Tennessee Valley Authority, 1101 Market Street, BR4A, Chattanooga, Tennessee 37402

March 17, 2017

Mr. Jim McAdoo
Division of Water Resources
Tennessee Department of Environment
and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

Dear Mr. McAdoo:

TENNESSEE VALLEY AUTHORITY (TVA) – KINGSTON FOSSIL PLANT (KIF) – STILLING POND CLOSURE – NOTICE OF INTENT (NOI) FOR COVERAGE UNDER CONSTRUCTION GENERAL PERMIT

Please find enclosed a NOI, project site map, storm water pollution prevention plan, and a check in the amount of $3,000 to cover processing of this application for coverage under the storm water construction general permit. This NOI is being submitted so TVA can perform closure of the stilling pond.

If you have questions or need additional information, please contact Brad Love at (423) 751-8518 or by e-mail at bmlove@tva.gov.

Sincerely,

Terry E. Cheek
Senior Manager
Water Permits, Compliance, and Monitoring

Enclosures
cc: Mr. Michael Atchley
Division of Water Resources
Knoxville Environmental Field Office
Tennessee Department of Environment
and Conservation
3711 Middlebrook Pike
Knoxville, Tennessee 37921

TENNESSEE VALLEY AUTHORITY
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DATE 3-17-17

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TN DEPT. OF ENV. & CONSERVATION

MAR 2 0 2017

DIVISION OF WATER RESOURCES

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, TN 37243
1-888-891-8332 (TDEC)

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

Site or Project Name: TVA - Kingston Fossil Plant	**Existing NPDES Tracking Number: TNR**
Street Address or Location: 714 Swan Pond Road, Harriman, TN, 37748	Start date: April 1, 2017
	Estimated end date: April 30, 2018
Site Activity Description: Stilling Pond Closure	Latitude (dd.dddd): 35.905941
	Longitude (dd.dddd): -84.505668
County(ies): Roane — MS4 Jurisdiction: N/A	Acres Disturbed: 43
	Total Acres: 800

Does a topographic map show dotted or solid blue lines ■ and/or wetlands ☐ on or adjacent to the construction site?
If wetlands are located on-site and may be impacted, attach wetlands delineation report.
If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.: To be applied for

Receiving waters: Emory River (Kingston Intake Channel)

Attach the SWPPP with the NOI ■ SWPPP Attached — Attach a site location map ■ Map Attached

Site Owner/Developer Entity (*Primary Permittee*): (person, company, or legal entity that has operational or design control over construction plans and specifications): Tennessee Valley Authority

Site Owner/Developer Signatory (V.P. level/higher - signs certification below): (individual responsible for site): John C. Kammeyer		Signatory's Title or Position (V.P. level/higher - signs certification below): Vice President, Civil Projects, ESS, & CCP	
Mailing Address: 1101 Market Street, LP 5D-C		City: Chattanooga	State: TN — Zip: 37402
Phone: (423) 751-8246	Fax: (865)	E-mail: jckammey@tva.gov	
Optional Contact: Adele Dennison		Title or Position: Environmental Scientist	
Mailing Address: 714 Swan Pond Road		City: Harriman	State: TN — Zip: 37748
Phone: (865) 717-2157	Fax: (865)	E-mail: amdennison@tva.gov	

Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name; (print or type) John C. Kammeyer — Signature: John C Kammeyer — Date: 3-17-2017

Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated.

Contractor company name (print or type): Phillips and Jordan

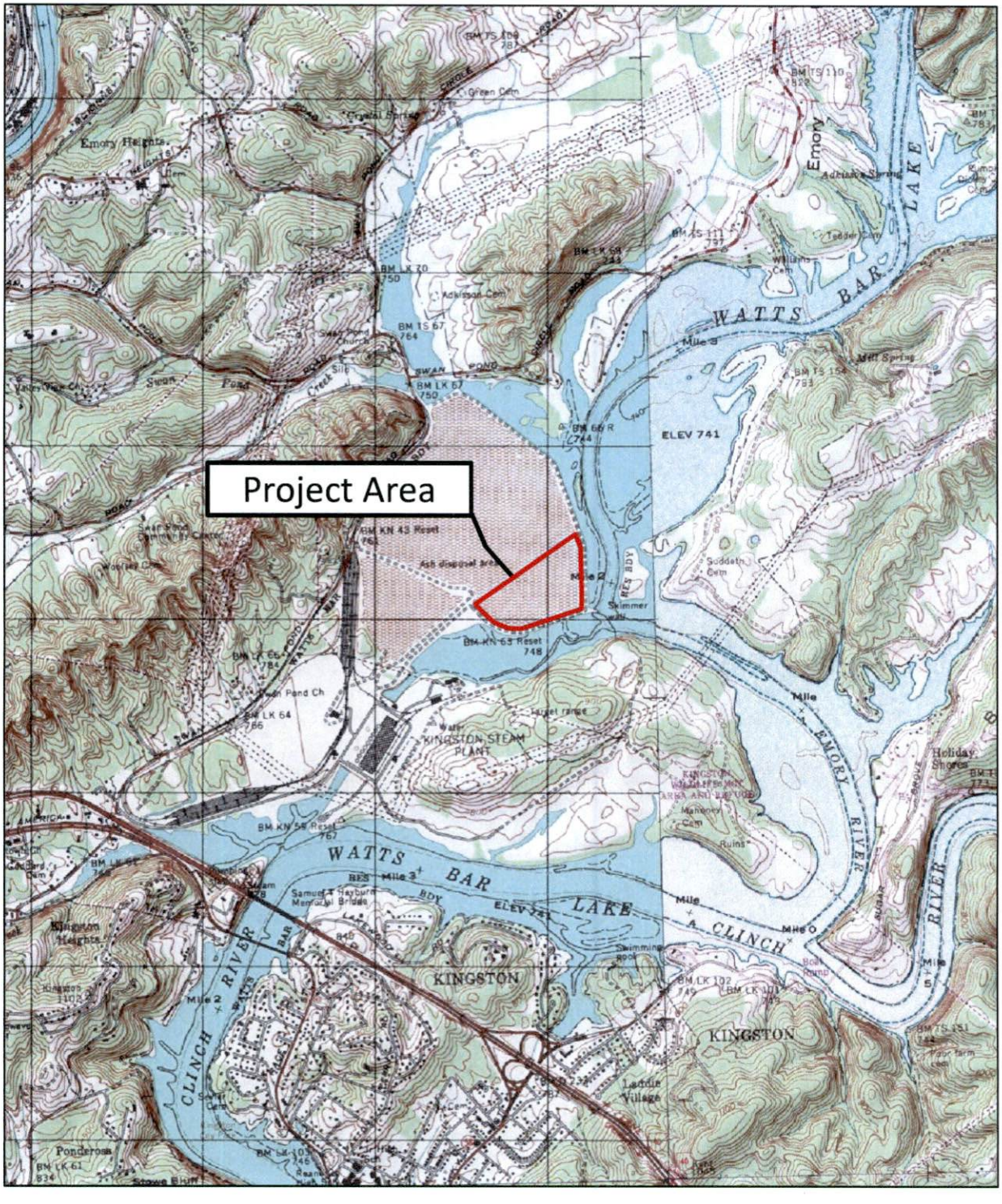
Contractor signatory (print/type): (V.P. level or higher) Max Morton, SVP Power Generation		Signature:	Date: 3/16/17
Mailing Address: 10201 Parkside Dr., Suite 300		City: Knoxville	State: TN — Zip: 37922
Phone: (865) 803-2134	Fax: (865) 392-3011	E-mail: mmorton@pandj.com	

Other Contractor company name (print or type):			
Other Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City:	State: — Zip:
Phone: (865)	Fax: (865)	E-mail:	

OFFICIAL STATE USE ONLY

Received Date:	Reviewer:	Field Office:	Permit Number **TNR**	Exceptional TN Water:
Fee(s):	T & E Aquatic Flora and Fauna:		Impaired Receiving Stream:	Notice of Coverage Date:

(Continued on reverse)



Tennessee Valley Authority
Kingston Fossil Plant
Stilling Pond Closure Project
NOI Site Map

Storm Water Pollution Prevention Plan Revision 0

General NPDES Permit for Discharges of Storm Water Associated with Construction Activities
Kingston Fossil Plant
Harriman, Roane County, Tennessee

Stilling Pond Closure

Stantec Consulting Services Inc.
Design with community in mind
www.stantec.com

Prepared for:
Tennessee Valley Authority
Chattanooga, Tennessee

March 7, 2017

Storm Water Pollution Prevention Plan
Revision 0
General NPDES Permit for Discharges of Storm Water Associated with Construction Activities
Kingston Fossil Plant
Harriman, Roane County, Tennessee

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Site/Owner Information

Project Name/No.:	**Tennessee Valley Authority** **Kingston Fossil Plant** **Stilling Pond Closure Project – 604763**
Site Location (County):	Kingston Fossil Plant, near Harriman, Roane County, Tennessee
Owner/Primary Permittee:	Tennessee Valley Authority
Owner/Primary Permittee Address & Phone:	John Kammeyer 1101 Market Street Chattanooga, TN 37402 Phone: (423) 718-3835
General Contractors (Operator):	TBD
General Contractor Address & Phone:	TBD
Description of Proposed Project:	The Stilling Pond Closure will involve pond drawdown, sediment stabilization, structural fill, a final cap and cover.
Standard that EPSC Measures Meet:	2-year / 24-hour storm event; storm water structures have been generally designed to convey runoff for the 25-year / 24-hour event.

Discharges to Exceptional Tennessee Waters:	No
Discharges to MS4:	No
Is project located within a watershed which maintains an approved TMDL for siltation or habitat alteration? If so, include the 8-digit Hydrologic Unit Code (HUC) to the right.	No
Is project located within a sub-watershed which has a Waste Load Allocation (WLA)? If so, include the 12-digit HUC (or 4-digit sub-watershed code).	No
Does project have a direct discharge to a 303(d) listed stream for siltation or habitat alteration? If so, list stream name to the right.	No

TENNESSEE VALLEY AUTHORITY

STORM WATER POLLUTION PREVENTION PLAN

KINGSTON FOSSIL PLANT

STILLING POND CLOSURE PROJECT

HARRIMAN, TENNESSEE

TENNESSEE VALLEY AUTHORITY

March 7, 2017

Revision 0

Storm Water Pollution Prevention Plan
Revision 0
General NPDES Permit for Discharges of Storm Water Associated with Construction Activities
Kingston Fossil Plant
Harriman, Roane County, Tennessee

1.0 Introduction

This Storm Water Pollution Prevention Plan (SWPPP) has been prepared for the Kingston Fossil (KIF) Plant, which is owned and operated by the Tennessee Valley Authority (TVA). This SWPPP has been prepared to facilitate compliance with the Tennessee Department of Environment and Conservation's (TDEC) General Permit for Discharges of Storm Water Associated with Construction Activities (Permit TNR100000). The existing National Pollutant Discharge Elimination System (NPDES) Permit (TN0005452) remains in effect during construction for effluent limitations and monitoring requirements.

Retaining sediment on-site is imperative for compliance. This project-specific SWPPP contains guidance on the selection of erosion prevention and sediment controls (EPSCs) as well as design and installation requirements. A copy of this SWPPP, along with the inspection records, must be kept on-site and provided to the site Environmental Scientist. A list of SWPPP contacts during construction is provided in **Appendix A**.

This SWPPP addresses the Stilling Pond at the KIF Plant. The Contractor is as specified above in **Site / Owner Information**.

1.1 Stilling Pond

The goal of the Stilling Pond Closure project is to close the pond under the NPDES permit regulatory framework.

The Stilling Pond is located 0.6 miles east of Swan Pond Road near the confluence of the Emory and Clinch Rivers on the Watts Bar Reservoir. It operates as a bottom ash storage pond and stormwater retention pond, serving as the downstream collection point for process and storm water flows from the KIF ash facilities.

Prior to the Stilling Pond Closure project, stormwater flows will be diverted away from the Stilling Pond as part of the Drainage and Flow Management project and directed to Outfall 001 or a new permitted stormwater discharge outlet to facilitate closure.

1.2 Borrow Area

Borrow will be received from off-site sources. Off-site borrow areas will be determined by the Contractor and permitted separately.

On-site material stockpiles are located adjacent to the Ballfield and adjacent to the Peninsula Disposal Area. These stockpiles are anticipated to be used for Zone I and Zone II fill. The approximate locations and volumes of these stockpiles are shown in Appendix B.

2.0 Site Topography

The top of Dike C, which forms the eastern and southern boundary of the Stilling Pond, is at elevation 765 feet and slopes towards the Emory River at grades ranging from 4H:1V to 6H:1V. The upstream face of Dike C slopes down toward the impounded pool at about a 2H: 1V grade. Normal pool is at elevation 753 feet. Varying thicknesses of ash deposits exist within the pool. The Divider Dike, which forms the western boundary of the Stilling Pond, has been buttressed with slopes ranging from 3H: 1V to 4H: 1V.

3.0 Construction Site Description

3.1 Description of Construction Activity

3.1.1 Stilling Pond

The closure design provides for construction of the primary closure components, including sediment stabilization, structural fill, and final cover. The design package consists of stand-alone drawings, specifications, engineering calculations, and other supporting documentation. Copies of the approved design is maintained at the project site to facilitate construction, with the originals archived in TVA's Business Support Library (BSL).

