AECOM

Advanced Engineering Methods Feasibility Report

Plant Scherer Ash Pond 1 Closure

Georgia Power Company

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1. Introduction

The Georgia Power Company's (GPC) Plant Scherer includes a currently inactive surface impoundment, Ash Pond 1 (AP-1), where coal combustion residuals (CCR) were formerly managed. AP-1 is being closed in accordance with United States Environmental Protection Agency (USEPA) and Georgia Environmental Protection Division (GAEPD) CCR regulations. This document is AECOM's report on its evaluation of potential Advanced Engineering Methods (AEM) in connection with the closure-in-place strategy for AP-1. Here, the term AEM is used to refer to engineering controls that are designed to enhance the protection of groundwater and closure effectiveness, and/or further minimize future maintenance of the closed CCR unit.

1.1 Background and Purpose

Plant Scherer is in Juliette, Georgia along the northeast edge of Monroe County. The plant is approximately 30 miles north of Macon, Georgia and approximately 60 miles southeast of Atlanta, Georgia. **Figure 1** shows the Plant Scherer (site) location and the plant's ash pond (AP-1) relative to the main plant. The site is located in a rural area and bordered by agricultural and residential properties. Plant Scherer occupies approximately 12,000 acres and is situated on the north banks of the 3,600-acre Lake Juliette, a manmade lake constructed in conjunction with the plant in the early 1980s. Prior to construction of the plant, the entire site area was an undeveloped, wooded, and hilly property with relief as much as 200 ft or more across the site.

AP-1 was commissioned in 1980 and was in operation from when the plant became operational in 1982 until October 30, 2020, when use of AP-1 ceased. AP-1, currently encompasses 550 acres and contains approximately 15.3 million cubic yards (MM CY) of CCR. AP-1 historically operated at a normal pool of approximately El. 495 ft NAVD88 and discharged through a spillway structure to the adjacent 220-acre Recycle Pond to the southwest. The configuration of AP-1 during its operating life is referred to in this document as the pre-closure condition. The AP-1 closure was initiated in October of 2020. The selected closure design is a consolidated in-place closure in compliance with United States Environmental Protection Agency (USEPA) and Georgia Environmental Protection Division (GAEPD) CCR Rules.

The Federal regulations *40 Parts 257 and 261: Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (USEPA CCR Rule) became effective October 19, 2015, establishing regulations regarding continued operation, closure, and monitoring of existing and new CCR impoundments and landfills. The GAEPD Rules for Solid Waste Management, 391-3-4-.10 (GAEPD CCR Rule) was amended in November 2016 and incorporates most of the provisions of the USEPA Federal CCR Rule.

This document is AECOM's report on its evaluation of AEM feasibility in connection with the closure in place strategy of AP-1. This report summarizes the conceptual site model (CSM) for AP-1 and presents an initial screening of AEMs, evaluating the feasibility of certain technologies and measures. Then, the list of AEM options was refined. Further evaluation of the refined options was conducted by comparing relative effectiveness using a groundwater numerical flow model, implementability, and potential impacts associated with constructability challenges. Based on this evaluation, feasibility considerations support GPC's selection of extending the final cover over the Knob Area as the AEM for AP-1.

2. Conceptual Site Model

A detailed CSM for AP-1 is presented in the Hydrogeologic Assessment Report (HAR) (WSP, 2024) and is incorporated into this document by reference. This HAR is the fifth revision and includes minor updates to HAR documents previously provided to GAEPD. The following section and subsections provide a summary of the information provided in the HAR and include a general description of regional geologic and hydrogeologic characteristics of formations that occur beneath the site. Figures 5A through 5F of the HAR present a series of subsurface profiles for the site and depict a summary of the geologic and hydrogeologic information for Plant Scherer AP-1.

2.1 Geologic and Hydrogeologic Setting

The site is in the Piedmont/Blue Ridge geologic province, which contains some of the oldest rocks in the Southeastern United States. These late Precambrian (Neoproterozoic) to late Paleozoic (Permian) rocks have undergone repeated cycles of igneous intrusions and extrusions, metamorphism, folding, faulting, shearing, and silicification.

The metamorphic and igneous rocks that underlie the area have been subjected to physical and chemical weathering which has created a landscape dissected by creeks and streams forming a dendritic drainage pattern. These rocks are deeply weathered due to the humid climate and bedrock is typically overlain by a variably thick blanket of residual soils and saprolite. The overall depth of weathering in the Piedmont/Blue Ridge is about 20 to 60 feet; however, the depth of weathering along discontinuities and/or very feldspathic rock units may extend to depths greater than 100 feet. Because of such variations in rock types and structure, the depth of weathering can vary significantly over short horizontal distances.

Residual soils, primarily sandy silt, silty sand, sandy clay and silty clay, occur as a variably thick deposit overlying bedrock across most of the site. The thickness of the soil encountered in the borings is variable, ranging from little to no soil where outcrop is encountered at the surface, to as much as 168 feet. Thickness of saprolitic soils and/or saprolitic rock range in thickness across the site. Saprolitic rock is considered to be transitionally weathered rock (TWR) or partially weathered rock (PWR). PWR is defined by Standard Penetration Test (SPT) blow counts that exceed 50 blows/six inches. At the site, material overlying the top of rock surface, including residual soils, saprolite, and saprolitic rock, is collectively referred to as overburden or regolith.

Generally, the majority of groundwater flow across the site occurs laterally in the TWR zone. Because the site is underlain by clay-rich residual soils and relatively massive bedrock, groundwater is expected to move laterally more than vertically within the TWR, which is considered to have a higher hydraulic conductivity relative to the overlying clay-rich and underlying massive bedrock material.

2.2 Uppermost Groundwater Aquifer

The uppermost aquifer occurs within the overburden and includes the TWR. Data from boring logs, water level measurements, well development, well purging, and groundwater quality data suggest that the overburden aquifer is hydraulically connected to the bedrock aquifer (though limited), consistent with the conceptual models described for the Piedmont. Available site data suggest that the hydraulic connectivity between overburden aquifer and the bedrock aquifer is dependent on the topographic location, storage capacity of the overburden storehouse, and the occurrence of interconnected fractures to the bedrock aquifer. Lithologic and hydrogeologic data reflect limited connectivity between the uppermost aquifer and the bedrock aquifer.

Data from boring logs, water level measurements, well development, well purging, and groundwater quality data suggest that the overburden aquifer is hydraulically connected to the bedrock aquifer, consistent with the conceptual models described for the Piedmont. Available site data suggest that the hydraulic connectivity between the overburden aquifer and the bedrock aquifer is dependent on the topographic location, storage capacity of the overburden, and the occurrence of interconnected fractures to the bedrock aquifer.

The potentiometric surface for the uppermost aquifer is generally around the topographic high containing AP-1 with localized influences of topography and the effects of mounding. AP-1 pool level maintains a higher head on all sides of AP-1 except the western edge, including the Knob Area. Thus, the groundwater surrounding AP-1 (with the exception to the west of AP-1) is elevated compared to areas further away from AP-1. Local groundwater mounding effects may induce gradients towards AP-1. However, in general, groundwater flow is from the western higher terrains towards the pond but eventually flows from the pond to north, east, and south.

2.3 Groundwater Flow Conditions

With the exception of the area of AP-1, the potentiometric surface for the uppermost aquifer across the site is a subdued reflection of the surface topography, with gradients from areas of high elevation towards the lower elevations in stream valleys. One such area of high surface and groundwater elevation is the Knob Area, as shown on **Figure 1**. In the immediate vicinity of AP-1, the pre-closure pool water levels maintained higher groundwater elevations, resulting in hydraulic gradients outward from the area of AP-1 to the surrounding area except along the western edge where the Knob Area is located.

The regolith functions as a sponge of sorts, slowly allowing groundwater to infiltrate the bedrock through areas of enhanced permeability. The bedrock is recharged by groundwater that is stored in the overburden, primarily in relatively isolated areas where secondary porosity features (e.g., faults and fractures) occur. Based on site-specific hydrogeologic characteristics, groundwater is expected to move laterally more than vertically within the PWR unit, and it is likely that there is limited amount of aquifer recharge occurring in the bedrock unit in and around the facility

Based on data presented in Table 2 of the HAR, average historical groundwater elevations typically show a seasonal variability of approximately 8 feet. In 2023 to February 2024 the maximum groundwater elevations for the AP-1 area are in the range of 516 feet NAVD88 (observed at upgradient well SGWA-3) while minimum groundwater elevations observed at AP-1 are in the range of 359 feet NAVD88 (observed at PZ-49S). Conversely, maximum groundwater elevations observed in the eastern portion of the site is 436 feet NAVD88 (observed at GWA-45) with a minimum elevation of 364 feet NAVD88 (observed at GWC-1). In general, groundwater flow is from the western higher terrains towards AP-1, and then from AP-1 to north, east, and south.

Based on the potentiometric contours, the horizontal hydraulic gradient is variable and reflects topography at the site and the pool elevation of AP-1. Data indicates that the horizontal gradient is steeper around the AP-1 perimeter, particularly along the embankment where groundwater flow lines are influenced by the dam's constructed slope.

Groundwater flows to tributaries on-site. Vertical hydraulic gradients between the regolith and bedrock show that the direction of the gradient is variable in both topographically high and low areas. Groundwater in the bedrock is isolated within secondary porosity features and limited in extent (i.e., not laterally continuous).

