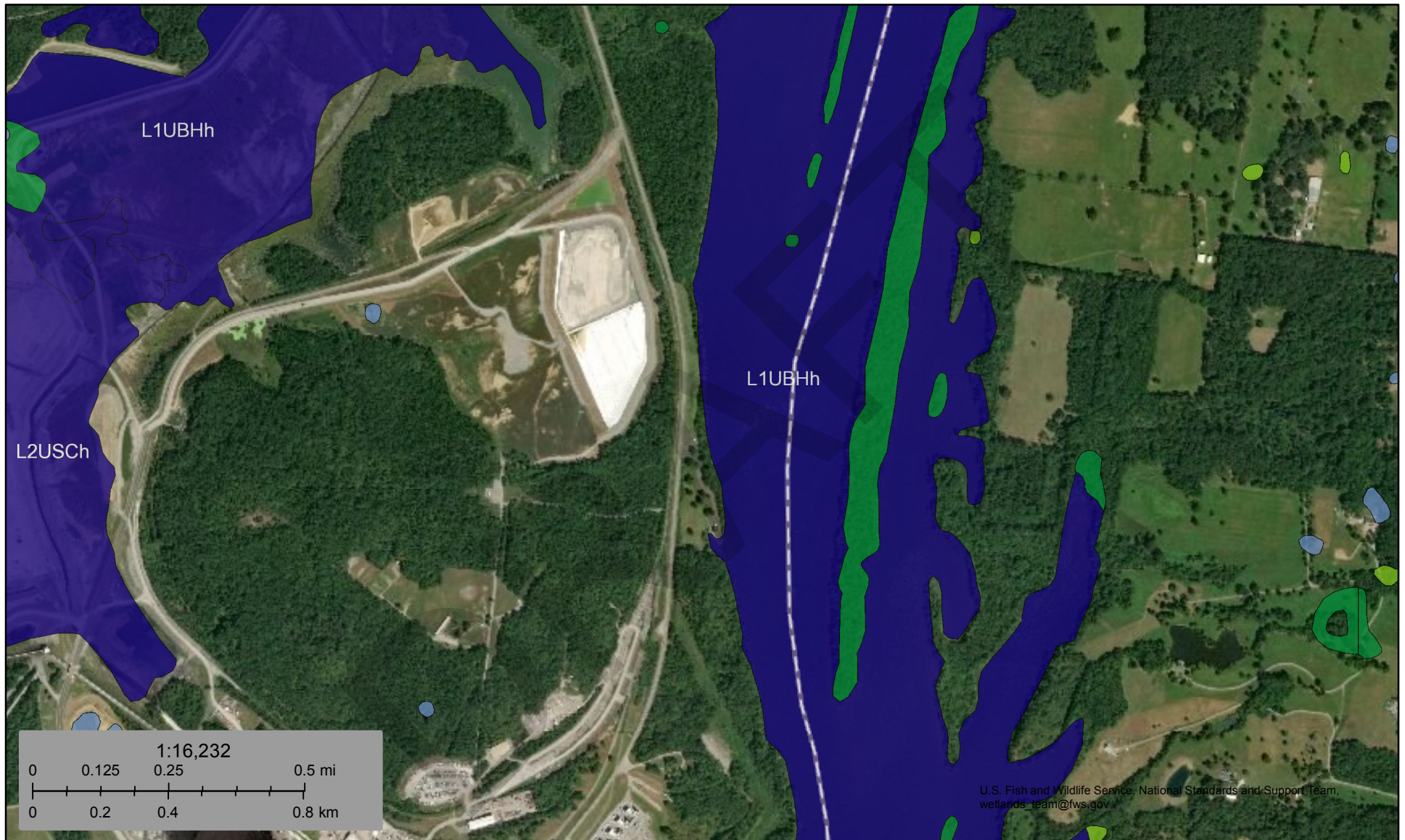
- LEGEND**
- CCR Management Units
 - North Rail Loop (NRL) Landfill
 - Stilling Ponds
 - TVA Gallatin Fossil Plant Property Boundary

AECOM		Figure 1	
SITE LOCATION MAP			
DRAWN BY:	REVIEWED BY:	APPROVED BY:	REVISION NUMBER:
J.COLLEY	D.SKEGGS	-	REV. 1
GALLATIN FOSSIL PLANT TENNESSEE VALLEY AUTHORITY			
DATE:	DEPT:		
MAR 2020	FOSSIL AND HYDRO ENGINEERING		

NOTE: Aerial image dated February 2017









Figure 2. GAF NRL NWI Map



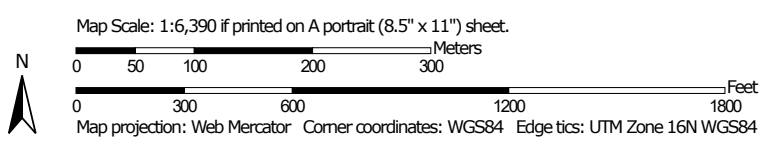
March 18, 2020

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
|  | Freshwater Pond |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.