3.1.1.1 Stabilization

Once the Stilling Pond pool is drawn down, some minor excavation and regrading of existing ash will occur around the perimeter of the site along Dike C with the materials placed within the Stilling Pond fill. Then placement of a bridging layer (Zone I) will begin. This layer is used to increase bearing capacity for equipment and embankment construction. The top surface of Zone I will be proof-rolled using heavy equipment prior to Zone II placement to determine suitability. The next layer (Zone II) will be placed in compacted lifts. The top of Zone II will be smooth rolled prior to cap construction and will serve as a base for the cap liner system.

3.1.1.2 Final Cap and Cover

Given the large footprint, restricted crest height (in order to tie in to the Kingston Recovery Project (KRP)), and normal pool levels of Watts Bar Lake, the final cover will be relatively flat across the site (minimum one to two percent slopes). Two alternatives have been developed for the closure cap. Alternative A Closure Cap consists of geotextile cushion, 40 mil LLDPE liner, high capacity geocomposite and two feet of soil cover. This soil cover consists of a layer of plastic soil (18 inches thick) and a topsoil layer (6 inches thick). The Alternative A Closure Cap will be vegetated with turf grasses for erosion protection and site stabilization. Alternative B Closure Cap includes an engineered turf underlain by a structured geomembrane.

The drainage system for the closure design consists of ditches, flume extensions, culverts, and pipes that will be constructed to convey surface water run-on from the KRP landfill, run-off from the closed Stilling Pond and infiltration through the soil cover. Stormwater runoff is directed to the receiving stream, the Emory River.

3.1.2 Borrow Area

Off-site Borrow Areas will be determined by the contractor and will be permitted separately.

On-site material stockpiles are located adjacent to the Ballfield Area and adjacent to the Peninsula Disposal Area. Erosion prevention and sediment control measures will be required to be installed by the Contractor(s) and provisions of this SWPPP shall apply. The Contractor(s) shall be responsible for installing any additional EPSC measures necessary to conform to requirements of TVA and TDEC.

3.2 Construction Schedule and Sequence

The general sequence of major activities is included on the EPSC sheets for the design; refer to drawings in **Appendix C** for the Stilling Pond. The Contractor(s) and QA Manager will use this document and the activity logs found in Appendices and will follow the intended sequence of construction activities at the site. Activity logs that are included as part of this SWPPP include: Major Activities Log (**Appendix D**), Daily Rainfall Gage Records (**Appendix E**), Sequence of Control Measure Implementation, Maintenance, Removal Log (**Appendix F**) and Inspection Form (**Appendix G**).

Once the Stilling Pond has been drawn down, closure will commence. The Divider Dike Ditch constructed for the Drainage and Flow Management Project will be maintained as long as practicable to capture stormwater runoff from the KRP. Accumulated water will be pumped to the Clear Water Channel.

The ash remaining in the pond will serve as structural fill subgrade and will be moved and reshaped as needed to accommodate construction. On top of the ash, structural backfill from the stockpile areas will be placed and compacted in a controlled manner with specified lift thicknesses and compaction targets to the liner subgrade elevations established for closure. After the subgrade is approved by the

Engineer of Record and the Installer, the liner will be placed from upgradient to downgradient to mitigate against sediment deposition during rainfall events. Once liner installation is approved, the geocomposite and underdrain pipe system will be constructed on top of the liner. TDOT No. 57 aggregate and geotextile will be placed over the underdrain pipes. Headwalls and pipes directing surface water runoff and collected infiltration from the Stilling Pond area to the Emory River will also be installed. These pipes will contain flap valves on the downstream end to prevent backwater from the Emory River entering the closed Stilling Pond area. Once the liner and geocomposite have been placed, the closure cap will be constructed.

4.0 Facility Area and Disturbed Area

The total disturbed area subject to Tennessee Construction General Permit coverage is approximately 43 acres, which includes the closure project area, and the on-site material stockpiles. Other areas not identified to be disturbed will generally consist of construction access roads and laydown areas.

5.0 Soil Description

The project is located in Roane County, Tennessee. According to maps provided by the Natural Resources Conservation Service on the Web Soil Survey internet site, the project site is denoted as an Ash Disposal Area. A customized soil report can be found in **Appendix H**.

According to the USGS Geologic Map, the site is underlain by Lower Ordovician and Cambrian age limestone and shale bedrock formations. Although not depicted on the geologic mapping, previous drilling programs at the plant indicate that alluvial deposits consisting of fine sands, silty sands, and sandy silts are present at the site, as are commonly found adjacent to rivers.

The quality of discharge from properly implemented and maintained EPSC measures is expected to be sufficient to comply with the terms and conditions of this permit.

6.0 Site Runoff

6.1 Stilling Pond

The pre-project runoff coefficient was determined to be 0.22. The estimated post-project runoff coefficient will be approximately 0.34. Increase in runoff coefficient is due to the removal of ponded water, resulting in more efficient transport of surface runoff. Runoff coefficient calculations are included in **Appendix I**.

7.0 Site Overview Figure and Drawings

No streams, wetlands, or sinkholes have been identified in the proposed construction area. This project does not discharge into waters impaired by siltation and/or habitat alteration, and does not discharge into an existing MS4.

The water from the Stilling Pond discharges into the waters of the State of Tennessee (Emory River in Watts Bar Lake) via the current National Pollutant Discharge Elimination System (NPDES) permitted Outfall 001. Information on the Outfall is included in Table 1. This project discharges into waters with an approved TMDL for Polychlorinated Biphenyls (PCBs) and Chlordane in Watts Bar Reservoir. PCBs and Chlordane should not increase due to construction activities.

Table 1. Outfall Information

Outfall Point No.	Latitude / Longitude	Drainage Location Description	Discharge Waters
1	35.904289/ -84.505668	Outfall 001 - Emory River, Watts Bar Lake	Emory River

Included in **Appendix J,** the Site Overview Figure depicts the outfall locations. The proposed construction areas and the required BMPs for the Stilling Pond Closure project are included in the drawings in **Appendix C**. For additional details, refer to the TDEC Erosion & Sediment Control Handbook for BMPs.

8.0 Non-Construction Discharges

The KIF Plant facility operates under Tennessee Department of Environment and Conservation NPDES Permit (TN0005452). In addition, discharges of industrial storm water from the plant site are permitted under the Tennessee Multi-Sector General Permit (TMSP) for Industrial Activities (TNR053187).

9.0 Receiving Waters

No wetlands have been identified within the proposed construction area or limits of disturbance. Long-term storm water structures are designed to convey runoff for the 25 year / 24-hour event with a minimum of 0.5 feet of freeboard.

Discharges are covered under the TMSP TNR100000 and the NPDES Permit TN0005452. The receiving waters are the Emory River in Watts Bar Lake.

Areas that will have soil disturbance are designated on the erosion prevention and sediment control plans by the disturbed area boundary. It is recommended that silt fence, rock silt checks, rock filter berm, wattles, turbidity curtain and other EPSC measures are placed within these lines/boundaries to protect receiving waters. The Contractor(s) may add or revise EPSC measures approved by the site Environmental Scientist.

10.0 Erosion Prevention and Sediment Controls

The goal of this SWPPP is to maintain and protect the natural, physical, and biological characteristics and functions (e.g., no significant changes in the hydrological regime or pollutant input) of the receiving water by minimizing the dislodging and suspension of soil in runoff and by retaining mobilized sediment on-site. Construction activities will conform to the following general practices with regard to EPSC. Specific Best Management Practices (BMPs) for this project are also described and shown in **Appendix C** and described in the Tennessee Erosion and Sediment Control Handbook.

10.1 Pre-Construction and During Construction

Pre-construction planning should be used to sequence major grading activities to minimize the exposure time of graded or denuded areas. The EPSC measures and/or plans shall be modified as necessary so that they are effective at all times throughout the course of the project. The Contractor(s) will be responsible for the implementation and execution of all storm water runoff controls. Pre-construction ground cover will not be destroyed, removed, or disturbed more than 14 days prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed.

Temporary erosion control measures may be removed at the beginning of the workday, but will be replaced at the end of the day and prior to any anticipated rainfall event. The structural controls to be used on this project and their placement are identified on the erosion prevention and sediment control plans in **Appendix C.**

10.2 Stabilization, Structural, and Non-Structural Controls

Storm water runoff controls for the proposed project will consist of the structural control measures themselves and the maintenance and inspection practices discussed later in this SWPPP. They have been designed to retain sediment on the project site. The following paragraphs describe the sequence of major construction activities that are planned for the site and the general stabilization and structural practices that will be associated with each activity. They also identify the party responsible for implementing the SWPPP.

10.2.1 Clearing and Grubbing

General Requirements: Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Erosion prevention and sediment control structures must be in place and functional before clearing, grubbing, excavation, grading, cutting or filling occurs; except as such work may be necessary to install erosion prevention and sediment control measures. Project plans, proposal contract, and standard details referenced in the project plans provide additional information regarding requirements for erosion prevention and sediment control and protection of waters of the State and the United States.

Stabilization: Interim and permanent stabilization practices at site-specific locations are detailed on the erosion prevention and sediment control plan in **Appendix C**. Only the areas where grading and earth-moving activities are planned within 14 days will be cleared unless they are to be subsequently seeded and/or mulched or other temporary cover is installed. Stabilization practices rely primarily on seeding of cleared and grubbed areas prior to other construction activities. Temporary seeding will be accomplished by using seed groups adapted for germination and growth during the subject season. Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible.

Structural Practices: Structural practices include silt fence, rock silt checks, rock filter berms, wattles, and turbidity curtain. These items will be installed prior to and during clearing operations.

For an outfall with a drainage area of a total of ten (10) acres or more, a temporary (or permanent) sediment basin that provides storage for the calculated volume of runoff from a 5-year, 24-hour storm and runoff from each acre drained, or equivalent control measure, shall be provided until final stabilization of the site. Runoff from any undisturbed acreage should be diverted around the disturbed area and the sediment basin and, if so, can be omitted from the volume calculation. Sediment storage expected from the disturbed areas must be included and a marker installed within the basin signifying a cleanout level for maintenance.

The Stilling Pond closure project will utilize control measures equivalent to a sediment basin. During construction the existing outlet structure will be removed. New outlet pipes will be blocked off after installation so that runoff is maintained within the disturbed area boundary. This water will be pumped to the Clear Water Channel for further treatment. From the Clear Water Channel, the water will be discharged into a polishing pond, which will act as a structural control measure to reduce sediment prior to the water being discharged to the Emory River through the facility NPDES permitted Outfall 001. The total drainage area of the Stilling Pond is approximately 62 acres. Based on the TDEC Erosion and Sediment Control Handbook, 4th edition, a sediment pond with a minimum total volume of 8,308 cubic yards would be required (134 yd^3/acre). Discharge from the Stilling Pond area to the polishing pond will be limited to approximately 6.6 million gallons per day (10.5 cubic feet per second). Based on this flowrate and the TDEC Erosion and Sediment Control Handbook, a sediment pond with a surface area of .105 acres (.01 x peak flow) would be required. The polishing pond has a volume of approximately 90,000 cubic yards and a surface area of approximately 7 acres. Therefore, the polishing pond is equivalent to the sediment basin that would be required for closure of the Stilling Pond.

The current Total Suspended Solids (TSS) effluent limitations are 29.9 mg/l (average monthly) and 92.0 mg/l (daily). Only once final stabilization is achieved will the stormwater outlet pipes be allowed to discharge at NPDES permitted Outfall 001.

Responsible Party: The Contractor will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity.

10.2.2 Grading and Excavation

General Requirements: Project plans, proposal contract, and standard details referenced in the project plans provide additional information regarding requirements for erosion prevention and sediment control and protection of waters of the State and the United States.

Stabilization Practices: Stabilization practices for this sequence include bringing cut and fill slopes to final grade and stabilizing during the embankment construction with sod, engineered turf, and/or seeding and mulching as construction allows. Stabilization measures shall be initiated as soon as practicable on portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity on that portion of the site has temporarily or permanently ceased, except in the following two situations: 1) where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy conditions, stabilization measures shall be initiated as soon as practicable; or 2) where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 working days, temporary stabilization measures do not have to be initiated on that portion of the site. Temporary or permanent stabilization will be completed within 14 days of final grading or earth-moving activities. Permanent or Temporary seeding will be accomplished by using seed groups adapted for germination and growth during the subject season. Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible.

Structural Practices: Structural practices for grading and excavation will include sedimentation basins (or equivalent), installation of silt fence (along earth slopes), installation of rock filer berms (along rock slopes), wattles, turbidity curtain, sod, engineered turf, and/or seeding and mulching as required, and construction of rock silt checks in drainage ditches. This will include the final dressing of slopes, placement of topsoil, and vegetation or engineered turf.

Responsible Party: The Contractor will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity.

10.2.3 Final Stabilization

General Requirements: Project plans, proposal contract, and Tennessee Department of Transportation (TDOT) standard details referenced in the project plans provide additional information regarding requirements for erosion and siltation control and protection of waters of the State and the United States.

Stabilization Practices: Final stabilization will consist of seeding and/or mulching, sod, or engineered turf. Permanent seeding will be accomplished by using seed groups adapted for germination and growth during the subject season.