3. Overview of AP-1 Closure

As shown conceptually in the Closure Plan figure included as **Figure A** below, the AP-1 closure involves a CCR removal area located in the northern portion of the current AP-1, and a consolidated closure-in-place area located in the southern and eastern portion of the AP-1 footprint (closure-in-place footprint) as shown in the figure below. The removal area and consolidation area will be separated by a proposed northern embankment berm (referenced herein as the North Berm) that will buttress the consolidated CCR materials within the closure-in-place footprint and form the northern limit of the final closure-in-place cover system.

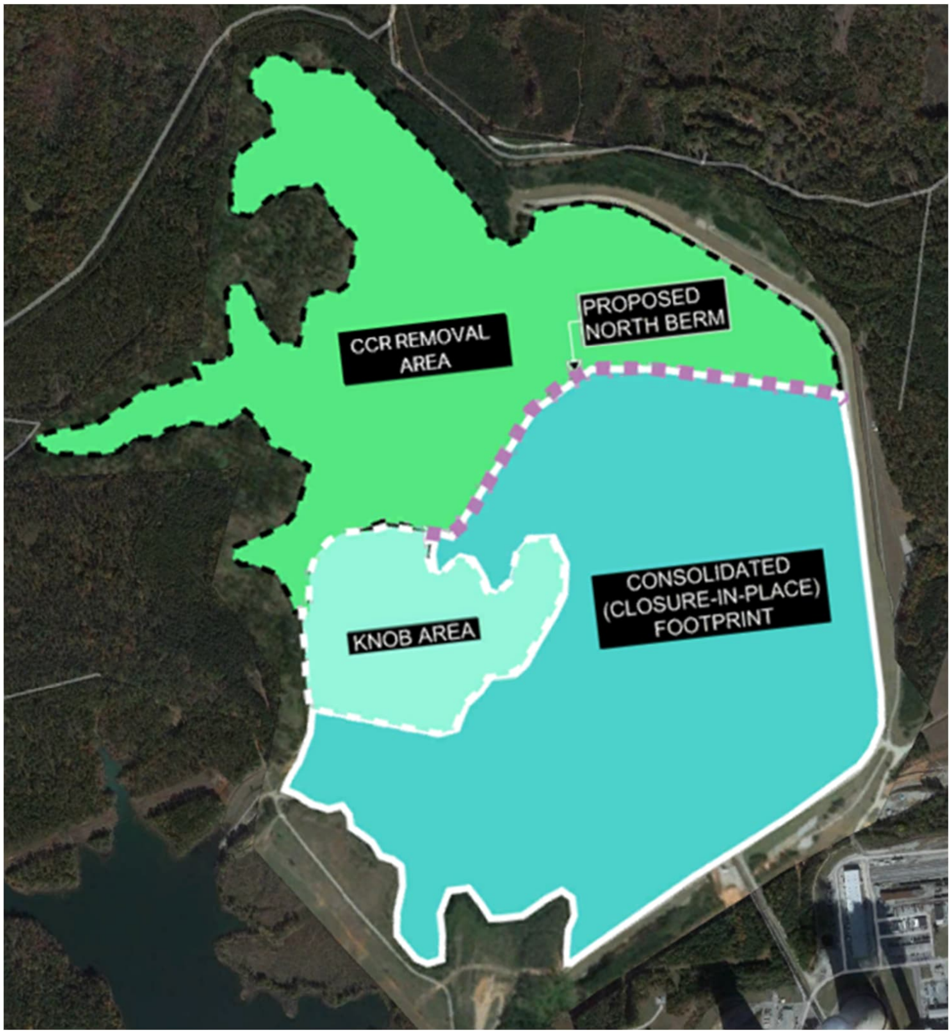


Figure A: AP-1 Baseline Closure

AP-1's closure-in-place design involves grading the closure-in-place surface into a ridge and valley "herringbone" configuration, which enables stormwater to drain off the final cover system, from the topographically higher ridges to the lower valley channels and subsequently off of the closure-in-place surface via engineered swales and ditches. The stormwater drainage swales and ditches will drain to outlet structures that will ultimately convey post-closure surface water runoff from the cover system to either the Recycle Pond (west area) or to Berry Creek (east area). This closure design is referred to through this document as the baseline closure.

GPC incorporated the AEM that includes extending the final cover system to include an area of significant groundwater recharge called the Knob Area as shown in the Closure Plan and provided herein as **Figure B**. The Knob Area will be graded and covered with the same cover system as the closure-in-place footprint to achieve a continuous barrier minimizing infiltration and groundwater recharge from the Knob Area to the maximum extent feasible. As the Knob Area does not contain CCR, it is not considered part of the cover system required under 391-3-4-.10 and 40 CFR. § 257.102(d)(3). Nevertheless, this area is included within the overall closure design, as described herein and in the Permit Application. Georgia Power's selection of this AEM is supported by the feasibility considerations presented in this report.

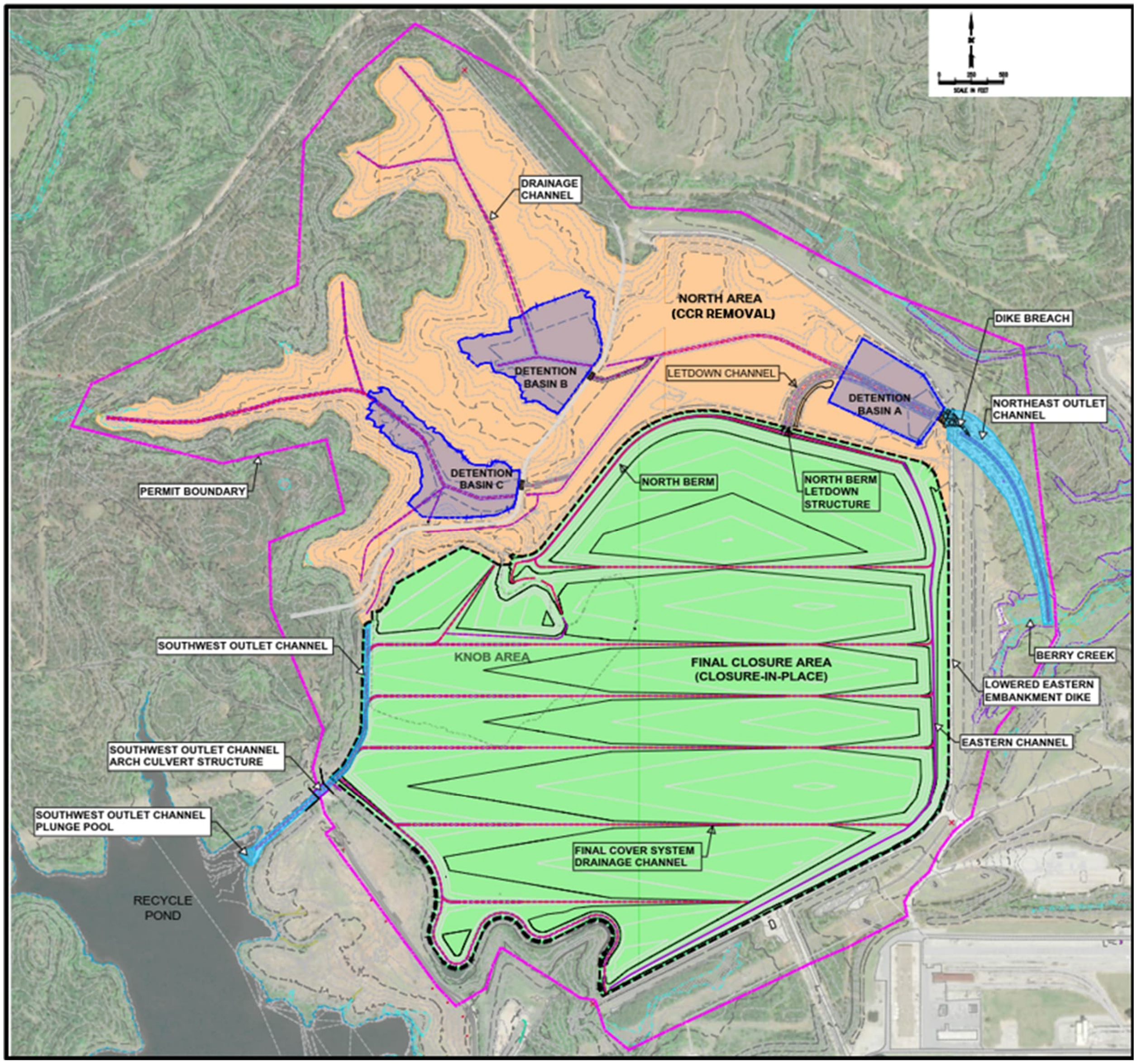


Figure B: Planned Plant Scherer Ash Pond 1 (AP-1) Closure Approach/Design

4. Evaluation of Advanced Engineering Methods and Technologies

4.1 Overview

The purpose of this section is to present the evaluation of AEM options with the potential to enhance the baseline closure design. In general, the AEMs considered fall into three categories: vertical barrier walls, pumping/extracting, and cover enhancement.