Soil Map—Sumner County, Tennessee
(Figure 3. GAF NRL Soils Map)




Soil Map—Sumner County, Tennessee
(Figure 3. GAF NRL Soils Map)


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Sumner County, Tennessee
Survey Area Data: Version 12, Sep 16, 2019

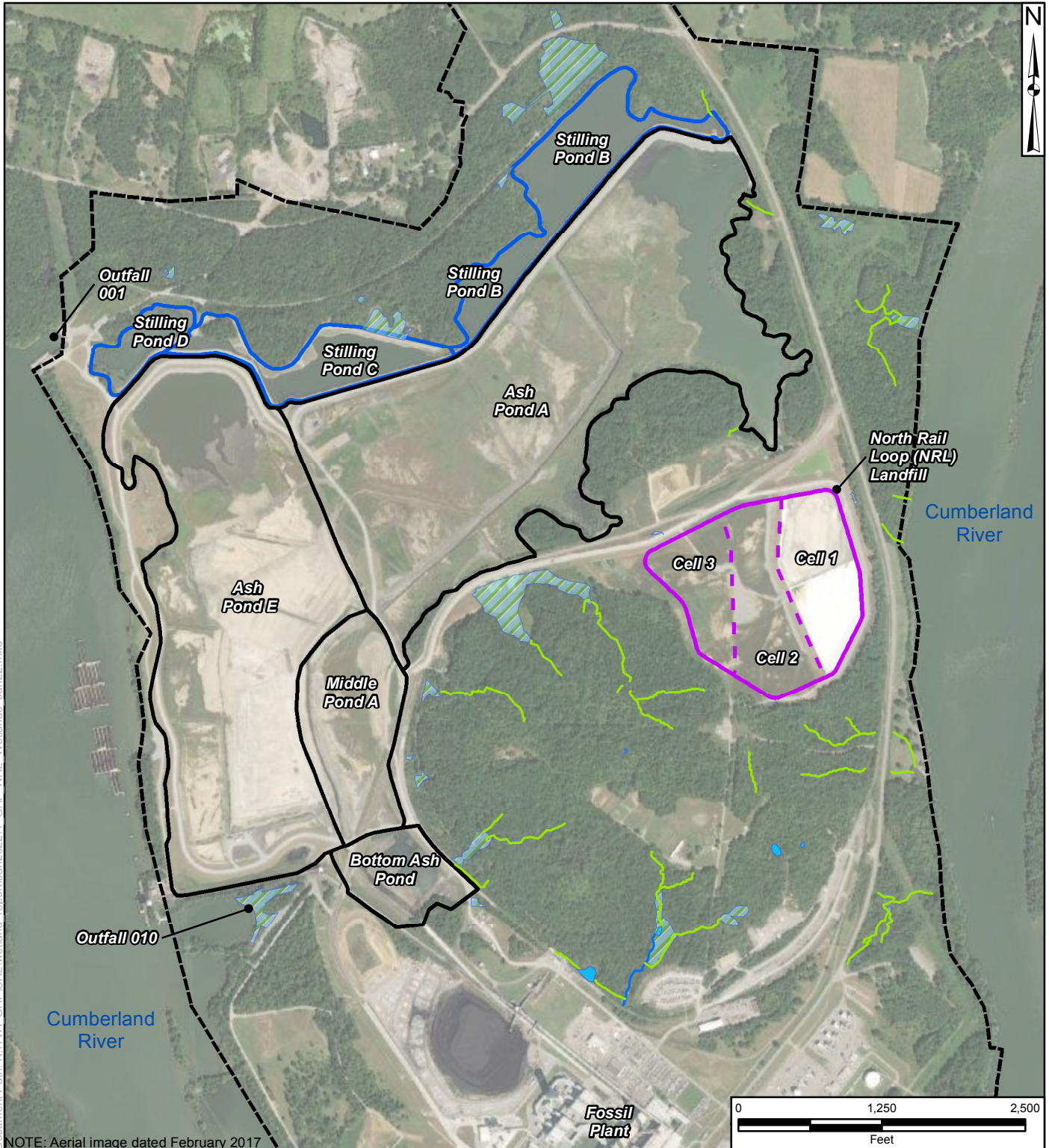
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 27, 2015—Oct 18, 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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaC	Barfield-Rock outcrop complex, 5 to 20 percent slopes	15.4	13.0%
HaD2	Hampshire silt loam, 12 to 20 percent slopes, eroded	8.2	6.9%
InD2	Inman flaggy silty clay loam, 12 to 20 percent slopes, eroded	79.6	67.3%
MnC2	Mimosa silt loam, 5 to 20 percent slopes, eroded, very rocky	15.0	12.7%
Totals for Area of Interest		118.3	100.0%



Document Path: K:\TVA_GAF\SR\Wetland_report\Jan2022\4_GAF_NRL_Wetlands_Jan22.mxd

NOTE: Aerial image dated February 2017

LEGEND

- Ponds
- Wetlands
- Ephemeral Stream
- Perennial Stream
- CCR Management Units
- Stilling Ponds
- North Rail Loop (NRL) Landfill
- TVA Gallatin Fossil Plant Property Boundary (Approximate)



Figure 4

WETLANDS AND WATER BODIES

DRAWN BY: T.ADHAM	REVIEWED BY: D.SKEGGS	APPROVED BY: -	REVISION NUMBER: REV. 1
GALLATIN FOSSIL PLANT TENNESSEE VALLEY AUTHORITY			
DATE: JAN 2022	DEPT: FOSSIL AND HYDRO ENGINEERING		