Delay in planting cover vegetation until winter months (December – March) should be avoided, if possible. Stabilization will be completed within 14 days after final grading or earth-moving activities have ceased.

Structural Practices: All permanent structural practices have been completed at this point of the project. After final stabilization has been achieved, all silt fencing, rock silt checks, and other EPSC measures will be removed to prevent them from becoming pollutants.

Responsible Party: The Contractor will be responsible for the implementation, maintenance, and inspection of the SWPPP structural practices during this construction activity.

10.3 Post-Construction

The Owner does not anticipate any project-derived pollutants will occur after construction operations have been completed. The stabilized site should not present a significant increase in runoff or pollutants into the receiving waterway. Although maintenance and operation of the storm water management measures is not required by the permit, after discharges associated with construction activities have been eliminated from the site, the Owner will provide for routine maintenance of facilities. Maintenance of the site will include mowing grassed areas and/or maintaining engineered turf.

10.3.1 Pollutant Controls

Procedures will include debris removal from drainage structures and trash removal and disposal from the installed facilities. Maintenance of the drainage flume extensions and ditches, underdrain, center drain, and outlet pipes and structures will be the responsibility of the Owner.

10.3.2 Velocity Controls

The project includes the installation of sod, engineered turf, and/or seeding and mulching to reduce flow velocities on-site, post-construction. Turf reinforcement mat will be installed along the ditches and flumes.

11.0 Storm Water Management

11.1 Required Records

The Contractor will maintain at the site the following records of construction activities:

a. The dates when major grading activities occur.

b. The dates when construction activities temporarily or permanently cease on a portion of the site.

c. The dates when stabilization measures are initiated.

d. Records of inspections and corrective measures, including photographs of representative items requiring correction and the corrective action taken for it.

e. Detailed records of rainfall events including dates, amounts of rainfall, and the approximate duration or starting and ending times (see **Appendix E** for sample form).

11.2 Rainfall Monitoring Plan

Erosion prevention and sediment control measures and devices are utilized to minimize the dislodging and suspension of soil in runoff and to retain mobilized sediment on-site. Storm water runoff is directly proportional to the intensity and duration of a given rainfall event. Rainfall monitoring is necessary in order to estimate the effectiveness of erosion prevention and sediment control measures and devices at the construction site. The intent of the plan is to provide a means to record the volume of rainfall and the time period in which it fell in order to estimate the intensity of the rainfall event. Permittees shall maintain a rain gage and daily rainfall records at the site, or use a reference site for a record of daily amount of precipitation.

11.2.1 Equipment

If an on-site rain gage is used, the following requirements shall be met. At a minimum, a fence post type rain gage will be used to measure rainfall. The standard fence post rain gage shall be a wedge-shaped gage that measures up to six (6) inches (150 mm) of rainfall (e.g. Tru-Chek® Direct-Reading Rain Gage). An English scale should be provided on one face, with a metric scale on the other face. Graduation shall be permanently molded in durable weather-resistant plastic. The minimum graduations shall be 0.01 inch (0.1 mm). An aluminum bracket with screws may be used for mounting the gage on a wooden support.

11.2.2 Location

The rain gage will be located at or along the project site, as defined in the NOI of the NPDES Permit, in an open area such that the measurement will not be influenced by outside factors (i.e. overhangs, gutters, trees, etc.). At least one rain gage will be located within each linear mile (as measured along the centerline of the primary alignment) of the project where clearing, grubbing, excavation, grading, cutting or filling is being actively performed, or exposed soil has not yet been permanently stabilized.

11.2.3 Methods

The rain gage or reference site data shall be checked after every rainfall event occurring on the project site. Detailed records of the rainfall event(s) including dates, amounts of rainfall, and the approximate duration or starting and ending times shall be maintained.

11.3 Maintenance

Maintenance activities will be undertaken to ensure that vegetation, erosion prevention and sediment control measures, and other protective measures identified in the site Erosion Prevention and Sediment Control Plans are kept in good and effective operating condition. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event, but in no case more than seven days after the need is identified. The need for maintenance will be determined through the inspection procedures listed below and will include, but not be limited to, the following practices:

a. Observation of control measures to determine compliance with the manufacturer's specifications and good engineering practices for installation and use of the control;

b. Removal of off-site sediment accumulations from the project site that have not reached a sinkhole and/or stream such that off-site impacts are minimized (Note: Sediment accumulations from the project site that have reached sinkholes and/or streams must not be removed until after consultation with TDEC);

c. Removal of sediment from silt fence, rock filter berms, and rock silt checks, and other sediment controls when the design capacity has been reduced by 50 percent;

d. EPSC measures such as silt fence, rock filter berms, and rock silt checks that are damaged or degraded due to construction activities or weathering will be replaced prior to the next storm event and no later than seven days after the need is identified; and

e. Pickup or otherwise prevent litter, construction debris, and construction chemicals from becoming a pollutant source prior to anticipated storm events.

In addition to the practices listed above, the project will be inspected as required by this SWPPP to ensure the maintenance and effectiveness of the erosion prevention and sediment control measures. A Sequence of Control Measure Implementation, Maintenance, and Removal Log is provided in **Appendix F**.

11.4 Inspection

The inspection schedule and documentation procedures have been designed to keep vegetation, erosion and sediment control measures, and other protective measures identified in the SWPPP in good and effective operating condition.

If the site description and pollution prevention measures in the SWPPP need to be revised based on the results of the inspection, those revisions will be completed as appropriate, but no later than seven calendar days following the inspection identifying the need.

11.4.1 Schedule

Our review of the Tennessee Department of Environment and Conservation's Draft 2016 303(d) List indicates that the project **will not** discharge to bodies of water listed for siltation or habitat alteration, **will not** discharge into Exceptional Tennessee Waters, and **will** discharge to waters with an approved TMDL for PCBs and Chlordane in Watts Bar Reservoir.

The schedule for Erosion Prevention and Sediment Control inspections will be as follows:

a. At least twice per calendar week, at least 72 hours apart, during any construction and thereafter until the site is fully constructed and all disturbed areas not paved, concreted, or covered by stone are permanently stabilized with a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent or with engineered turf.

11.4.2 Documentation Requirements

Inspections will be documented in writing and include the following:

a. Scope of the inspection;
b. Name(s) and title or qualifications of personnel making the inspection;
c. The date(s) of the inspection;
d. Major observations relating to the implementation of the SWPPP, including the location(s) of discharges of sediment or other pollutants from the site and of any control devices that failed to operate as designated or proved inadequate for a particular location; and
e. Actions taken to replace, modify, or repair any control measures identified as inadequate or in disrepair during inspections.

All inspections shall be documented on the Construction Storm Water Inspection Certification form provided in **Appendix G** of this SWPPP.

11.4.3 Areas to be Inspected

Qualified personnel will inspect disturbed areas of the construction site that have not been finally stabilized for evidence of, or the potential for, pollutants to enter the drainage system. These areas include, but are not limited to, the following:

a. A site assessment shall be conducted at each outfall involving drainage totaling 10 or more acres, within a month of construction commencing at each portion of the site that drains the qualifying acreage of such portion of the site. This site assessment must be performed by a Professional Engineer (PE), Landscape Architect, Certified Professional in Erosion and

Sediment Control (CEPSC), or a person who has successfully completed Level II Design Principles for EPSC for Construction Sites.

b. Disturbed areas and areas used for storage of materials that are exposed to precipitation;

c. Erosion prevention and sediment control measures identified in the SWPPP shall be inspected to verify installation, functionality and performance;

d. Where outfall locations are inaccessible, the nearest possible downstream locations shall be inspected;

e. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking. The access roads are shown on the EPSC Plans.

f. Fueling station(s) on-site (if applicable – See Section 12.3)

These inspection requirements do not apply to definable areas of the site that have met the final stabilization requirement and have been noted in the SWPPP.

11.4.4 Repairs, Modifications, and Revisions

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next storm event, but in no case more than seven days after the need is identified.

11.4.5 Inspector Training and Certification

Inspectors performing the required twice weekly inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. A copy of the certification or training record for inspector certification should be kept on site with the SWPPP.

12.0 Other Items Requiring Control

12.1 Construction Materials

Construction materials that are anticipated to be present at this construction site include:

- Earth
- Rock
- Geosynthetic Materials
- HDPE Pipe
- Mineral Aggregates
- Concrete/Grout

- Headwalls
- Flap Gates
- Hydromulch
- Seed
- Soil Amendments (lime, fertilizer)
- Demolition Materials

Stockpiled erodible construction materials will be secured by control measures down gradient of the stockpiles. Non-erodible materials will be picked up to prevent them from polluting storm water.

The Contractor may keep several portable storage units on the project site to store construction equipment.

12.2 Waste Materials

All trash and construction debris from the site shall be hauled to an approved landfill. No construction waste material shall be buried on the site. Employee waste and other loose materials shall be collected and properly disposed to prevent the release of floatable material during runoff events. Clearing debris will be disposed of in accordance with state and local regulations.

12.3 Other Materials

Other materials not used for construction, but needed for construction at the proposed site must also be controlled to prevent pollution of the receiving waters. These items include, but are not limited to, the storage and dispensing of the following:

- Diesel and Gas
- Machinery Lubricants (oil and grease)
- Cleaning Solvents

Soils at fueling stations should be checked daily for signs of spillage or staining of the soil. Any fixed fueling station/tank storage shall have a containment system to prevent runoff by potential spills or tank rupture. Machinery should be serviced or repaired to prevent leaks of fluids.

The Contractor will be responsible for compliance with all applicable Environmental Protection Agency (EPA) and USDOT guidelines regarding equipment-related fluids as well as all National Fire Protection Association regulations regarding flammable liquids. No construction materials are expected to produce pollutant runoff.

12.4 Non-Storm Water Discharges

The following non-storm water discharges have potential for occurring from the site during the construction period:

a. Groundwater may be intercepted during the construction of this project. While these locations are yet unknown, the SWPPP will be modified to incorporate these areas should they arise;

b. Pavement wash waters (where there have been no spills or leaks of toxic or hazardous materials);

c. Dust suppression water; and

d. Water used to wash vehicles (where detergents are not used and detention and/or filtering are provided before the water leaves the site).

All non-storm water discharges will be directed to stable discharge reduction structures prior to leaving the site outfall. Wash down or waste discharge of concrete trucks will not be permitted on-site unless a proper settlement area has been constructed in accordance with both state and federal regulations.

13.0 Requirements for Plans and Reports

13.1 Keeping SWPPP Current

The Owner will amend the SWPPP when any of the following conditions apply:

a. Whenever there is a change in the scope of the project that would be expected to have a significant effect on the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the SWPPP;

b. Whenever inspections or investigations by the Contractor, QC Manager, local, state, or federal officials indicate the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from construction activity sources, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity;

c. When any new Contractor and/or sub-Contractor is assigned or relieved of their responsibility to implement a portion of the SWPPP; and

d. When the SWPPP must be modified to prevent a negative impact to legally protected state or federally listed or proposed threatened or endangered aquatic fauna.

13.2 Making Plans Accessible

The Contractor and QC Manager will retain a copy of this SWPPP (including a copy of the permit language and all reports) at the construction site (or other local location accessible to TDEC and the public) from the date construction commences to the date of final stabilization. The Contractor (who will have operations control over daily pollution prevention plan implementation) will have a copy of the SWPPP available at the location where work is occurring on-site for the use of operators and those identified as having responsibilities under the SWPPP whenever they are on the construction site.

Prior to the initiation of land disturbing activities and until the site has met the final stabilization criteria, the Contractor will post a notice near the main entrance of the construction site with the following information:

a. A copy of the Notice of Coverage (NOC) with the NPDES permit number for the project;

b. The name and telephone number of a local contact person;

c. A brief description of the project; and

d. The location of the SWPPP (especially important if the site is inactive or does not have an on-site location at which to store the SWPPP).

If posting this information near a main entrance is infeasible due to safety concerns, the notice shall be posted in a local building. An example of the general information notice is attached in **Appendix K**. The notice must be placed in a publicly accessible location where construction is actively underway and moved as necessary. The Owner understands that this permit does not provide the public with any right to trespass or require that the Owner allow members of the public to access a construction site for any reason, including inspection of a site.

13.3 Notice of Termination

When all storm water discharges from construction activities that are authorized by the permit are eliminated by final stabilization, the Owner will submit a Notice of Termination (NOT) that is signed in accordance with the permit. For the purposes of the certification required by the NOT, the elimination of storm water discharges associated with the construction activity is understood to mean the following:

a. That all disturbed soils at the portion of the construction site where the Contractor had control to have been finally stabilized;

b. Temporary erosion and sediment control measures are no longer necessary and have been removed; or

c. That all storm water discharges associated with construction activities from the identified site that are authorized by an NPDES general permit have otherwise been eliminated from the portion of the construction site where the Contractor had control.

The NOT will be submitted on the Tennessee Department of Environment and Conservation's NOT form provided in **Appendix L** of this SWPPP.

13.4 Retention of Records

The Owner will retain copies of the SWPPP, all reports required by the permit, and records of all data used to complete the Notice of Intent for the project for a period of at least three (3) years from the date the NOT was filed. The Owner is aware the period may be extended by written request of the Director.