The AEM evaluation process consists of identifying a list of engineering measures that could potentially achieve the objectives of enhancing the baseline closure. Below, AEM options are initially screened qualitatively, considering the potential effectiveness and implementability of each AEM based on site-specific conditions. Based on the initial screening, a shorter list of potentially effective AEMs is then evaluated in more detail using groundwater modeling. The findings/results when compared support Georgia Power's choice to extend the final cover system over the Knob Area as the AEM for the AP-1 closure.

4.2 Initial Screening of Technologies

4.2.1 Vertical Barrier Wall Advanced Engineering Methods

A vertical barrier wall of low permeability inhibits the flow of groundwater beyond the wall. Based on the CSM, the uppermost aquifer at AP-1 is the saprolite and PWR including the underlying, connected Fractured Bedrock (FBR). Subsurface penetration techniques available to install the proposed barrier walls become limited as the proposed depth of the wall is increased and equipment must penetrate harder material. This limits implementation to select specialty contractors. In general, the range of installation methods available can be divided by ability to penetrate to or into three material types present at AP-1:

- Typical Soils (e.g. Residuum) (SPT N-values up to 25 bpf) – most of the techniques can be effectively used.
- Hard Soils (e.g. Residuum) to PWR (N-values up to 100 bpf) – smaller group of effective techniques.
- Rock – limited to drillhole grouting or hydromill/hydrofraise techniques.

Construction quality control / assurance – CQC / CQA becomes more complex with increasing wall depth and penetration into hard soils, PWR, and rock to verify penetration resistance, wall depth, wall integrity (e.g., maintaining full thickness and homogeneous properties) and performance (e.g., achieving permeability targets). Furthermore, if two or more techniques are required for construction, it becomes increasingly complex to complete CQC and CQA checks for integrity and performance metrics of the installed barrier wall. These additional checks often require additional drill holes which may serve to increase the secondary porosity of the surrounding subsurface soils and rocks, which is undesirable. Based on these considerations, keying into CBR was screened out. However, vertical barrier walls to the top of the PWR are further considered below.

Vertical barrier AEMs considered included slurry trench walls, grout curtains, vibrating beam walls, bottom sealing, sheet piles, and sheet curtains. A summary description of each is presented as follows:

Slurry Trench Wall: Slurry trenches consist of a vertical trench excavated along the perimeter of the site, filled with a bentonite slurry to support the trench and subsequently backfilled with a mixture of low-permeability material (typically 1 x 10^{-7} cm/sec or lower). AP-1 lithology suggests the walls would likely be keyed into the top of the PWR.

Grout Curtains: These barriers are installed by grouting or jet-grouting the soils. The amount of grout needed is a function of the available void space, the density of the grout, and the pressures used in setting the grout. Two or more rows of grout are normally required to provide a good seal.

Vibrating beam walls: This technique involves the driving of a specially designed wide flange beam section with a grout injection nozzle located at the base of the beam connected to a vibratory driver-extractor. The engineered beam is vibrated into the ground while injecting a self-hardening slurry to aid as a lubricant. The beam element is then extracted, creating a minimum 4- to 6-inch panel which is filled with the self-hardening slurry as the beam is retracted. The successive penetrations of the beam element in conjunction with the overlapping of the previous beam insertions, forms a continuous cutoff wall.

Bottom Sealing: With this method, grout is injected through drill holes to form a horizontal or curved barrier below the site to prevent downward migration of contaminants.

Sheet Piles: The construction of a sheet pile cutoff wall involves driving interlocking sheet piles down through unconsolidated materials to a unit of low permeability. Individual sheet piles are connected along the edges with various types of interlocking joints.

Sheet Curtains: With this method, a low permeable membrane is placed in a trench surrounding or upgradient of AP-1, thereby enclosing AP-1 or diverting groundwater flow around it.

Features common to any vertical barrier include:

- Continuous wall of uniform low permeability
- Sufficient thickness to withstand earth stresses and hydraulic gradients and to provide long-term sorption capacity
- Constructed of material compatible with the groundwater quality and chemistry in the vicinity of the wall

Table 4-1 summarizes the advantages and disadvantages of for each of the vertical barriers.

Table 4-1. Advantages and Disadvantages

Barrier Type	Advantages	Disadvantages
Slurry Wall	• Can reach hydraulic conductivities values less than 10^{-7} cm/s; • Because requirements and practices are well understood they may be able to be installed quickly. • The only method that permits visual inspection of the target material at depth and therefore assurance of achieving the target depth during construction.	• Large excavation site, excavated soil storage, slurry mixing, material storage, etc. • When wall depths exceed 50 ft and/or cross multiple geologic strata dependent on site conditions, multiple installation technologies may be necessary, making it difficult to ensure integrity of the wall. • Ability of barrier walls to be successfully installed to reach the target depths/ geologic strata below ground surface, especially in areas where penetration into

		saprolite, PWR, and/or weathered bedrock is needed for long-term performance. • Depths greater than 50 ft require specialized equipment and a combination of technologies.
Grout Curtain/Barrier Wall	• Ideal for situations involving fractured rock. • Little waste material is generated.	• Depth above 50 ft require specialized equipment. • The uncertainty of complete cutoff. • Relatively high hydraulic conductivity values are obtained. • . Grout infiltration is generally limited to permeable geologic strata.
Vibrating Beam Walls	• Most efficient in loose, unconsolidated deposits, such as sand and gravel. • Allows for work in confined areas with limited space for staging or above-ground mixing. • Depths more than 50 feet are possible with permeabilities in the range of 10^{-8} cm/sec.	• Slow incremental process. • Soil type limited - soil conditions must be conducive to driving the vibrating beam. Cobbles, debris, or other impenetrable materials can cause the beam to meet refusal. • Emplacement accuracy may be of some concern since the drive shoe can encounter hard materials which can push the beam off the intended path, particularly at depths greater than 40 feet.
Bottom Sealing	• Can be installed at various depths. • In situ technique. • Minimum disruption of soil.	• Hard to ensure barrier continuity. • Unproven at large-scale commercial use. • Not feasible given the undulating nature of bedrock underlying AP-1
Sheet Pile Walls	• Damaged wall section can be easily removed and replaced. • Given geologic conditions associated with AP-1, depths of 50 may be feasible. • Installation is very rapid when compared to other types of cutoff wall construction. • These walls have high strengths which is ideal for durability. • Little to no waste materials are generated during construction.	• Steel walls are generally susceptible to salts and acids, which may cause the wall to degrade overtime. • Interlock leakage can be quite significant for standard sheet pile joints. • Steel is very expensive when compared to other construction materials. • Piles can be hard to drive if boulders are present and hard to key into low permeable layers.
Sheet Curtain	• See sheet pile walls advantages	• See sheet pile walls disadvantages

Based on these pros and cons, the soil-bentonite slurry wall (slurry wall) was retained for further evaluation. The slurry trench excavation method of installation permits visual inspection of the key material and greatest confirmation of the key-in depth during construction. Typically, slurry wall installation utilizes low permeability backfill, which presents an opportunity to reuse the material excavated during trenching.

The slurry walls would be installed perpendicular to groundwater flow surrounding, upgradient, or downgradient of the AP-1 closure-in-place footprint. Slurry walls are excavated using specialized one-pass excavators and trenching equipment. The barrier construction method(s) will be based on soil properties and depths. The excavations are maintained for wall construction by circulation of a bentonite slurry. Once the slurry trench reaches the design depth, the original soil is replaced by a soil/bentonite or cement/bentonite mix to minimize lateral groundwater flow.

4.2.1.1 Upgradient Slurry Walls

An AP-1 upgradient slurry wall AEM would impede lateral groundwater flow into the closure-in-place footprint by directing a component of the flow around the outside of the AP-1 limits. As a result, the potentiometric surface elevation will be lowered and thus the volume of saturated CCR will decrease. The wall would extend from the ground surface through the saprolite and be keyed into the top of the PWR along the west/northwest sides of the AP-1 closure-in-place footprint.

The initial screening evaluation considered the CSM, as discussed in Section 2.0. Somewhat unique to AP-1 is that the Knob Area, which has been identified as a significant area of recharge, is a peninsula around which AP-1 is oriented. In order for any upgradient slurry wall to be effective, it would need to be positioned such that Knob Area recharge would be directed away from AP-1. However, due to the morphology of the Knob Area/AP-1 boundary, a wall installed at this interface would result in a horseshoe configuration directing recharge inward, and it is anticipated that installation depth would necessitate keying into the PWR. As a result of the upgradient wall configuration and the key-in material, the increased head's only outlet would be under the wall and into AP-1, reducing the effectiveness of the upgradient wall option. Therefore, upgradient slurry walls are screened out of further consideration below.

4.2.1.2 Slurry Wall Surrounding the Perimeter of AP-1

A slurry wall surrounding the perimeter of the AP-1 closure-in-place footprint is also screened out for the same reasons as the upgradient slurry wall.

4.2.1.3 Downgradient Slurry Wall

The purpose of a downgradient slurry wall is to impede the flow of groundwater flow out of the ash pond. The barrier is installed from the approximate depth of the permanent groundwater table to a target depth. As with the upgradient slurry wall, the key-in depth would be within the PWR.

Keying into the PWR is anticipated to reduce groundwater flow out of the unit. The downgradient slurry wall AEM option is carried forward. Due to significant recharge associated with the Knob Area, a combination of AEMs that addresses Knob Area recharge such as extending the final cover to include the Knob Area (see Section 4.2.3) and a downgradient slurry wall is also carried forward.