14.0 Certifications

OWNER'S CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

OWNER – Tennessee Valley Authority

Signed: _____ 3-17-2017

John Kammeyer Date

CONTRACTOR'S CERTIFICATION

"I certify under penalty of law that that I have reviewed this document, any attachments, and the Storm Water Pollution Prevention Plan (SWPPP) referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this Notice of Intent (NOI) and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to National Pollutant Discharge Elimination System (NPDES) permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations and for failure to comply with these permit requirements."

General Contractor: Phillips and Jordan, Incorporated

Signed: _____ 3/16/17
Date

General Contractor: _____

Signed: _____ _____
Date

General Contractor: _____

Signed: _____ _____
Date

General Contractor: _____

Signed: _____ _____
Date

Appendix A

Storm Water Pollution Prevention Plan Contacts

Storm Water Pollution Prevention Plan Contacts

Kingston Fossil Plant
714 Swan Pond Road
Harriman, Tennessee

Stilling Pond Closure

Operator(s):
Tennessee Valley Authority
Kingston Fossil Plant
Doug Keeling, Plant Manager
714 Swan Pond Road
Harriman, TN37748
Phone:(865) 717-2500
bdkeelin@tva.gov

Engineering Manager:
Tennessee Valley Authority
Rachel Combs, TVA Engineering Manager
1101 Market Street, LP 4T-C
Chattanooga, Tennessee 34702
Phone: 423-506-1339

Project Manager:
Tennessee Valley Authority
Louis Smythe, TVA Project Manager
TVA Kingston Fossil Plant
714 Swan Pond Road
Harriman, TN 37748-8327
Trailer #2
Phone: 423-260-3642

This SWPPP was Prepared by:
Stantec Consulting Services Inc.

Emily Groves
1409 North Forbes Road
Lexington, KY 40511
Phone: (859) 422-3000

Plant Environmental Scientist
Tennessee Valley Authority Kingston Fossil Plant
Cynthia McCowan
714 Swan Pond Road
Harriman, TN37748
Phone: (865) 717-2531
cowebb@tva.gov

Integrated Pollution Prevention (IPP) Plan Coordinator
Tennessee Valley Authority Kingston Fossil Plant
Brandi Ruth
4200 Greenway Drive
Knoxville, TN 37918
Phone: (865) 673-2358

NPDES Water Specialist
Tennessee Valley Authority Kingston Fossil Plant
Brad Love
1101 Market Street, 5D Lookout Place
Chattanooga, Tennessee 37402
Phone: (423) 751-8518

Emergency 24-Hour Contact
Tennessee Valley Authority
Shift Operations Supervisor
(865)717-2119 or 865-717-2120

Appendix B

Stockpile Areas

Stantec

Legend
- Stockpile Areas
- Stilling Pond Closure Area
- Outfall Locations

Notes
1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Aerial Imagery from TVA dated 2015.
3. Outfall 01A and 002 not shown.
4. Stockpile locations and volumes based on survey information collected by TVA in March, 2016 (Stockpile 1) and May, 2016 (Stockpiles 2-5).

Stockpile Number	Volume (Cubic Yards)
1	18,015
2	122,240
3	786
4	47,663
5	1,232

0 1,000 2,000 Feet

1:10,931 (At original document size of 11x17)

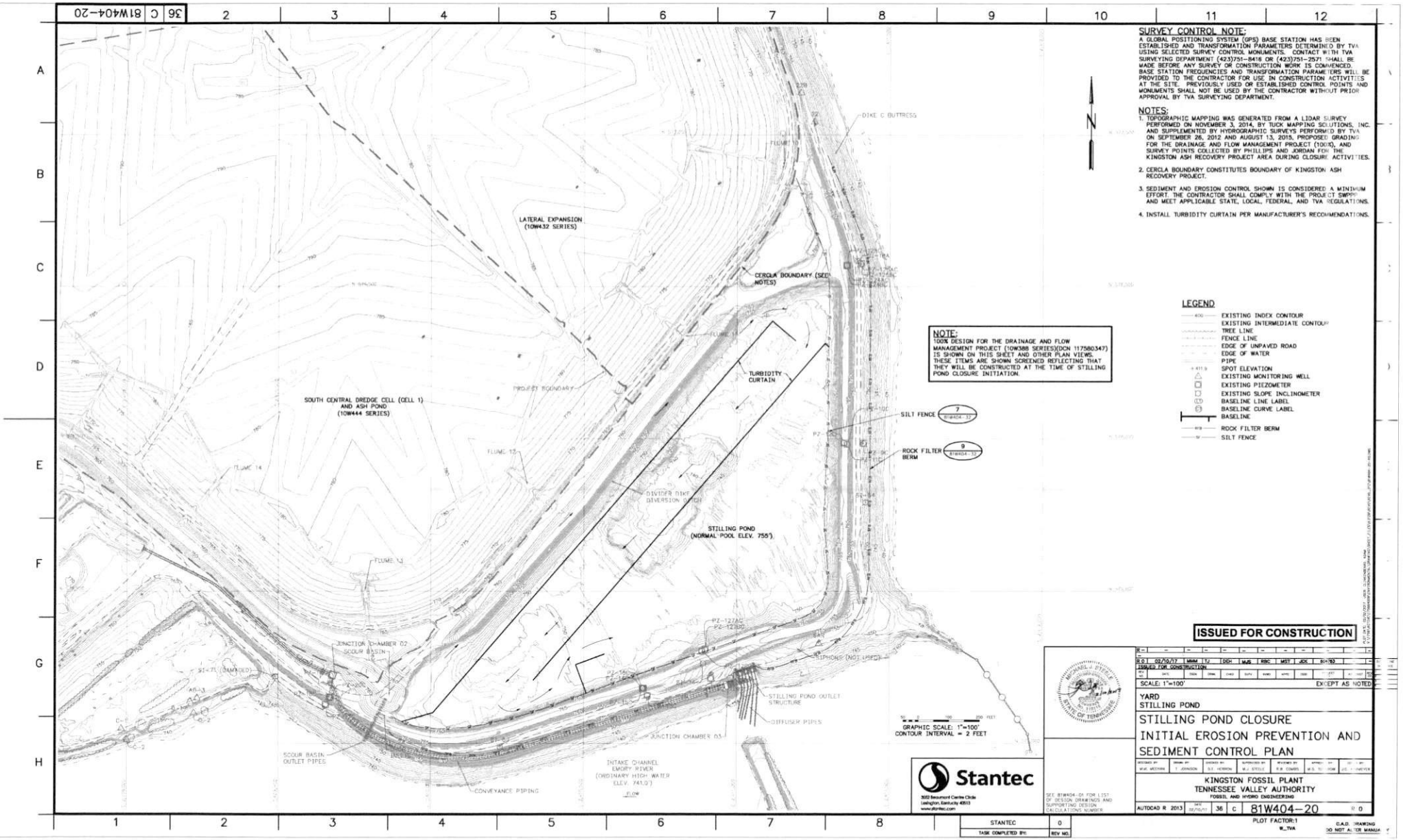
Client/Project
Tennessee Valley Authority
Kingston Fossil Plant
Storm Water Pollution Prevention Plan

Figure No.
1

Title
Stockpile Areas
Kingston Fossil Plant
Roane County, Tennessee

Appendix C

EPSC Drawings


SURVEY CONTROL NOTE:
A GLOBAL POSITIONING SYSTEM (GPS) BASE STATION HAS BEEN ESTABLISHED AND TRANSFORMATION PARAMETERS DETERMINED BY TVA USING SELECTED SURVEY CONTROL MONUMENTS. CONTACT WITH TVA SURVEYING DEPARTMENT (423)751-8418 OR (423)751-2571 SHALL BE MADE BEFORE ANY SURVEY OR CONSTRUCTION WORK IS COMMENCED. BASE STATION FREQUENCIES AND TRANSFORMATION PARAMETERS WILL BE PROVIDED TO THE CONTRACTOR FOR USE IN CONSTRUCTION ACTIVITIES AT THE SITE. PREVIOUSLY USED OR ESTABLISHED CONTROL POINTS AND MONUMENTS SHALL NOT BE USED BY THE CONTRACTOR WITHOUT PRIOR APPROVAL BY TVA SURVEYING DEPARTMENT.
NOTES:
1. TOPOGRAPHIC MAPPING WAS GENERATED FROM A LIDAR SURVEY PERFORMED ON NOVEMBER 3, 2014, BY TUCK MAPPING SOLUTIONS, INC. AND SUPPLEMENTED BY HYDROGRAPHIC SURVEYS PERFORMED BY TVA ON SEPTEMBER 26, 2012 AND AUGUST 13, 2015. PROPOSED GRADING FOR THE DRAINAGE AND FLOW MANAGEMENT PROJECT (100%), AND SURVEY POINTS COLLECTED BY PHILLIPS AND JORDAN FOR THE KINGSTON ASH RECOVERY PROJECT AREA DURING CLOSURE ACTIVITIES.
2. CERCLA BOUNDARY CONSTITUTES BOUNDARY OF KINGSTON ASH RECOVERY PROJECT.
3. SEDIMENT AND EROSION CONTROL SHOWN IS CONSIDERED A MINIMUM EFFORT. THE CONTRACTOR SHALL COMPLY WITH THE PROJECT SWPPP AND MEET APPLICABLE STATE, LOCAL, FEDERAL, AND TVA REGULATIONS.
4. INSTALL TURBIDITY CURTAIN PER MANUFACTURER'S RECOMMENDATIONS.
NOTE:
100% DESIGN FOR THE DRAINAGE AND FLOW MANAGEMENT PROJECT (10W388 SERIES)(DGN 117580347) IS SHOWN ON THIS SHEET AND OTHER PLAN VIEWS. THESE ITEMS ARE SHOWN SCREENED REFLECTING THAT THEY WILL BE CONSTRUCTED AT THE TIME OF STILLING POND CLOSURE INITIATION.
LEGEND
EXISTING INDEX CONTOUR
EXISTING INTERMEDIATE CONTOUR
TREE LINE
FENCE LINE
EDGE OF UNPAVED ROAD
EDGE OF WATER
PIPE
SPOT ELEVATION
EXISTING MONITORING WELL
EXISTING PIEZOMETER
EXISTING SLOPE INCLINOMETER
BASELINE LINE LABEL
BASELINE CURVE LABEL
BASELINE
ROCK FILTER BERM
SILT FENCE
N
DIKE C BUTTRESS
LATERAL EXPANSION (10W432 SERIES)
CERCLA BOUNDARY (SEE NOTES)
TURBIDITY CURTAIN
PROJECT BOUNDARY
SOUTH CENTRAL DREDGE CELL (CELL 1) AND ASH POND (10W444 SERIES)
SILT FENCE
ROCK FILTER BERM
FLUME 13
FLUME 14
DIVIDER DIKE DIVERSION DITCH
STILLING POND (NORMAL POOL ELEV. 755')
FLUME 13
JUNCTION CHAMBER 02 SCOUR BASIN
SI-7S (DAMAGED)
SIPHONS (NOT USED)
STILLING POND OUTLET STRUCTURE
DIFFUSER PIPES
GRAPHIC SCALE: 1"=100'
CONTOUR INTERVAL = 2 FEET
JUNCTION CHAMBER 03
SCOUR BASIN OUTLET PIPES
INTAKE CHANNEL EMORY RIVER (ORDINARY HIGH WATER ELEV. 741.0')
CONVEYANCE PIPING
FLOW
ISSUED FOR CONSTRUCTION
R 0 | 02/10/17 | MMM | TJ | DDH | MJS | RRC | MST | JDK | 81W393
ISSUED FOR CONSTRUCTION
SCALE: 1"=100' EXCEPT AS NOTED
YARD
STILLING POND
STILLING POND CLOSURE
INITIAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN
KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING
AUTOCAD R 2013 | 36 | C | 81W404-20 | R 0
PLOT FACTOR:1
W_TVA
C.A.D. DRAWING DO NOT ALTER MANUALLY
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Lexington, Kentucky 40513
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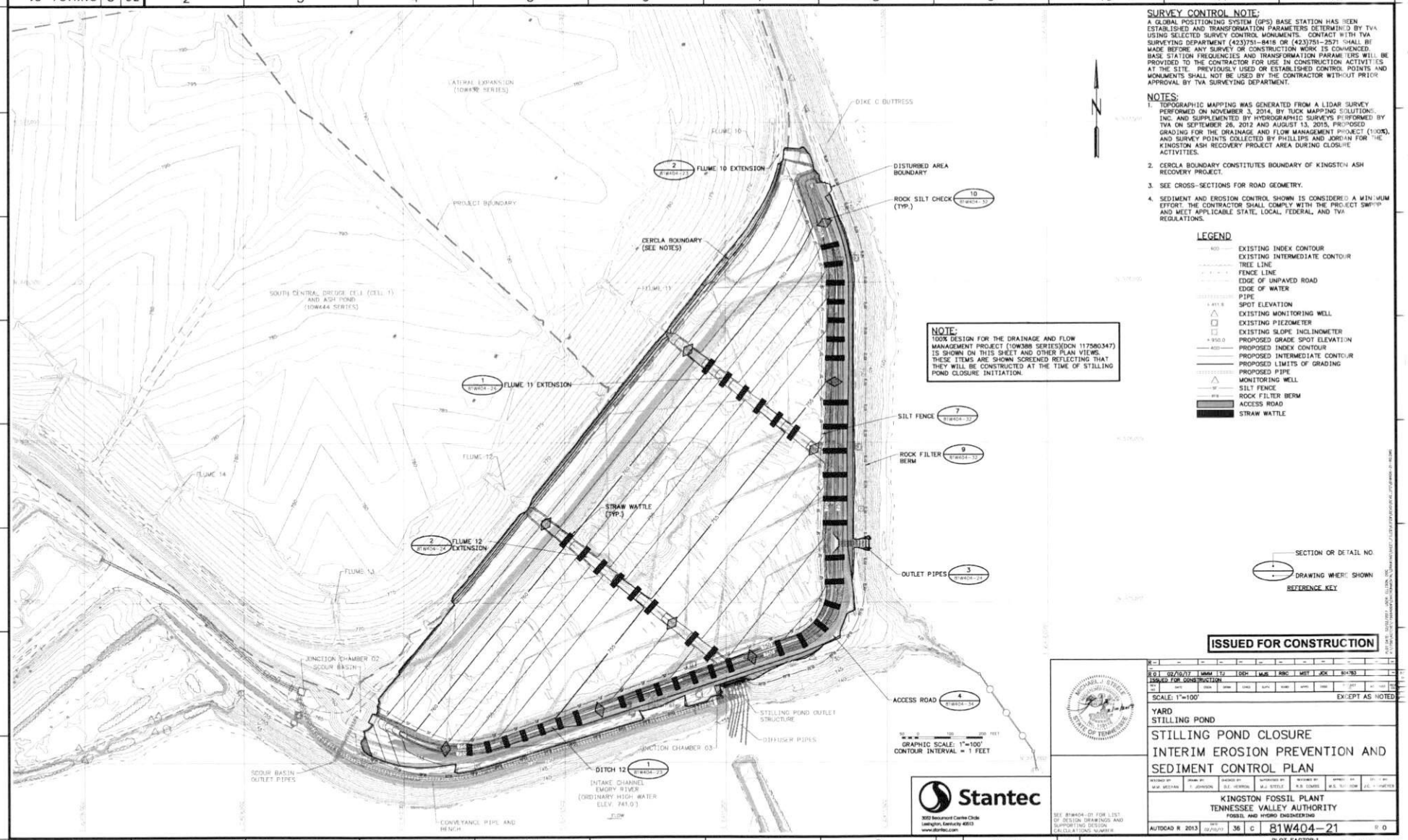
STANTEC | 0
TASK COMPLETED BY: | REV NO.
SEE 81W404-01 FOR LIST OF DESIGN DRAWINGS AND SUPPORTING DESIGN CALCULATIONS NUMBER
36 C 81W404-20



NOTE:
100% DESIGN FOR THE DRAINAGE AND FLOW MANAGEMENT PROJECT (10W388 SERIES)(DCN 117580.347) IS SHOWN ON THIS SHEET AND OTHER PLAN VIEWS. THESE ITEMS ARE SHOWN SCREENED REFLECTING THAT THEY WILL BE CONSTRUCTED AT THE TIME OF STILLING POND CLOSURE INITIATION.

SURVEY CONTROL NOTE:

A GLOBAL POSITIONING SYSTEM (GPS) BASE STATION HAS BEEN ESTABLISHED AND TRANSFORMATION PARAMETERS DETERMINED BY TVA USING SELECTED SURVEY CONTROL MONUMENTS. CONTACT WITH TVA SURVEYING DEPARTMENT (423)751-8418 OR (423)751-2571 SHALL BE MADE BEFORE ANY SURVEY OR CONSTRUCTION WORK IS COMMENCED. BASE STATION FREQUENCIES AND TRANSFORMATION PARAMETERS WILL BE PROVIDED TO THE CONTRACTOR FOR USE IN CONSTRUCTION ACTIVITIES AT THE SITE. PREVIOUSLY USED OR ESTABLISHED CONTROL POINTS AND MONUMENTS SHALL NOT BE USED BY THE CONTRACTOR WITHOUT PRIOR APPROVAL BY TVA SURVEYING DEPARTMENT.

NOTES:

1. TOPOGRAPHIC MAPPING WAS GENERATED FROM A LIDAR SURVEY PERFORMED ON NOVEMBER 3, 2014, BY TUCK MAPPING SOLUTIONS, INC. AND SUPPLEMENTED BY HYDROGRAPHIC SURVEYS PERFORMED BY TVA ON SEPTEMBER 28, 2012 AND AUGUST 13, 2015. PROPOSED GRADING FOR THE DRAINAGE AND FLOW MANAGEMENT PROJECT (100%), AND SURVEY POINTS COLLECTED BY PHILLIPS AND JORDAN FOR THE KINGSTON ASH RECOVERY PROJECT AREA DURING CLOSURE ACTIVITIES.
2. CERCLA BOUNDARY CONSTITUTES BOUNDARY OF KINGSTON ASH RECOVERY PROJECT.
3. SEE CROSS-SECTIONS FOR ROAD GEOMETRY.
4. SEDIMENT AND EROSION CONTROL SHOWN IS CONSIDERED A MINIMUM EFFORT. THE CONTRACTOR SHALL COMPLY WITH THE PROJECT SWPPP AND MEET APPLICABLE STATE, LOCAL, FEDERAL, AND TVA REGULATIONS.

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- TREE LINE
- FENCE LINE
- EDGE OF UNPAVED ROAD
- EDGE OF WATER
- PIPE
- SPOT ELEVATION
- EXISTING MONITORING WELL
- EXISTING PIEZOMETER
- EXISTING SLOPE INCLINOMETER
- PROPOSED GRADE SPOT ELEVATION
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED LIMITS OF GRADING
- PROPOSED PIPE
- MONITORING WELL
- SILT FENCE
- ROCK FILTER BERM
- ACCESS ROAD
- STRAW WATTLE

SECTION OR DETAIL NO.
DRAWING WHERE SHOWN
REFERENCE KEY

ISSUED FOR CONSTRUCTION

REV	DATE	ORIGINATOR	DESIGNED	DRAWN	CHECKED	APPROVED	PROJECT MANAGER
0	02/10/17	MMM	TJ	GCH	MJB	RBC	MST	JCK	104783
ISSUED FOR CONSTRUCTION									

SCALE: 1"=100' EXCEPT AS NOTED

YARD
STILLING POND

STILLING POND CLOSURE
INTERIM EROSION PREVENTION AND SEDIMENT CONTROL PLAN

ASSIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	DATE
M.M. MEEHAN	T. JOHNSON	D.E. HERRON	M.J. BIBLE	R.B. COMER	M.S. TUCKER	J.C. HARPER	02/10/17

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTODAD R 2013 | DATE 02/10/17 | 36 | C | 81W404-21 | 0

PLOT FACTOR:1
W_TVA

C.A.D. DRAWING
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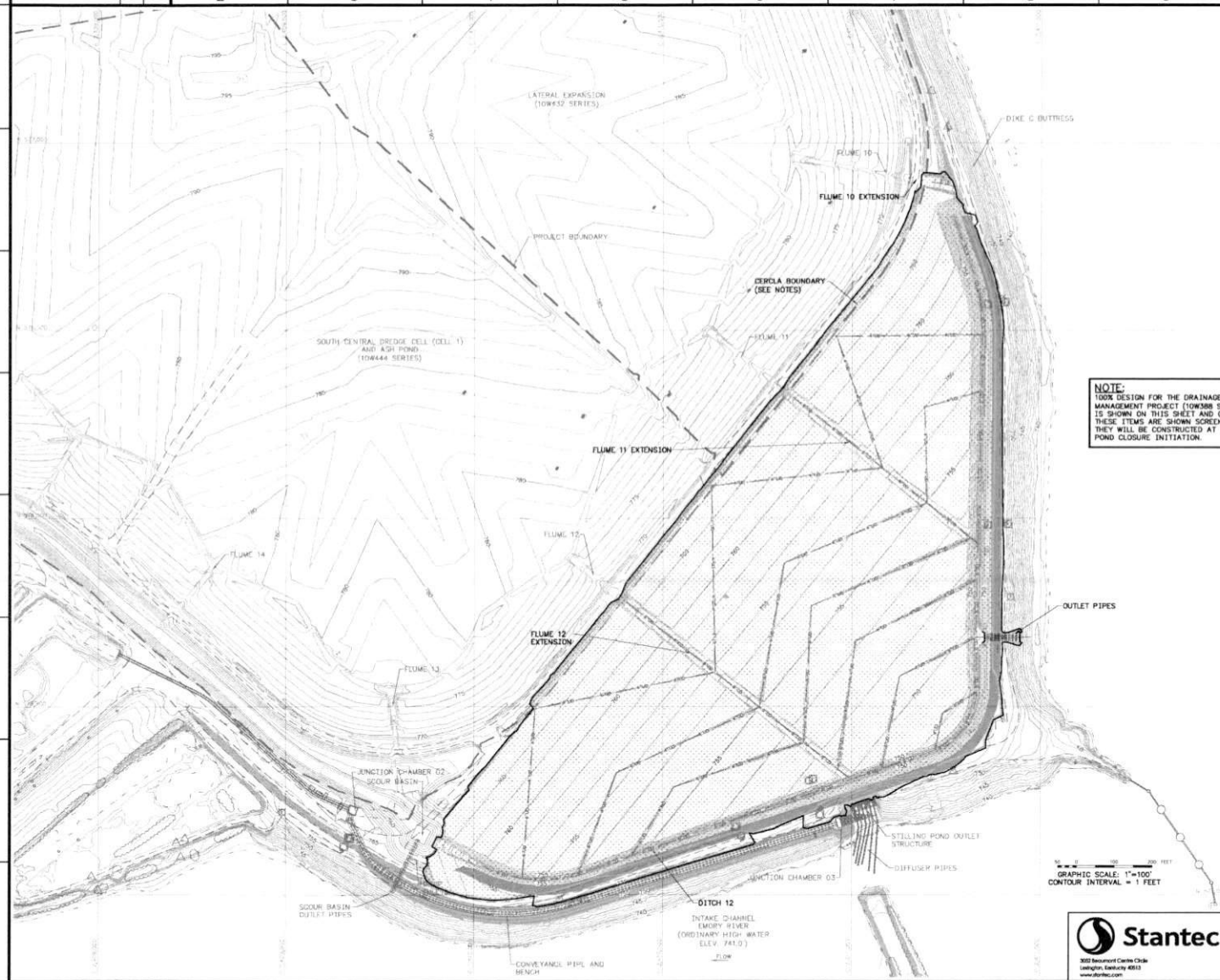
TASK COMPLETED BY: | REV NO.

36 C 81W404-21



NOTE:
100% DESIGN FOR THE DRAINAGE AND FLOW MANAGEMENT PROJECT (10W388 SERIES)(DCN 117580347) IS SHOWN ON THIS SHEET AND OTHER PLAN VIEWS. THESE ITEMS ARE SHOWN SCREENED REFLECTING THAT THEY WILL BE CONSTRUCTED AT THE TIME OF STILLING POND CLOSURE INITIATION.

SURVEY CONTROL NOTE:
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NOTES:
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2. CERCLA BOUNDARY CONSTITUTES BOUNDARY OF KINGSTON ASH RECOVERY PROJECT.
3. SEE CROSS SECTIONS FOR ROAD GEOMETRY.
4. SEDIMENT AND EROSION CONTROL SHOWN IS CONSIDERED A MINIMUM EFFORT. THE CONTRACTOR SHALL COMPLY WITH THE PROJECT SWPPP AND MEET APPLICABLE STATE, LOCAL, FEDERAL, AND TVA REGULATIONS.

LEGEND
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- TREE LINE
- FENCE LINE
- EDGE OF UNPAVED ROAD
- EDGE OF WATER
- PIPE
- SPOT ELEVATION
- EXISTING MONITORING WELL
- EXISTING PIEZOMETER
- EXISTING SLOPE INCLINOMETER
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED LIMITS OF GRADING
- PROPOSED PIPE
- 4" UNDERDRAIN
- 6" CENTER DRAIN
- 8" CENTER DRAIN
- ACCESS ROAD
- VEGETATION OR ENGINEERED TURF

ISSUED FOR CONSTRUCTION

NO.	DATE	DRWN	CHKD	SUPV	ENGG	APPD	ISSD
0	02/10/17	MMM	TJ	DEH	MJS	RBC	MST
ISSUED FOR CONSTRUCTION							

SCALE: 1"=100' EXCEPT AS NOTED

YARD
STILLING POND

STILLING POND CLOSURE FINAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	DATE
M.M. MEYHAN	T. JOHNSON	D.E. HERRON	M.J. STEELE	R.B. COMBS	M.S. [illegible]ROW	J.C. [illegible]HEYER

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2013 | DATE 02/10/17 | 36 | C | 81W404-22 | R 0

PLOT FACTOR:1
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36 | C | 81W404-22

Appendix D

Major Activities Log

MAJOR ACTIVITIES LOG

At a minimum the construction manager or designee shall record dates below for beginning of major grading, dates temporarily cease construction, dates re-commence construction, dates permanently cease construction and dates seeding and or stabilization begins. Include name of person recording activity. It is recommended that activity descriptions be recorded each day. Provide a copy of the form to the site Environmental Scientist when sheet is filled out or on a monthly basis.

Description of Major Activity	Date	Name

Provide to Plant Program Administrator (Environmental) monthly or as completed.