4.2.2 Extraction Systems

The potentiometric surface within the closed-in-place AP-1 could be lowered and maintained by physically removing water through the use of extraction systems within the closure-in-place footprint. At the site, this could be achieved through a water extraction system using a network of pumping wells or through a downgradient funnel and gate combination technology system.

A well-based water extraction system could include a network of wells installed within the AP-1 closure-in-place footprint along the upgradient and/or downgradient boundary. Pumping would create a steeper gradient resulting in flow toward the extraction wells, potentially increasing the flow of groundwater into AP-1 before its extraction.

Pumping wells or and any extraction system (wells, pumps, control panel, and energy source) would need to be monitored and maintained to sustain a lowered potentiometric surface within the AP-1 closure-in-place footprint. High pH levels and biological fouling experienced in previous test programs at the site indicate that management of an extraction and treatment system is not a practical option. Elevated pH and biological fouling would result in frequent shutdown of extraction system components, increased O&M activities and possibly replacement of wells. Therefore, as a result of these considerations, hydraulic extraction are eliminated from further evaluation in this report.

An alternative to an extraction/recovery well network is a downgradient funnel and gate combination technology system. The funnel and gate system method is like the downgradient slurry wall in that it is primarily comprised of a downgradient vertical wall (the funnel) which would be installed similarly to the slurry walls discussed above. However, this AEM option incorporates “gates” installed at various locations along the funnel wall/slurry wall to collect water. The gates are typically comprised of high permeability media to facilitate extraction. Gates would typically consist of in-ground vaults or basins that allow for direct contact with water to necessary depths, but also make maintenance of the extraction system/replacement possible if fouling occurs. Gate locations, depths, and thicknesses would be determined based on the site conditions, hydrogeologic characteristics, proximity to downstream restraints, and/or regulatory requirements for monitoring of the downgradient groundwater.

Since these extraction AEMs would require long-term extensive maintenance, jeopardizing system reliability, extraction wells and/or a funnel and gate system are screened out and not further considered below.

4.2.3 Final Cover Enhancement Advanced Engineering Methods

Another AEM considered is the expansion of the final cover system over the 54-acre Knob Area. The Knob Area is an undeveloped topographic high along the western edge of the AP-1 footprint (see **Figure 1**), which does not contain CCR. As discussed in the CSM and in the HAR, the Knob Area is located upgradient from AP-1 and groundwater flows from the Knob Area to the AP-1 closure-in-place footprint. Capping this area with low permeable material is expected to reduce infiltration directly upgradient of the AP-1 closure-in-place footprint and, thereby, lower the potentiometric surface elevation resulting in a gentler hydraulic gradient across the closed footprint. Benefits of this AEM are anticipated to include:

- Eliminates the significant source of recharge from the Knob Area.
- Allows for use of on-site borrow materials generated during grading of Knob Area.

The regrading and incorporating of the Knob Area cap AEM into the final cover system is carried forward for further evaluation. Additionally, a combination of extending the final cover system over the Knob Area coupled with installing downgradient slurry walls (same as the downgradient slurry walls (mentioned in Section 4.2.1) is also carried forward.

4.3 Groundwater Modeling Objectives

The preliminary evaluations set forth in Section 4.2 result in two AEM technologies (i.e., vertical barriers and final cover enhancement) being retained for further evaluation separately and in combination. In this section modeling is used to assess potential effectiveness and performance of the retained AEMs.

The numerical groundwater model developed for the AP-1 area is described in detail in the Groundwater Model Summary Report included as **Appendix A**. The model represents steady state, pre-closure conditions and was used as the model foundation to simulate post-closure conditions, including the AEMs. These post-closure simulations are described in detail in **Appendices A** and **B**.

The steady state model provides a consistent tool to compare the relative effectiveness of the AEM options and configurations. The model is well calibrated and model projections for the pre-closure conditions based on 2016 model inputs are consistent with recent field measurements. For these reasons, this steady state model is well suited for this evaluation. The groundwater model was used to provide specific information which was used to compare the different post-closure scenarios.

Groundwater flow models are necessarily simplified mathematical representations of complex natural systems. Therefore, all groundwater models have limits to their accuracy and associated uncertainties in model predictions. The goal of this modeling was not to predict precise outcomes but to provide relative groundwater elevation and flow information to facilitate a comparative evaluation of AEM options. **Appendix A** discusses the model calibration and anticipated accuracy and concludes that the accuracy is within industry standards.

The model was used to compare the following five scenarios, three of which were developed from the two retained AEMs:

Table 4-2. Summary of AEM Modelled Scenarios

Scenario No.	Description of Modelled Scenario
0	Pre-Closure Conditions
1	Baseline Closure
2	Downgradient Slurry Wall
3	Extended Final Cover System to Include the Knob Area
4	Extended Final Cover System to Include Knob Area and Downgradient Slurry Wall

4.4 Detailed Evaluation of Methods

Two AEM technologies representing three AEM scenarios were carried forward from the initial evaluation in Section 4.2 above (Scenario 2: downgradient slurry walls, Scenario 3: Knob Area capped, and Scenario 4: downgradient slurry walls with Knob Area capped). The AEMs are further evaluated based on the post-closure groundwater model simulations, with the following key factors for consideration:

- Reduction in thickness of CCR below the potentiometric surface
- Reduction in volume of CCR below the potentiometric surface
- Reduction of flow through the CCR in the AP-1 closure-in-place footprint

- Increase in time for a modeled seeded water particle track to travel from the highest potentiometric surface elevation within the CCR and express itself at the AP-1 boundary. Particle tracking helps to visualize groundwater flow fields, yielding insights into transit time and flow pathways. Particles were placed at four locations with the thickest portion of CCR below the potentiometric surface (see **Figures 6A** through **6E** in **Appendix B**). Particles B and D provide the highest and lowest changes in transit times and are presented below for comparison.

- Implementability considerations, including constructability, operations and maintenance considerations, and potential impacts or adverse effects from AEMs.

The comparison of these criteria for each scenario is summarized on **Table 1**. Selected model results for each scenario simulation are presented in the Sections 4.4.1 to 4.4.5 below.

4.4.1 Scenario 0: Pre-Closure Conditions

Scenario 0 represents the configuration of AP-1 during its operating life and is referred to within this document as the pre-closure condition, which is illustrated in **Figure 2**.

Groundwater model simulated results for pre-closure conditions are summarized as Scenario 0 in **Table 1**. **Appendix A** details the AP-1 pre-closure model setup and conditions. **Appendix B** includes figures showing the pre-closure conditions with simulated potentiometric surface contours, areas of CCR below the potentiometric surface within the closure-in-place footprint.

The pre-closure conditions (Scenario 0) form the baseline to assess changes associated with the post-closure scenarios (1 through 4).

4.4.2 Scenario 1: Baseline Closure

The baseline closure is described in Section 3.0. **Figure 3** shows the layout of the baseline closure design. Model predictions are provided in **Appendix A**. Additional details for groundwater model simulations representing baseline closure are presented in **Appendix B**.

- The volume of CCR below the potentiometric surface is modeled to decrease by 76.3%, with a reduction in the maximum thickness of CCR below the potentiometric surface of 59.5%, and a reduction of the area of CCR below the potentiometric surface by 46.9%.

- Modeled flow out of AP-1 is approximately 91.3% less than pre-closure (Scenario 0).

- Compared to pre-closure, estimated water particle travel time to the downgradient permit boundary ranges increased between 364% and 64%, depending on particle starting location.

4.4.3 Scenario 2: Downgradient Slurry Walls

In Scenario 2, the steady state baseline closure groundwater model was modified to include slurry walls placed along the existing dikes in the closure-in-place footprint as shown in **Figure 4**. Slurry walls were placed along the downgradient segments of the perimeter. Slurry walls were assigned a hydraulic conductivity value of 1×10^{-7} (cm/s) in the groundwater model. The slurry walls in the groundwater model are presented as 1 ft thick with a maximum depth of approximately 110 ft below ground surface.

Additional details for groundwater model simulations representing the downgradient slurry wall AEM options are presented in **Appendix B**.

- The volume below the potentiometric surface decreased by 76.6%, with a reduction in the maximum thickness of CCR below the potentiometric surface of 59.6%, and a reduction of the area of CCR below the potentiometric surface by 47.2%.
- Modeled flow out of AP-1 is approximately 91.9% less than pre-closure (Scenario 0).
- Compared to pre-closure, estimated water particle travel time to the downgradient permit boundary ranges increased between 343% and 100%, depending on particle starting location.

4.4.4 Scenario 3: Extended Final Cover System to Include the Knob Area

This AEM scenario expands the final cover system over the Knob Area. Groundwater model results for Scenario 3 are summarized in **Table 1**. Additional modeling details for Scenario 3 are included in **Appendix B**.

- The volume below the potentiometric surface decreased by 80.01 %, with a reduction in the maximum thickness of CCR below the potentiometric surface of 63.3%, and a reduction of the area of CCR below the potentiometric surface by 49.3%.
- Modeled flow out of AP-1 is approximately 91.3% less than pre-closure (Scenario 0).
- Compared to pre-closure, estimated water particle travel time to the downgradient permit boundary ranges increased between 392% and 79%, depending on particle starting location.