Appendix E

Daily Rainfall Gage Record

Inspect rainfall gage(s) and record daily inches of rain or "none" in measured rainfall column. Sign sheet for each day and present to designated TVA site representative when sheet has been filled and/or construction is complete. If prolonged storm event occurs, it is recommended that erosion control device checks be performed and results recorded on inspection form. Maintain a copy of this form and provide a copy to the Plant Environmental Scientist when the form is complete.

Gage Number	Date	Measured Rainfall (inches)	Inspector's Signature

Appendix F

Sequence of Control Measure Implementation, Maintenance, Removal Log

Sequence of Control Measure Implementation, Maintenance, and Removal Log Form

Log to be maintained onsite and completed each time a control measure is implemented, maintained, or removed

Contractor:_____**Contract No.**:_____Page_____of_____

Control Measure and Location	Implementation, Maintenance, or Removal	Receiving Water (Channel #, etc.)	Foreman Initials	Date

Appendix G

Inspection Form

Tennessee Valley Authority
Tennessee Construction Stormwater Inspection Certification
Twice-Weekly Inspections, 72 hours apart

(With written notification to the state, inspection performed monthly on areas with temporary stabilization. No inspection requirements apply to definable areas that are identified on the SWPPP as having final stabilization).

Site or Project Name:			**NPDES Tracking Number: TNR**	
Primary Permittee Name: Tennessee Valley Authority			Date of Inspection:	
Current approximate disturbed acreage:		Has rainfall been checked/documented daily? ☐Yes ☐ No	Name of Inspector:	
Current weather conditions:			Inspector's TNEPSC Certification Number:	

Please check the box if the following items are on-site:

☐ Notice of Coverage (NOC) ☐ Stormwater Pollution Prevention Plan (SWPPP) ☐ Twice-weekly inspection documentation

☐ Site contact information ☐ Rain Gage ☐ Off-site Reference Rain Gage Location: _____

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If "No", describe below in Comment Section			
1. Are all applicable EPSCs installed and maintained per the SWPPP?		☐Yes	☐No
2. Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?		☐Yes	☐No
3. Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?		☐Yes	☐No
4. Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?		☐Yes	☐No
5. If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4? If "No", describe below the measures to be implemented to address deficiencies.	☐ N/A	☐Yes	☐No
6. If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2? If "No", describe below each location and measures taken to stabilize the area(s).	☐ N/A	☐Yes	☐No
7. Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If "No", describe below the measures to be implemented to address deficiencies.	☐ N/A	☐Yes	☐No
8. If a concrete washout facility is located on site, is it clearly identified on the project and maintained? If "No", describe below the measures to be implemented to address deficiencies.	☐ N/A	☐Yes	☐No
9. Have all previous deficiencies been addressed? If not, describe the remaining deficiencies in the Comments section. ☐ Check if deficiencies/corrective measures have been reported on a previous form.	☐ N/A	☐Yes	☐No

Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken. Otherwise, describe any pertinent observations:

Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Inspector Name and Title:	Signature:	Date:
Permittee Name and Title:	Signature:	Date:

(Rev. 5-13)

Construction Stormwater Inspection Certification Form (Twice-Weekly Inspections)

Purpose of this form/ Instructions

An inspection, as described in section 3.5.8.2. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at least twice every calendar week and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspectors performing the required twice weekly inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. (http://www.tnepsc.org/). A copy of the certification or training record for inspector certification should be kept on site.

Qualified personnel, as defined in section 3.5.8.1 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 3.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 3.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the division's form and the permittee has obtained a written approval from the division to use the alternative form. Inspection documentation will be maintained on site and made available to the division upon request. Inspection reports must be submitted to the division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

Appendix H

Soils Information

Roane County, TN
Soils Data
Kingston Fossil Plant

Soil Map—Roane County, Tennessee
(Kingston Fossil Plant)

Map Scale: 1:26,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

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 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
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: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

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

Date(s) aerial images were photographed: Mar 12, 2011—Oct 15, 2011

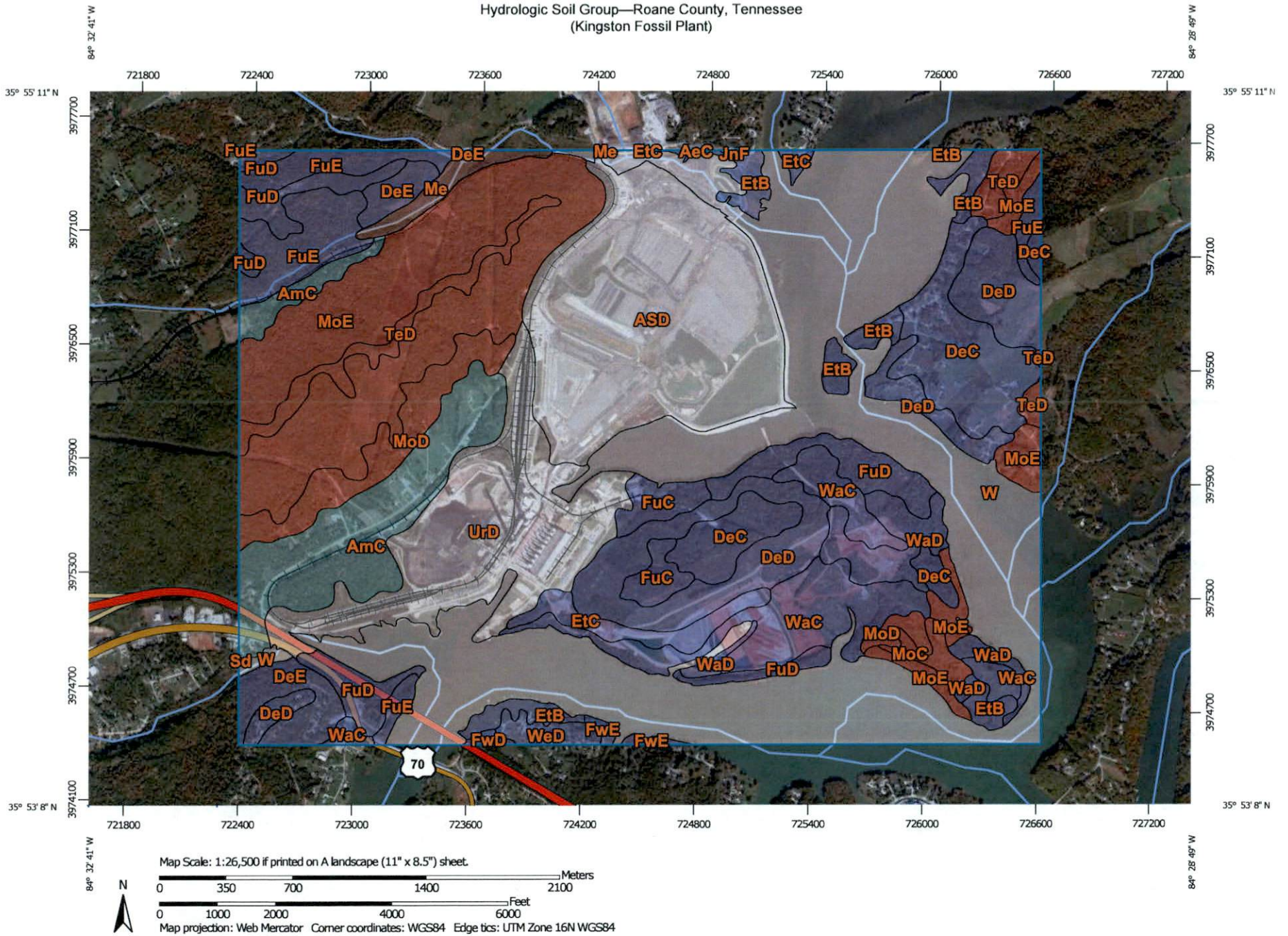
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Roane County, Tennessee (TN145)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AeC	Allen loam, 5 to 12 percent slopes	1.9	0.1%
AmC	Armuchee silt loam, 5 to 12 percent slopes	180.3	5.5%
ASD	Ash disposal area	377.4	11.5%
DeC	Dewey silt loam, 6 to 15 percent slopes	156.0	4.8%
DeD	Dewey silt loam, 15 to 25 percent slopes	195.5	6.0%
DeE	Dewey silt loam, 20 to 45 percent slopes	59.7	1.8%
EtB	Etowah loam, 2 to 6 percent slopes	67.7	2.1%
EtC	Etowah silt loam, 6 to 12 percent slopes	38.2	1.2%
FuC	Fullerton-Pailo complex, 5 to 12 percent slopes	40.3	1.2%
FuD	Fullerton-Pailo complex, 12 to 20 percent slopes	113.4	3.5%
FuE	Fullerton-Pailo complex, 20 to 35 percent slopes	107.9	3.3%
FwD	Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes	3.2	0.1%
FwE	Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes	6.6	0.2%
JnF	Jefferson cobbly loam, 20 to 50 percent slopes	0.8	0.0%
Me	Melvin silt loam, frequently flooded	22.3	0.7%
MoC	Montevallo channery silt loam, 5 to 12 percent slopes	15.1	0.5%
MoD	Montevallo channery silt loam, 12 to 20 percent slopes	80.2	2.4%
MoE	Montevallo channery silt loam, 20 to 35 percent slopes	409.9	12.5%
Sd	Shady loam, occasionally flooded	0.2	0.0%
TeD	Townley silt loam, 12 to 20 percent slopes	60.8	1.9%
UrD	Urban land, 5 to 20 percent slopes	255.3	7.8%
W	Water	851.6	26.0%

Roane County, Tennessee (TN145)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
WaC	Waynesboro loam, 6 to 15 percent slopes	150.4	4.6%
WaD	Waynesboro loam, 15 to 25 percent slopes	65.1	2.0%
WeD	Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes	16.2	0.5%
Totals for Area of Interest		**3,275.9**	**100.0%**

Hydrologic Soil Group—Roane County, Tennessee
(Kingston Fossil Plant)



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 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: http://websoilsurvey.nrcs.usda.gov
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: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

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

Date(s) aerial images were photographed: Mar 12, 2011—Oct 15, 2011

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

Hydrologic Soil Group— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AeC	Allen loam, 5 to 12 percent slopes	B	1.9	0.1%
AmC	Armuchee silt loam, 5 to 12 percent slopes	C	180.3	5.5%
ASD	Ash disposal area		377.4	11.5%
DeC	Dewey silt loam, 6 to 15 percent slopes	B	156.0	4.8%
DeD	Dewey silt loam, 15 to 25 percent slopes	B	195.5	6.0%
DeE	Dewey silt loam, 20 to 45 percent slopes	B	59.7	1.8%
EtB	Etowah loam, 2 to 6 percent slopes	B	67.7	2.1%
EtC	Etowah silt loam, 6 to 12 percent slopes	B	38.2	1.2%
FuC	Fullerton-Pailo complex, 5 to 12 percent slopes	B	40.3	1.2%
FuD	Fullerton-Pailo complex, 12 to 20 percent slopes	B	113.4	3.5%
FuE	Fullerton-Pailo complex, 20 to 35 percent slopes	B	107.9	3.3%
FwD	Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes	B	3.2	0.1%
FwE	Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes	B	6.6	0.2%
JnF	Jefferson cobbly loam, 20 to 50 percent slopes	A	0.8	0.0%
Me	Melvin silt loam, frequently flooded	B/D	22.3	0.7%
MoC	Montevallo channery silt loam, 5 to 12 percent slopes	D	15.1	0.5%
MoD	Montevallo channery silt loam, 12 to 20 percent slopes	D	80.2	2.4%
MoE	Montevallo channery silt loam, 20 to 35 percent slopes	D	409.9	12.5%

Hydrologic Soil Group— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Sd	Shady loam, occasionally flooded	B	0.2	0.0%
TeD	Townley silt loam, 12 to 20 percent slopes	D	60.8	1.9%
UrD	Urban land, 5 to 20 percent slopes		255.3	7.8%
W	Water		851.6	26.0%
WaC	Waynesboro loam, 6 to 15 percent slopes	B	150.4	4.6%
WaD	Waynesboro loam, 15 to 25 percent slopes	B	65.1	2.0%
WeD	Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes	B	16.2	0.5%
Totals for Area of Interest			**3,275.9**	**100.0%**

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

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

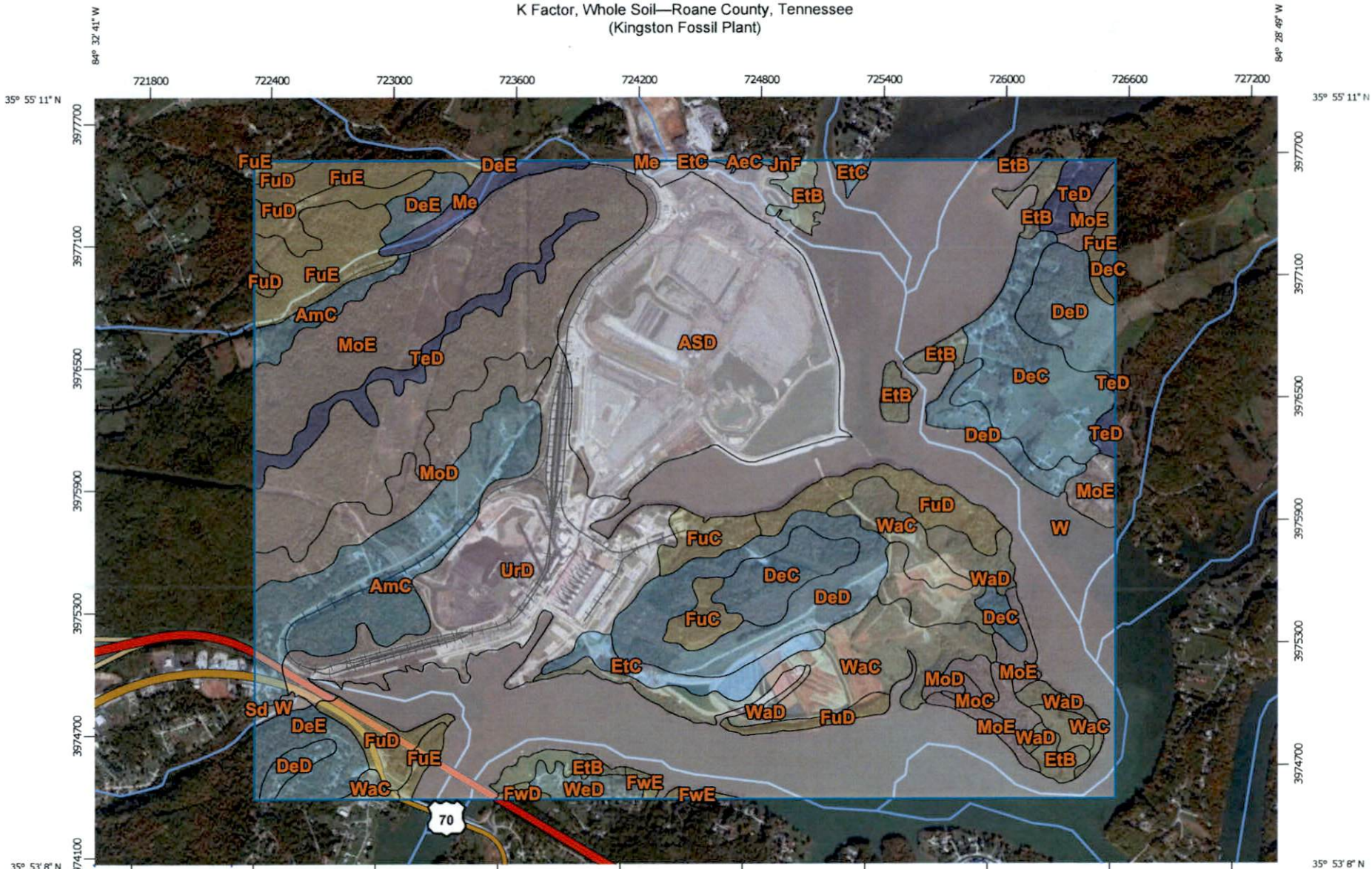
Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

K Factor, Whole Soil—Roane County, Tennessee
(Kingston Fossil Plant)



Map Scale: 1:26,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
Area of Interest (AOI)

Soils

Soil Rating Polygons
.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines
.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points
.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
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 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: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

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

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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.

K Factor, Whole Soil

K Factor, Whole Soil— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AeC	Allen loam, 5 to 12 percent slopes	.32	1.9	0.1%
AmC	Armuchee silt loam, 5 to 12 percent slopes	.37	180.3	5.5%
ASD	Ash disposal area		377.4	11.5%
DeC	Dewey silt loam, 6 to 15 percent slopes	.37	156.0	4.8%
DeD	Dewey silt loam, 15 to 25 percent slopes	.37	195.5	6.0%
DeE	Dewey silt loam, 20 to 45 percent slopes	.37	59.7	1.8%
EtB	Etowah loam, 2 to 6 percent slopes	.28	67.7	2.1%
EtC	Etowah silt loam, 6 to 12 percent slopes	.37	38.2	1.2%
FuC	Fullerton-Pailo complex, 5 to 12 percent slopes	.24	40.3	1.2%
FuD	Fullerton-Pailo complex, 12 to 20 percent slopes	.24	113.4	3.5%
FuE	Fullerton-Pailo complex, 20 to 35 percent slopes	.24	107.9	3.3%
FwD	Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes	.24	3.2	0.1%
FwE	Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes	.24	6.6	0.2%
JnF	Jefferson cobbly loam, 20 to 50 percent slopes	.15	0.8	0.0%
Me	Melvin silt loam, frequently flooded	.49	22.3	0.7%
MoC	Montevallo channery silt loam, 5 to 12 percent slopes		15.1	0.5%
MoD	Montevallo channery silt loam, 12 to 20 percent slopes		80.2	2.4%
MoE	Montevallo channery silt loam, 20 to 35 percent slopes		409.9	12.5%

K Factor, Whole Soil— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Sd	Shady loam, occasionally flooded	.32	0.2	0.0%
TeD	Townley silt loam, 12 to 20 percent slopes	.49	60.8	1.9%
UrD	Urban land, 5 to 20 percent slopes		255.3	7.8%
W	Water		851.6	26.0%
WaC	Waynesboro loam, 6 to 15 percent slopes	.28	150.4	4.6%
WaD	Waynesboro loam, 15 to 25 percent slopes	.28	65.1	2.0%
WeD	Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes	.32	16.2	0.5%
Totals for Area of Interest			**3,275.9**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options

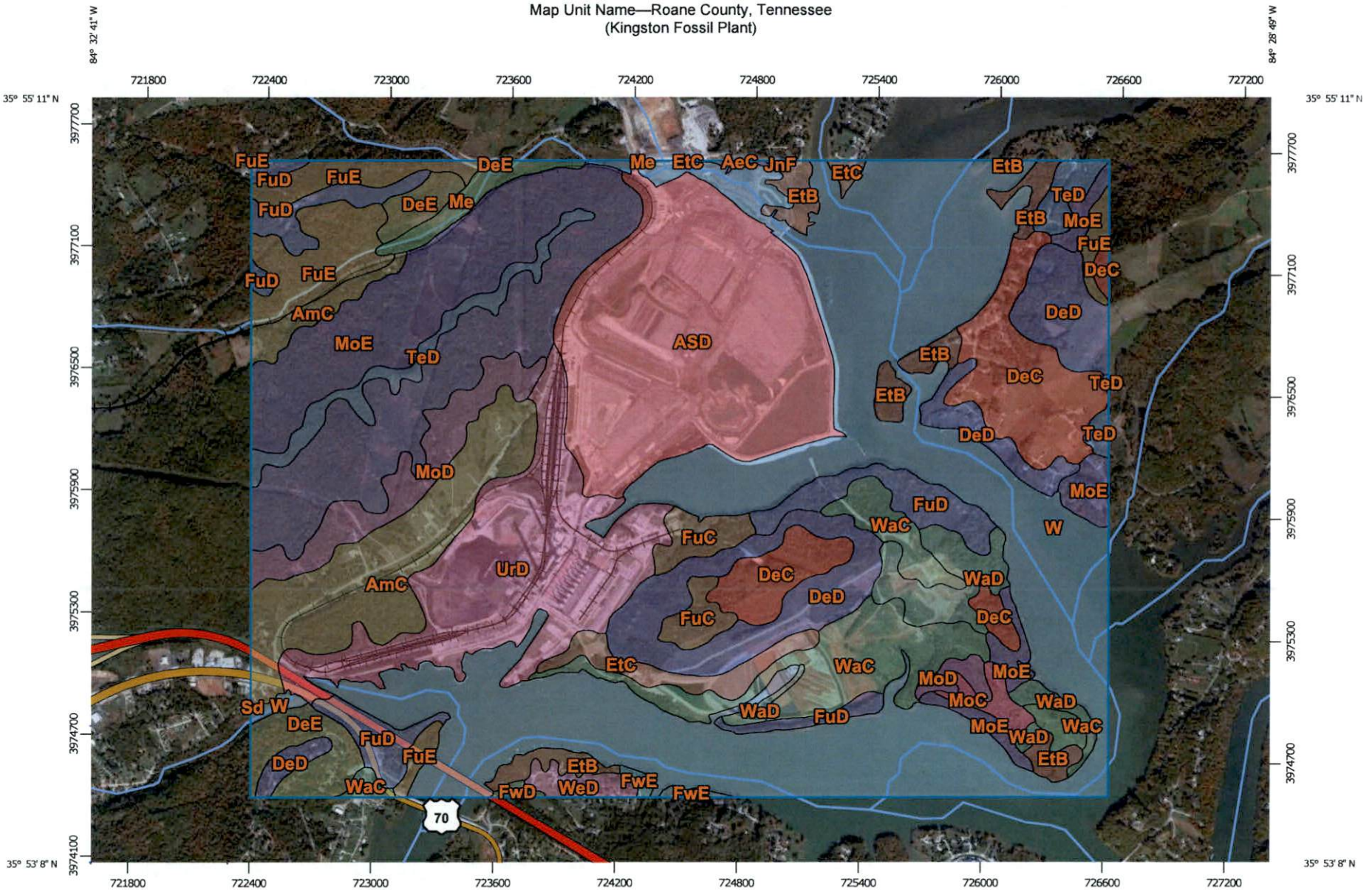
Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Map Unit Name—Roane County, Tennessee
(Kingston Fossil Plant)



Map Scale: 1:26,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Allen loam, 5 to 12 percent slopes
- Armuchee silt loam, 5 to 12 percent slopes
- Ash disposal area
- Dewey silt loam, 15 to 25 percent slopes
- Dewey silt loam, 20 to 45 percent slopes
- Dewey silt loam, 6 to 15 percent slopes
- Etowah loam, 2 to 6 percent slopes
- Etowah silt loam, 6 to 12 percent slopes
- Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes
- Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes
- Fullerton-Pailo complex, 12 to 20 percent slopes
- Fullerton-Pailo complex, 20 to 35 percent slopes
- Fullerton-Pailo complex, 5 to 12 percent slopes
- Jefferson cobbly loam, 20 to 50 percent slopes
- Melvin silt loam, frequently flooded
- Montevallo channery silt loam, 12 to 20 percent slopes
- Montevallo channery silt loam, 20 to 35 percent slopes
- Montevallo channery silt loam, 5 to 12 percent slopes
- Shady loam, occasionally flooded
- Townley silt loam, 12 to 20 percent slopes
- Urban land, 5 to 20 percent slopes
- Water
- Waynesboro loam, 15 to 25 percent slopes
- Waynesboro loam, 6 to 15 percent slopes
- Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes
- Not rated or not available

Soil Rating Lines

- Allen loam, 5 to 12 percent slopes
- Armuchee silt loam, 5 to 12 percent slopes
- Ash disposal area
- Dewey silt loam, 15 to 25 percent slopes
- Dewey silt loam, 20 to 45 percent slopes
- Dewey silt loam, 6 to 15 percent slopes
- Etowah loam, 2 to 6 percent slopes
- Etowah silt loam, 6 to 12 percent slopes
- Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes
- Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes
- Fullerton-Pailo complex, 12 to 20 percent slopes
- Fullerton-Pailo complex, 20 to 35 percent slopes
- Fullerton-Pailo complex, 5 to 12 percent slopes
- Jefferson cobbly loam, 20 to 50 percent slopes
- Melvin silt loam, frequently flooded
- Montevallo channery silt loam, 12 to 20 percent slopes
- Montevallo channery silt loam, 20 to 35 percent slopes
- Montevallo channery silt loam, 5 to 12 percent slopes
- Shady loam, occasionally flooded
- Townley silt loam, 12 to 20 percent slopes
- Urban land, 5 to 20 percent slopes
- Water
- Waynesboro loam, 15 to 25 percent slopes
- Waynesboro loam, 6 to 15 percent slopes
- Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes
- Not rated or not available

Soil Rating Points

- Allen loam, 5 to 12 percent slopes
- Armuchee silt loam, 5 to 12 percent slopes
- Ash disposal area
- Dewey silt loam, 15 to 25 percent slopes
- Dewey silt loam, 20 to 45 percent slopes

MAP INFORMATION

- Dewey silt loam, 6 to 15 percent slopes
- Etowah loam, 2 to 6 percent slopes
- Etowah silt loam, 6 to 12 percent slopes
- Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes
- Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes
- Fullerton-Pailo complex, 12 to 20 percent slopes
- Fullerton-Pailo complex, 20 to 35 percent slopes
- Fullerton-Pailo complex, 5 to 12 percent slopes
- Jefferson cobbly loam, 20 to 50 percent slopes
- Melvin silt loam, frequently flooded
- Montevallo channery silt loam, 12 to 20 percent slopes
- Montevallo channery silt loam, 20 to 35 percent slopes
- Montevallo channery silt loam, 5 to 12 percent slopes
- Shady loam, occasionally flooded
- Townley silt loam, 12 to 20 percent slopes
- Urban land, 5 to 20 percent slopes
- Water
- Waynesboro loam, 15 to 25 percent slopes
- Waynesboro loam, 6 to 15 percent slopes
- Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 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: http://websoilsurvey.nrcs.usda.gov
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: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