4.4.5 Scenario 4: Extended Final Cover System to Include Knob Area and Downgradient Slurry Walls

The final AEM considered is to expand the final cover by extending the final cover system over the Knob Area as described in Scenario 3 and installing the downgradient slurry wall as described in Scenario 2. Scenario 4 is presented in **Figure 6**. Modeling results are presented on **Table 1** with details in **Appendix B**.

- The volume below the potentiometric surface decreased by 80.00%, with a reduction in the maximum thickness of CCR below the potentiometric surface of 63.3%, and a reduction of the area of CCR below the potentiometric surface by 46.7%.
- Modeled flow out of AP-1 is approximately 91.3% less than pre-closure (Scenario 0).
- Compared to pre-closure, estimated water particle travel time to the downgradient permit boundary ranges increased between 392% and 79%, depending on particle starting location.

5. Comparison of AEM Options

5.1 Relative Comparison of AEMs

Each of the modelled AEM options are compared to the pre-closure conditions, the baseline closure, and each other with respect to relative effectiveness and implementability below. Groundwater model results for each scenario are summarized in **Table 1**. Based on the modeled scenarios presented, improvement to groundwater elevations and flow conditions post-closure at AP-1 can be achieved by each of the modeled AEM options.

5.1.1 Baseline Closure

The baseline closure (Scenario 1) shows significant changes in the conditions at AP-1, including an estimated 76% reduction in the volume of CCR below the potentiometric surface, and a 47% reduction in area. The flow of water out of AP-1 was also reduced by 91%.

5.1.2 Downgradient Slurry Walls

Scenario 2 adds the downgradient slurry wall AEM to the baseline closure. As shown on **Table 1**, the model outcomes for this scenario are similar to the baseline closure, with a 76% and 47% reduction in the volume and area, respectively, of CCR below the potentiometric surface. The flow was estimated to be reduced by 92%. The addition of downgradient slurry walls appears to enhance post closure conditions over the baseline closure to a less significant degree than the other AEM options evaluated.

In addition, there are potential constructability issues with extending the wall vertically to significant depths and into fractured bedrock.

Implementability considerations for the slurry wall AEM include:

- Slurry walls are excavated using specialized such as one-pass excavators or trenching equipment extending within the PWR. The overall depth of the wall and the nature of the subsurface materials significantly influence the method of construction of the barrier and adds risk to the functionality of the barrier.
- The excavations are maintained for wall construction by circulation of a bentonite slurry. Once the slurry trench reaches the design depth, the slurry is displaced by a soil/bentonite or cement/bentonite mix intended to minimize lateral flow of the upgradient groundwater or water within an area of encapsulation.
- Downgradient slurry walls constructed to the modeled depth (110 ft) would require specialty equipment and given this depth, it is anticipated to be more difficult to observe/verify successful installation during construction.

5.1.3 Extended Final Cover Systems

Scenario 3 extends the AP-1 cap system over the Knob Area. **Table 1** shows that this AEM enhances the baseline closure, with 80% and 49.3% reduction in volume and area, respectively, of CCR below the potentiometric surface, compared to 76.3% and 47% for the baseline closure. The estimated flow is similar to the baseline closure.

Implementability considerations for this measure include:

- The incorporation of the Knob Cap AEM into the closure design can be implemented using standard construction equipment. This AEM also provides another important benefit to the AP-1 closure construction by providing on-site borrow materials to use for the closure construction thereby eliminating the need for off-site borrow source.
- Scenario 3 is readily implementable using materials and construction techniques already being deployed with the baseline closure.

5.1.4 Extended Cap and Slurry Walls Combined

The final AEM evaluated (Scenario 4) was the combination of the extended cap and downgradient slurry walls. **Table 1** shows the addition of the slurry walls does not significantly enhance closure conditions compared to the extended cap alone (Scenario 3). Relative to Scenario 3, the model projected essentially the same change to both the flow from AP-1 and in the volume of CCR below the potentiometric surface. Additionally, the surface area of CCR below the potentiometric surface increased as compared to Scenario 3 (49.3% reduction in Scenario 3 vs 46.7% reduction in Scenario 4).

Implementation and constructability considerations for this scenario are the same as Scenarios 2 and 3 combined.

6. Conclusion

According to the baseline closure model, the volume of CCR below the potentiometric surface is modeled to decrease by 76.3%, a reduction in the maximum thickness of CCR below the potentiometric surface of 59.5%, and a reduction of the area of CCR below the potentiometric surface by 46.9%. Additionally, modeled flow out of AP-1 is approximately 91.3% less than pre-closure conditions.

Each modeled AEM option results in additional benefits compared to both the pre-closure conditions as well as the baseline closure. The model scenarios predicted similar levels of success regarding groundwater flow control across AP-1; however, Scenarios 3 and 4 are more effective than Scenario 2 in terms of reducing the volume of CCR below the potentiometric surface and the area of CCR below the potentiometric surface. When comparing Scenarios 3 and 4, the addition of the slurry wall in Scenario 4 is projected to increase the surface area of CCR below the potentiometric surface whereas Scenario 3 is projected to result in a greater reduction.

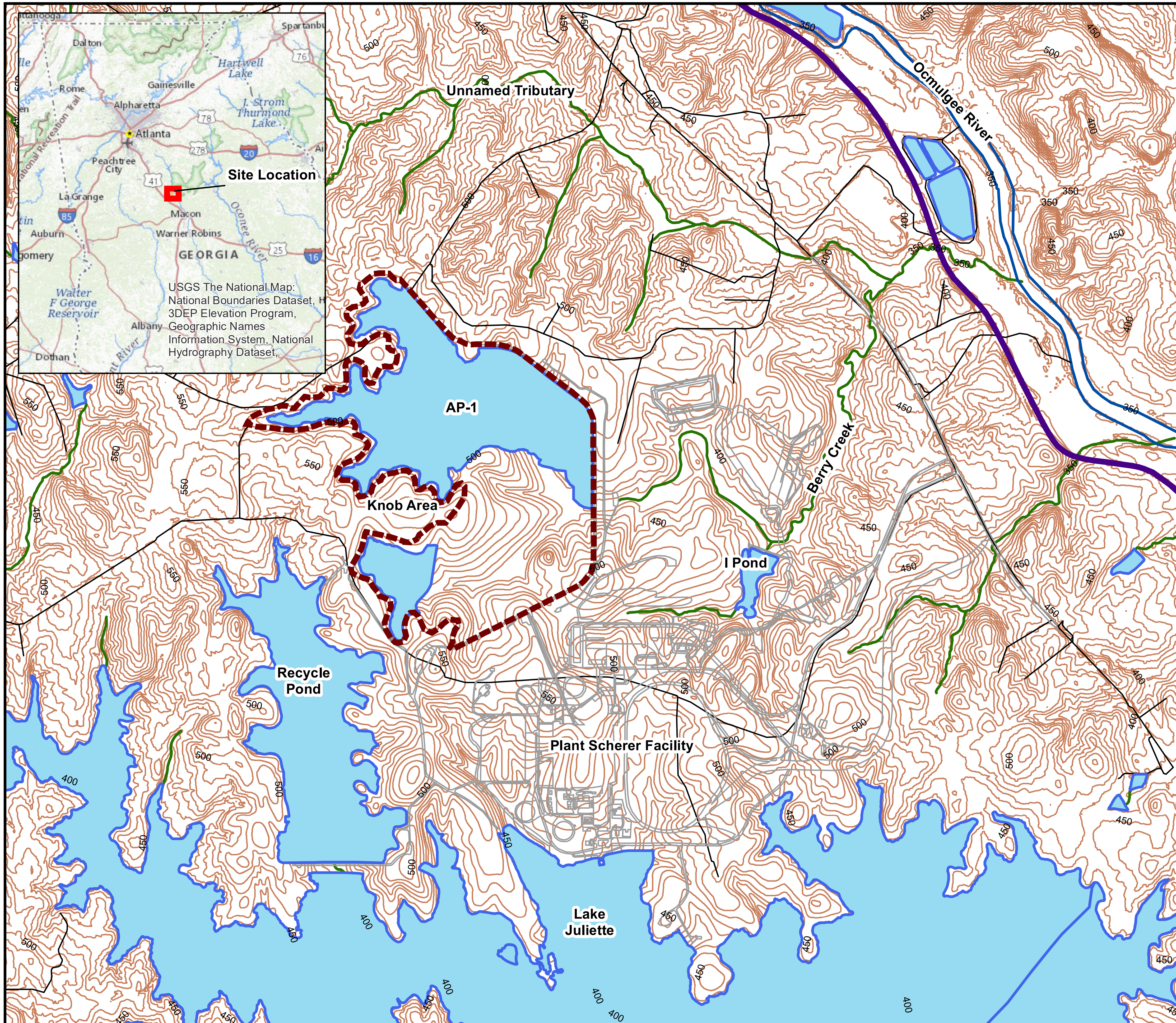
Extending the AP-1 cap system over the Knob Area (Scenario 3) is readily implementable using materials and construction techniques already being deployed with the baseline closure. In contrast, the downgradient slurry walls would likely require specialty equipment, and given site geology, it is anticipated to be more difficult to observe/verify successful installation during construction. Thus, the balance of feasibility considerations—i.e., implementation factors and predicted effectiveness—support GPC's selection of the Extended Final Cover System to Include the Knob Area (Scenario 3) as an AEM for closure at AP-1. The selected AEM has been incorporated into the closure design.

The selected AEM further establishes hydraulic control across AP-1 with the CCR volume below the potentiometric surface modeled to decrease by 80.0%, a modeled reduction in the maximum thickness of CCR below the potentiometric surface of 63.3%, and a modeled reduction of the area of CCR below the potentiometric surface by 49.3%. Additionally, the modeled flow out of AP-1 is approximately 91.3% less than pre-closure conditions.

Groundwater quality at AP-1 is and will continue to be monitored in accordance with federal and state requirements and will be addressed through the regulatory assessment of corrective measures (ACM) process.

7. References

WSP, 2024. Hydrogeologic Assessment Report, Plant Scherer Ash Pond 1 (AP-1). Rev05. September 2024.



Legend

- Approximate AP-1 Boundary
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- Topographic Contour (10 ft interval, ft msl)

Note:
Vertical Datum NAVD 88
Topography Source:
USGS 7.5 Minute Quadrangle, East Juliette, 2011

N

0 2,000 4,000 Feet

AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

ADVANCED ENGINEERING METHODS FEASIBILITY REPORT PLANT SCHERER ASH POND 1 CLOSURE

FILENAME:

SITE LOCATION AND TOPOGRAPHY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	10/20/2021	1

Legend

- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- AP-1 Boundary

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

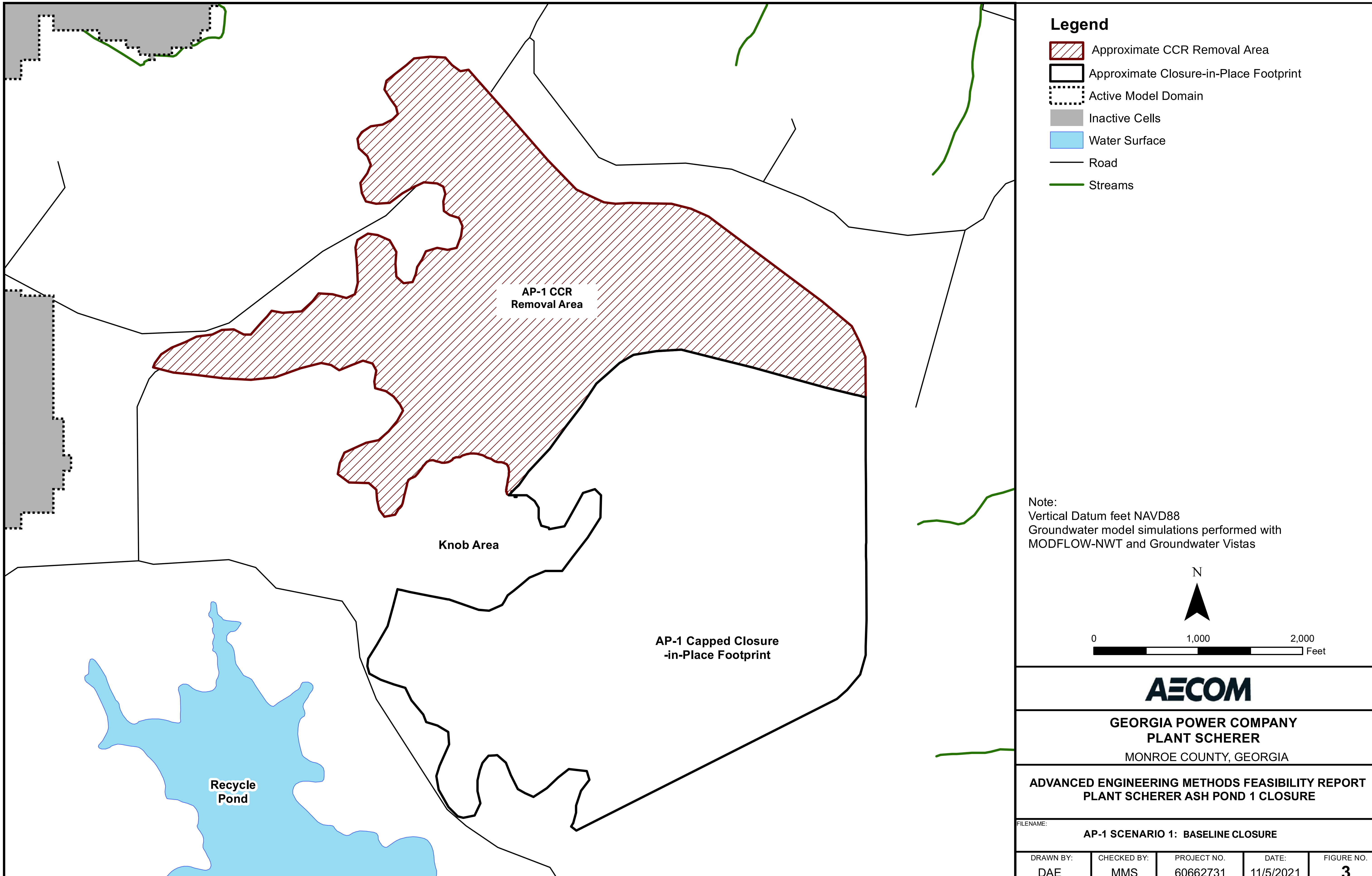
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

ADVANCED ENGINEERING METHODS FEASIBILITY REPORT
PLANT SCHERER ASH POND 1 CLOSURE

FILENAME:
AP-1 SCENARIO 0: PRE-CLOSURE CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60662731	11/5/2021	2



Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

AECOM

GEORGIA POWER COMPANY
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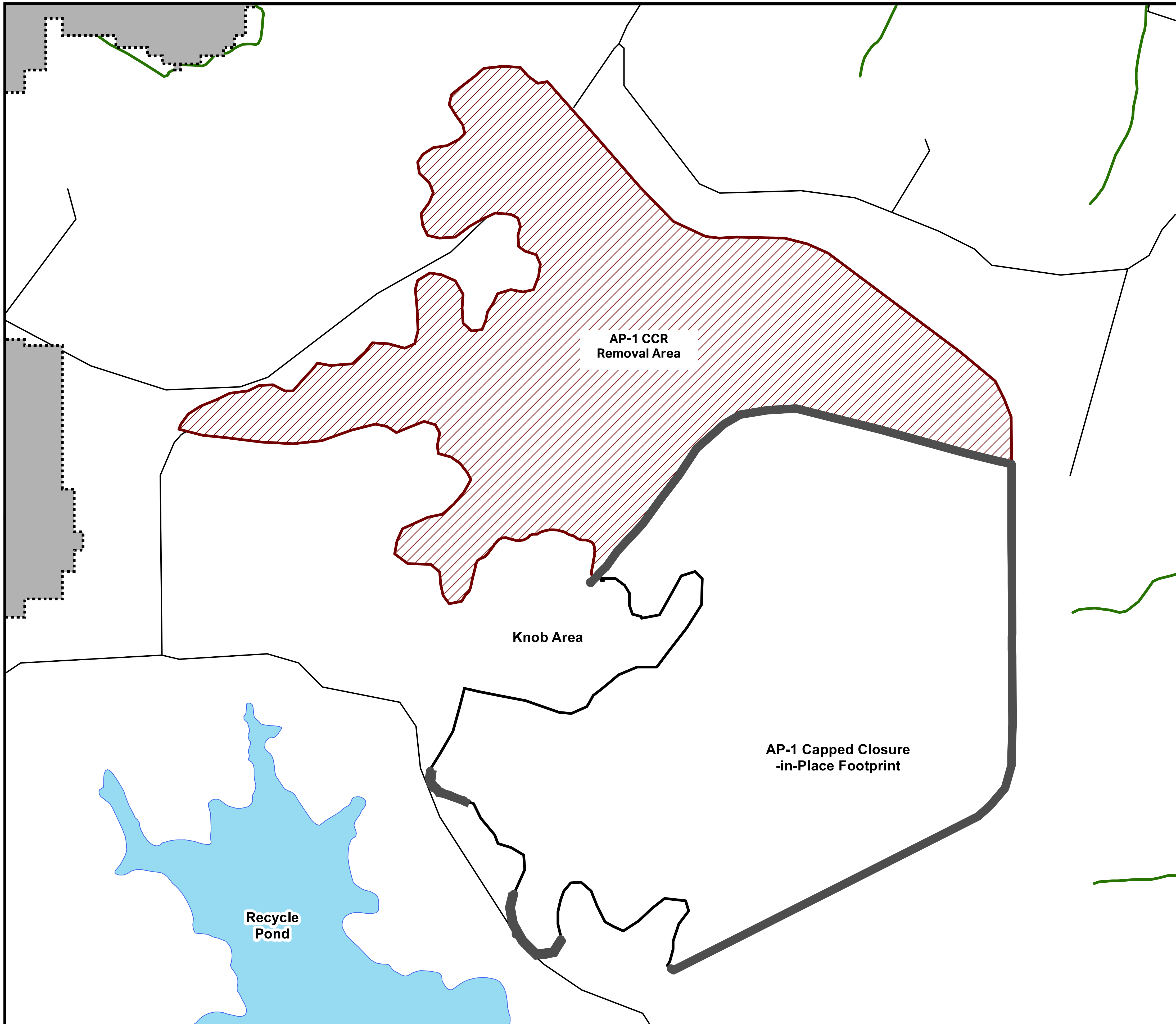
MONROE COUNTY, GEORGIA