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

Date(s) aerial images were photographed: Mar 12, 2011—Oct 15, 2011

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 Name

Map Unit Name— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AeC	Allen loam, 5 to 12 percent slopes	Allen loam, 5 to 12 percent slopes	1.9	0.1%
AmC	Armuchee silt loam, 5 to 12 percent slopes	Armuchee silt loam, 5 to 12 percent slopes	180.3	5.5%
ASD	Ash disposal area	Ash disposal area	377.4	11.5%
DeC	Dewey silt loam, 6 to 15 percent slopes	Dewey silt loam, 6 to 15 percent slopes	156.0	4.8%
DeD	Dewey silt loam, 15 to 25 percent slopes	Dewey silt loam, 15 to 25 percent slopes	195.5	6.0%
DeE	Dewey silt loam, 20 to 45 percent slopes	Dewey silt loam, 20 to 45 percent slopes	59.7	1.8%
EtB	Etowah loam, 2 to 6 percent slopes	Etowah loam, 2 to 6 percent slopes	67.7	2.1%
EtC	Etowah silt loam, 6 to 12 percent slopes	Etowah silt loam, 6 to 12 percent slopes	38.2	1.2%
FuC	Fullerton-Pailo complex, 5 to 12 percent slopes	Fullerton-Pailo complex, 5 to 12 percent slopes	40.3	1.2%
FuD	Fullerton-Pailo complex, 12 to 20 percent slopes	Fullerton-Pailo complex, 12 to 20 percent slopes	113.4	3.5%
FuE	Fullerton-Pailo complex, 20 to 35 percent slopes	Fullerton-Pailo complex, 20 to 35 percent slopes	107.9	3.3%
FwD	Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes	Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes	3.2	0.1%
FwE	Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes	Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes	6.6	0.2%
JnF	Jefferson cobbly loam, 20 to 50 percent slopes	Jefferson cobbly loam, 20 to 50 percent slopes	0.8	0.0%
Me	Melvin silt loam, frequently flooded	Melvin silt loam, frequently flooded	22.3	0.7%
MoC	Montevallo channery silt loam, 5 to 12 percent slopes	Montevallo channery silt loam, 5 to 12 percent slopes	15.1	0.5%
MoD	Montevallo channery silt loam, 12 to 20 percent slopes	Montevallo channery silt loam, 12 to 20 percent slopes	80.2	2.4%
MoE	Montevallo channery silt loam, 20 to 35 percent slopes	Montevallo channery silt loam, 20 to 35 percent slopes	409.9	12.5%

Map Unit Name— Summary by Map Unit — Roane County, Tennessee (TN145)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Sd	Shady loam, occasionally flooded	Shady loam, occasionally flooded	0.2	0.0%
TeD	Townley silt loam, 12 to 20 percent slopes	Townley silt loam, 12 to 20 percent slopes	60.8	1.9%
UrD	Urban land, 5 to 20 percent slopes	Urban land, 5 to 20 percent slopes	255.3	7.8%
W	Water	Water	851.6	26.0%
WaC	Waynesboro loam, 6 to 15 percent slopes	Waynesboro loam, 6 to 15 percent slopes	150.4	4.6%
WaD	Waynesboro loam, 15 to 25 percent slopes	Waynesboro loam, 15 to 25 percent slopes	65.1	2.0%
WeD	Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes	Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes	16.2	0.5%
Totals for Area of Interest			**3,275.9**	**100.0%**

Description

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. .

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

RUSLE2 Related Attributes–Roane County, Tennessee

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
AeC—Allen loam, 5 to 12 percent slopes								
Allen	95	246	B	.32	5	44.0	40.0	16.0
AmC—Armuchee silt loam, 5 to 12 percent slopes								
Armuchee	94	279	C	.37	3	18.8	55.2	26.0
DeC—Dewey silt loam, 6 to 15 percent slopes								
Dewey	90	98	B	.37	5	26.0	52.0	22.0
DeD—Dewey silt loam, 15 to 25 percent slopes								
Dewey	90	98	B	.37	5	26.0	52.0	22.0
DeE—Dewey silt loam, 20 to 45 percent slopes								
Dewey	90	82	B	.37	5	26.3	52.7	21.0
EtB—Etowah loam, 2 to 6 percent slopes								
Etowah	94	98	B	.28	5	41.7	38.7	19.6
EtC—Etowah silt loam, 6 to 12 percent slopes								
Etowah	92	75	B	.37	5	27.0	52.6	20.4
FuC—Fullerton-Pailo complex, 5 to 12 percent slopes								
Fullerton	68	328	B	.37	5	26.3	52.7	21.0
Pailo	30	328	A	.43	5	30.4	55.6	14.0

RUSLE2 Related Attributes–Roane County, Tennessee								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
FuD—Fullerton-Pailo complex, 12 to 20 percent slopes								
Fullerton	67	164	B	.37	5	26.3	52.7	21.0
Pailo	26	164	A	.43	5	30.4	55.6	14.0
FuE—Fullerton-Pailo complex, 20 to 35 percent slopes								
Fullerton	67	82	B	.37	5	26.3	52.7	21.0
Pailo	30	82	A	.43	5	30.4	55.6	14.0
FwD—Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes								
Fullerton	45	164	B	.37	5	26.3	52.7	21.0
Dewey	35	164	B	.37	5	26.3	52.7	21.0
FwE—Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes								
Fullerton	45	82	B	.37	5	26.3	52.7	21.0
Dewey	35	82	B	.37	5	26.3	52.7	21.0
JnF—Jefferson cobbly loam, 20 to 50 percent slopes								
Jefferson	95	—	A	.28	4	43.2	38.8	18.0
Me—Melvin silt loam, frequently flooded								
Melvin	95	410	B/D	.49	5	14.1	71.4	14.5
MoC—Montevallo channery silt loam, 5 to 12 percent slopes								
Montevallo	90	125	D	.43	2	29.0	54.0	17.0
MoD—Montevallo channery silt loam, 12 to 20 percent slopes								
Montevallo	90	59	D	.43	2	29.0	54.0	17.0
MoE—Montevallo channery silt loam, 20 to 35 percent slopes								
Montevallo	90	49	D	.43	2	29.0	54.0	17.0
Sd—Shady loam, occasionally flooded								
Shady	96	410	B	.32	5	43.0	39.5	17.5
TeD—Townley silt loam, 12 to 20 percent slopes								
Townley	92	—	D	.49	3	27.1	54.4	18.5
WaC—Waynesboro loam, 6 to 15 percent slopes								
Waynesboro	95	180	B	.28	5	45.0	35.0	20.0

RUSLE2 Related Attributes–Roane County, Tennessee								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
WaD—Waynesboro loam, 15 to 25 percent slopes								
Waynesboro	95	180	B	.28	5	45.0	35.0	20.0
WeD—Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes								
Waynesboro	45	164	B	.32	5	42.1	37.9	20.0
Etowah	35	164	B	.37	5	35.0	51.0	14.0

Data Source Information

Soil Survey Area: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Report—Soil Features

Soil Features–Roane County, Tennessee									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
AeC—Allen loam, 5 to 12 percent slopes									
Allen		—	—		—	—	None	Moderate	Moderate
AmC—Armuchee silt loam, 5 to 12 percent slopes									
Armuchee	Paralithic bedrock	20-21-40	—	Moderately cemented	—	—	None	High	Moderate
ASD—Ash disposal area									
Ash disposal area		—	—		—	—	None		
DeC—Dewey silt loam, 6 to 15 percent slopes									
Dewey		—	—		0	0	None	High	Moderate
DeD—Dewey silt loam, 15 to 25 percent slopes									
Dewey		—	—		0	0	None	High	Moderate
DeE—Dewey silt loam, 20 to 45 percent slopes									
Dewey		—	—		—	—	None	High	Moderate

Soil Features–Roane County, Tennessee									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
EtB—Etowah loam, 2 to 6 percent slopes									
Etowah		—	—		0	0	None	Moderate	Moderate
EtC—Etowah silt loam, 6 to 12 percent slopes									
Etowah		—	—		0	0	None	Moderate	Moderate
FuC—Fullerton-Pailo complex, 5 to 12 percent slopes									
Fullerton		—	—		—	—	None	High	Moderate
Pailo		—	—		—	—	None	Moderate	High
FuD—Fullerton-Pailo complex, 12 to 20 percent slopes									
Fullerton		—	—		—	—	None	High	Moderate
Pailo		—	—		—	—	None	Moderate	High
FuE—Fullerton-Pailo complex, 20 to 35 percent slopes									
Fullerton		—	—		—	—	None	High	Moderate
Pailo		—	—		—	—	None	Moderate	High

Soil Features--Roane County, Tennessee									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
FwD—Fullerton-Dewey-Urban land complex, 5 to 20 percent slopes									
Fullerton		—	—		—	—	None	High	Moderate
Dewey		—	—		—	—	None	High	Moderate
Urban land		—	—		—	—			
FwE—Fullerton-Dewey-Urban land complex, 20 to 35 percent slopes									
Fullerton		—	—		—	—	None	High	Moderate
Dewey		—	—		—	—	None	High	Moderate
Urban land		—	—		—	—			
JnF—Jefferson cobbly loam, 20 to 50 percent slopes									
Jefferson	Paralithic bedrock	40-59-60	—	Moderately cemented	—	—	None	Low	Moderate
Me—Melvin silt loam, frequently flooded									
Melvin		—	—		—	—	None	High	High
MoC—Montevallo channery silt loam, 5 to 12 percent slopes									
Montevallo	Paralithic bedrock	10-18-20	—	Moderately cemented	0	0	None	Low	Moderate

Soil Features–Roane County, Tennessee									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
MoD—Montevallo channery silt loam, 12 to 20 percent slopes									
Montevallo	Paralithic bedrock	10-18-20	—	Moderately cemented	0	0	None	Low	Moderate
MoE—Montevallo channery silt loam, 20 to 35 percent slopes									
Montevallo	Paralithic bedrock	10-18-20	—	Moderately cemented	0	0	None	Low	Moderate
Sd—Shady loam, occasionally flooded									
Shady		—	—		—	—	None	Low	High
TeD—Townley silt loam, 12 to 20 percent slopes									
Townley	Paralithic bedrock	20-36-40	—	Moderately cemented	—	—	None	Moderate	High
UrD—Urban land, 5 to 20 percent slopes									
Urban land		—	—		—	—	None		
W—Water									
Water		—	—		—	—			

Soil Features–Roane County, Tennessee									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
WaC—Waynesboro loam, 6 to 15 percent slopes									
Waynesboro		—	—		0	0	None	Moderate	Moderate
WaD—Waynesboro loam, 15 to 25 percent slopes									
Waynesboro		—	—		0	0	None	Moderate	Moderate
WeD—Waynesboro-Etowah-Urban land complex, 5 to 20 percent slopes									
Waynesboro		—	—		—	—	None	High	Moderate
Etowah		—	—		—	—	None	Moderate	Moderate
Urban land		—	—		—	—			

Data Source Information

Soil Survey Area: Roane County, Tennessee
Survey Area Data: Version 14, Sep 20, 2015

Appendix I

Runoff Coefficient Calculations

Drainage Runoff Coefficient Calculations for
Kingston Fossil Plant
Stilling Pond Closure

Calculations: Cumulative Runoff Coefficient = $\frac{\sum(a \times b)}{\sum areas}$

Pre-Project Runoff

Location	Area[1] (acres) (a)	Pre-Project Runoff Coefficient (b)	Pre-Project (a)*(b)
A_1: Water	24.3	0	0
A_2: Dikes	9.7	0.5	4.85
A_3: Stockpiles	9.0	0.5	4.50
TOTALS	**43.0**		**9.35**

Average Cumulative Pre-Project Runoff Coefficient

$$\frac{9.35}{43.0} = 0.22$$

Post-Project Runoff

Location	Area[1] (acres) (c)	Post-Project Runoff Coefficient (d)	Post-Project (c)*(d)
A_1: Capped Area	24.3	0.35	8.51
A_2: Dikes	9.7	0.5	2.91
A_3: Reclaimed Stockpiles	9.0	0.35	3.15
TOTALS	**43.0**		**14.57**

Average Post-Project Runoff Coefficient

$$\frac{14.57}{43.0} = 0.34$$

1. Runoff Coefficients were determined based on the TDOT Drainage Manual Section 4.04.1.1.

Appendix J

Site Overview Figure

Stantec

Legend
- Stilling Pond Closure Area
- Outfall Locations

Notes
1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Base features courtesy: Source: Esri, DigitalGlobe, GeoEye, i-cubed,USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.
3. Outfall 01A and 002 not shown.

0 1,000 Feet
1:7,200 (At original document size of 11x17)

Client/Project
Tennessee Valley Authority
Kingston Fossil Plant
Storm Water Pollution Prevention Plan

Figure No.
1

Title
Stilling Pond Outfall Locations
Kingston Fossil Plant
Roane County, Tennessee

Appendix K

General Information Notice

TVA – KINGSTON FOSSIL PLANT

STILLING POND FINAL CLOSURE

NPDES Permits: TN0005452 and TNR100000

CONTACT: Adele Dennison

For Storm Water Pollution Prevention Plan (SWPPP)
Kingston Fossil Plant

865-717-2157
865-755-9280
865-310-5205

Appendix L

Notice of Termination Form

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)

Division of Water Resources

6th Floor Annex, L&C Tower, 401 Church Street, Nashville, Tennessee 37243

1-888-891-TDEC (8332)

Notice of Termination (NOT) for General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local WPC Environmental Field Office (EFO) address (see table below). For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Type or print clearly, using ink.

Site or Project Name:

NPDES Tracking Number: TNR

Name of Permittee Requesting Termination of Coverage:

Check the for termination of it

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Certification and re: or

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Date