ADVANCED ENGINEERING METHODS FEASIBILITY REPORT
PLANT SCHERER ASH POND 1 CLOSURE

FILENAME: **AP-1 SCENARIO 1: BASELINE CLOSURE**

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60662731	11/5/2021	3



Legend

- Slurry Wall (Vertical Wall Barrier)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

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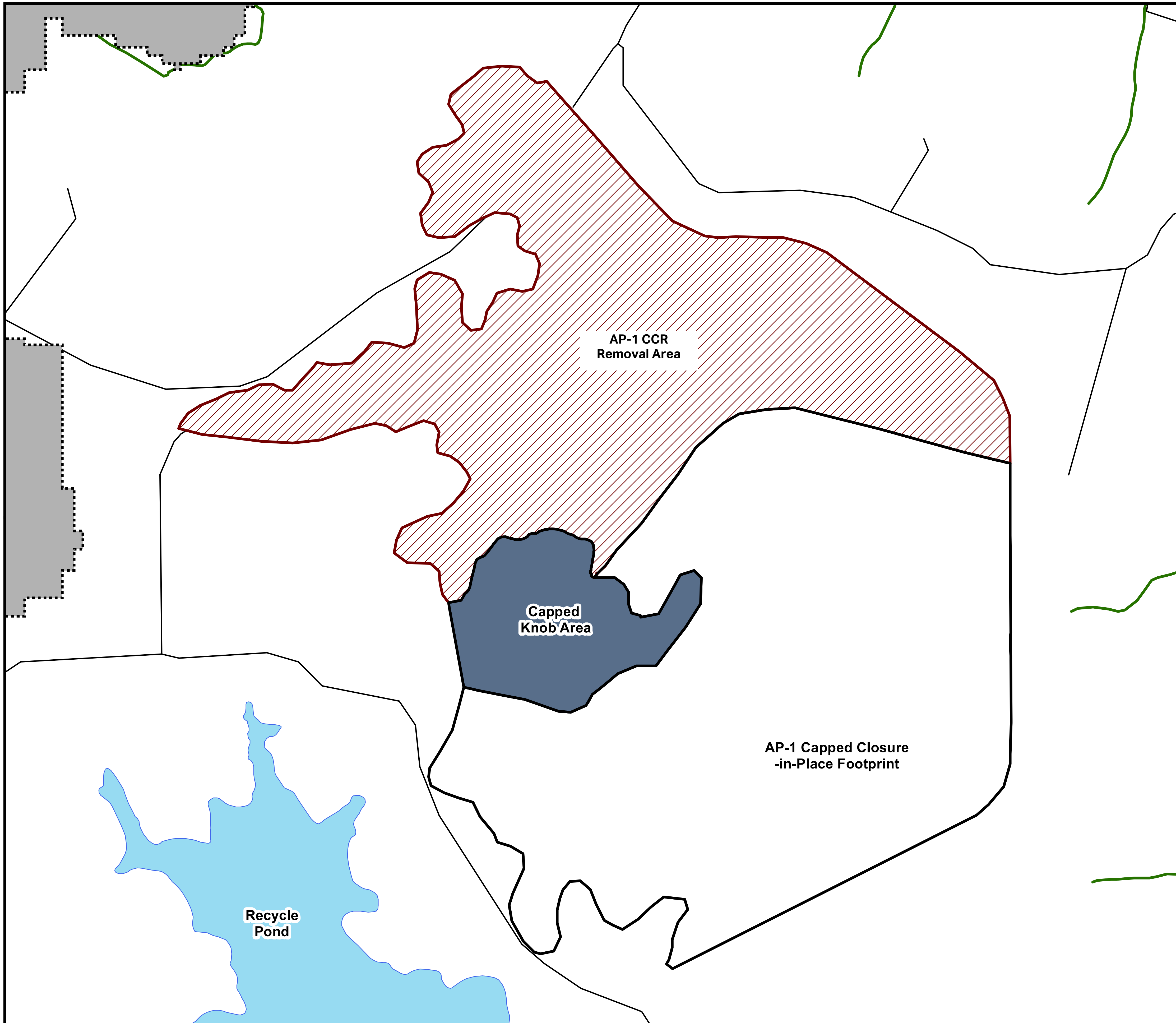
PLANT SCHERER
MONROE COUNTY, GEORGIA

ADVANCED ENGINEERING METHODS FEASIBILITY REPORT
PLANT SCHERER ASH POND 1 CLOSURE

FILENAME:
AP-1 SCENARIO 2: BASELINE WITH DOWNGRADIENT SLURRY WALLS AEM

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60662731	11/5/2021	**4**



Legend

- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Capped Knob Area
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

AECOM

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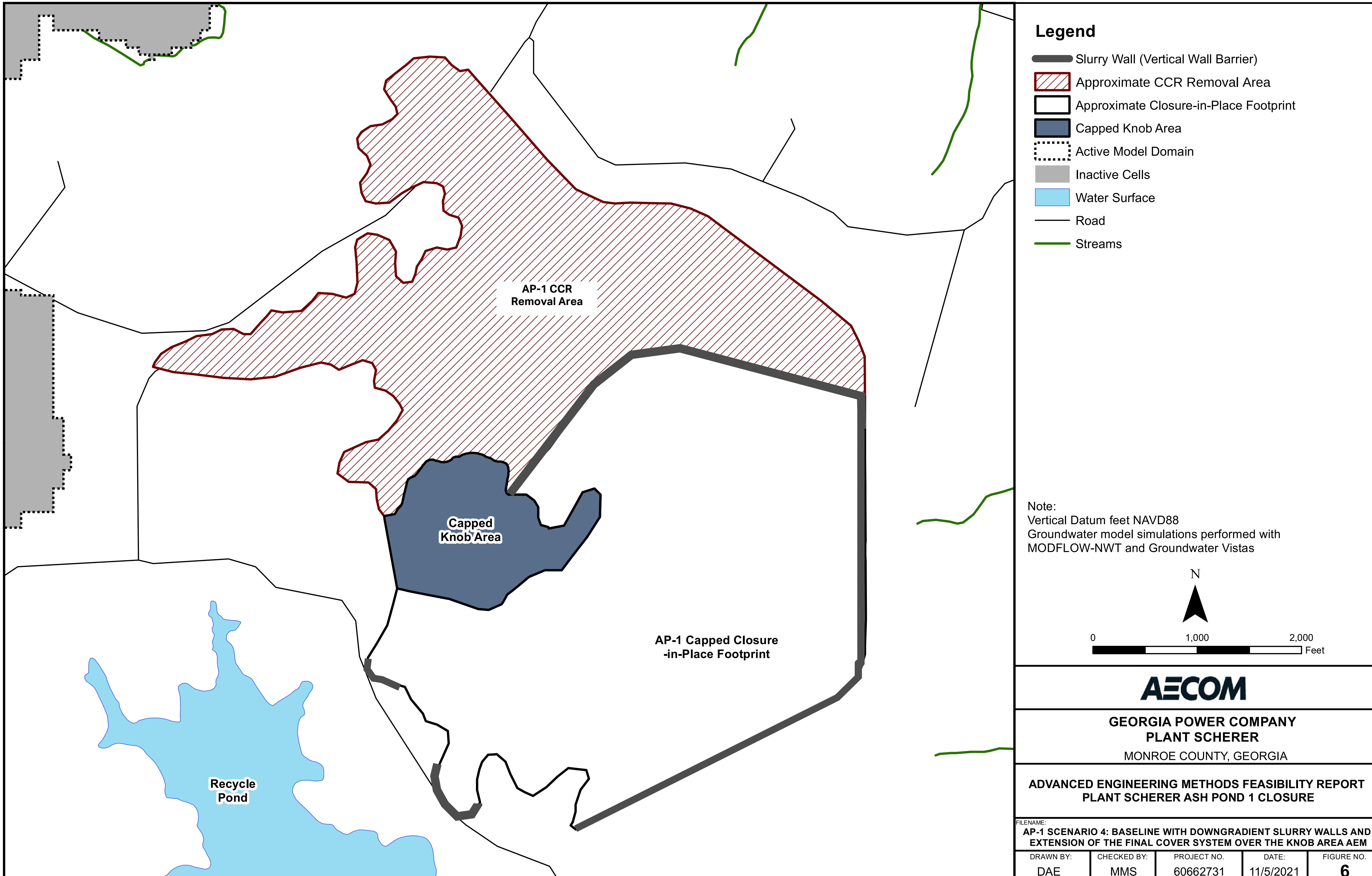
PLANT SCHERER
MONROE COUNTY, GEORGIA

ADVANCED ENGINEERING METHODS FEASIBILITY REPORT
PLANT SCHERER ASH POND 1 CLOSURE

FILENAME:
AP-1 SCENARIO 3: BASELINE WITH FINAL COVER SYSTEM EXTENDED OVER THE KNOB AREA AEM

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60662731	11/5/2021	5


AP-1 CCR
Removal Area
Capped
Knob Area
AP-1 Capped Closure
-in-Place Footprint
Recycle
Pond
Legend
Slurry Wall (Vertical Wall Barrier)
Approximate CCR Removal Area
Approximate Closure-in-Place Footprint
Capped Knob Area
Active Model Domain
Inactive Cells
Water Surface
Road
Streams
Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with
MODFLOW-NWT and Groundwater Vistas
N
0
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Feet
AECOM
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA
ADVANCED ENGINEERING METHODS FEASIBILITY REPORT
PLANT SCHERER ASH POND 1 CLOSURE
FILENAME:
AP-1 SCENARIO 4: BASELINE WITH DOWNGRADIENT SLURRY WALLS AND
EXTENSION OF THE FINAL COVER SYSTEM OVER THE KNOB AREA AEM
DRAWN BY: DAE
CHECKED BY: MMS
PROJECT NO. 60662731
DATE: 11/5/2021
FIGURE NO. 6

Table 1
Summary of Detailed AEM Evaluations
AP-1, Plant Scherer, Monroe County, Georgia

Scenario No.	AP-1 Conditions	Advanced Engineering Measure Enhancement	Effectiveness						
			Maximum Height of Potentiometric Surface Above Bottom of CCR Unit (ft)	Volume of CCR Below Potentiometric Surface (Million CY)	% Reduction in Volume of CCR Below the Potentiometric Surface Compared to Scenario 0	Percent (%) Reduction of Area of CCR Below the Potentiometric Surface	% Reduction in Groundwater Flow	Particle Track "B" travel time to Permit Boundary (Years)	Particle Track "D" travel time to Permit Boundary (Years)
Current, Pre- Closure Conditions									
0	Pre-Closure Conditions	-	85.0	15.20	-	-	-	81	14
Consolidation Post-Closure Condition (Baseline)									
1	Cover Installed	None. Current, Baseline Closure	34.4	3.61	76.3%	46.9%	91.3%	65	23
AEM Options for with 2019 Closure Design Post-Closure Conditions									
2	Cover Installed	Downgradient Slurry Walls	34.3	3.56	76.6%	47.2%	91.9%	62	28
3	Cover Installed	Knob Area Capped	31.2	3.04	80.0%	49.3%	91.3%	69	25
4	Cover Installed	Knob Capped and Downgradient Slurry Walls	31.2	3.04	80.0%	46.7%	91.3%	69	25

Notes:
1 These values were obtained from groundwater flow modeling results, which are necessarily simplified mathematical representations of complex natural systems. Because of this, all groundwater models have limits to their accuracy.
2 CCR = Coal Combustion Residuals
3 These model results were intended for use as relative comparisons between scenarios, and not as precise predictions of post closure conditions.
4 Outflow from layer 1 is through the base of CCR.
5 Penetration depths into specified media only apply where sufficient thickness occurs. Otherwise penetration depth truncates at the top of the underlying layer.
6 Particle D shows the thickest area of CCR below the potentiometric surface for both the Pre- and Post closure settings.
7 Particle B shows the thickest area of CCR below the potentiometric surface for Post-closure settings.
8 Refer to Appendix B for all particle travel time discussion.

Appendix A
Groundwater Modeling Summary Report Revision 1

GROUNDWATER MODEL SUMMARY REPORT

PRE- AND POST-CLOSURE CONDITIONS

PLANT SCHERER - ASH POND 1 (AP-1)

MONROE COUNTY, GEORGIA

FOR

Georgia Power

Revision 1 – September 2024

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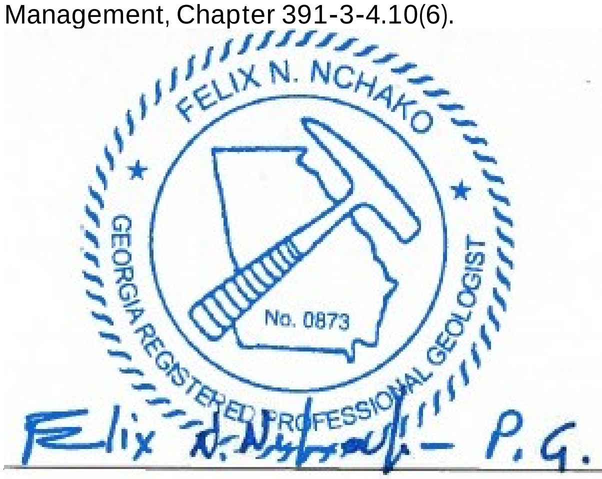
LIST OF TABLES

LIST OF FIGURES

This Groundwater Model Summary Report, Georgia Power Company - Plant Scherer Ash Pond AP-1 has been prepared to meet the requirements of the Georgia Solid Waste Management Rule by a qualified groundwater scientist with AECOM. References to the appropriate 391-3-4 Rules are incorporated throughout this document.

I certify that I am a qualified groundwater scientist as defined in 391-3-4-.01, who is a professional engineer or geologist registered to practice in Georgia who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields that enable individuals to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action. I further certify that this Groundwater Monitoring Plan was prepared by myself or by a subordinate working under my direction. The design of the groundwater monitoring system was developed in compliance with the Georgia Environmental Protection Division (GA EPD) Rules of Solid Waste Management, Chapter 391-3-4.10(6).



1 INTRODUCTION

This Groundwater Flow Modeling Report presents the design, setup, calibration, and results of three-dimensional, numerical steady-state, groundwater flow modeling conducted on behalf of Georgia Power Company (GPC) for the Plant Scherer Ash Pond 1 (i.e. AP-1, the site) coal combustion residuals (CCR) impoundment, located in Monroe County, Georgia. A site location map is provided as **Figure 1**. Modeling activities were undertaken in 2017 to create a calibrated groundwater flow model, which was used to simulate pre-closure conditions. Modifications to the pre-closure model were added to reflect the AP-1 closure design as of January 2020.

The objective of utilizing groundwater modeling to simulate pre- and post-closure AP-1 conditions is to evaluate the effects of the anticipated AP-1 closure design on the subsurface system.

1.1 Project Description

A steady-state groundwater flow model of the site was calibrated to represent the June 2016 (pre-closure) subsurface hydrogeologic conditions observed at the site. Once the pre-closure model was calibrated, the model was modified to represent a post-closure flow condition that incorporated the following AP-1 closure design elements:

- Remove AP-1 free water;
- Reducing of head in the CCR;
- Construction of a divider berm at the northern limits of the consolidated CCR;
- Grading of CCR within the consolidated closure-in-place footprint and topographic high peninsula (referred to in this report as the knob area) to achieve final cover lines and grades, and;
- Construction of a final cover system over the consolidated CCR and the knob area.

The knob area is a peninsula extending into AP-1. The knob area is undeveloped and does not contain CCR. As part of the closure design, the knob area is anticipated to be included in the AP-1 cover system as shown in **Figure 2**.

Model parameters including hydraulic conductivity, recharge and evapotranspiration (ET) were modified to reflect the closure design in the post-closure model.

Vertical datum used in this report is North American Vertical Datum of 1988 (NAVD88).

1.2 Site History

Plant Scherer is located in Juliette, Georgia along the northeast edge of Monroe County. The plant is approximately 30 miles north of Macon, Georgia and approximately 60 miles southeast of Atlanta, Georgia. Figure 1 shows the site location. Plant Scherer is located in a rural area and bordered by mainly agricultural and residential properties. Plant Scherer occupies approximately 12,000 acres and is situated on the north banks of the 3,600-acre Lake Juliette, a manmade lake constructed in conjunction with the plant in the early 1980s. Prior to construction of the plant, the entire plant area was undeveloped, wooded, and hilly property with relief as much as 200 ft or more across the site.

AP-1 is a valley-filled CCR impoundment that was commissioned in 1980 and became operational in 1982. AP-1 is located on a topographic high area of the plant that encompasses 550 acres. AP-1 typically operated at a normal pool of approximately El. 495 NAVD88 and discharges through a spillway structure to the adjacent 220-acre Recycle Pond.

AP-1 contains approximately 16 million cubic yards (CY) of CCR. In addition to sluiced CCR (fly and bottom ash), AP-1 accepted discharge flows from four on-site wastewater basins, runoff from the coal pile, precipitator wash down, gypsum blowdown, leachate from the PAC Ash and Gypsum landfills, and on-site sewage and other low volume wastes. Measures are being implemented by GPC and the plant to halt all waste streams to AP-1 and convert to dry-handling and landfilling of CCR generated by the power production processes by October 2020. The anticipated closure design for AP-1 is shown in **Figure 2**.

1.3 Site Geologic and Hydrologic Setting

AP-1 was constructed directly over Berry Creek, with the tallest dike section built across the creek just east of a major branch in the creek. Additional branches or drainage tributaries to Berry Creek have developed as a result of site drainage features being modified from AP-1 construction. Primarily, stormwater runoff from current site and adjacent properties flows overland and discharges into Berry Creek north of AP-1 (south of Luther Smith Road) and flows east to low-lying areas within the plant limits (Figure 3). Residual surface water flows from Berry Creek and the downstream areas eventually flow towards an on-site stormwater management pond referred to as the I-Pond, which eventually flows to the east.

The Recycle Pond and Lake Juliette were constructed over Rum Creek to the south. The Recycle Pond is pumped into the plant and also drains to Lake Juliette which discharges to Rum Creek via a spillway. Rum Creek joins the Ocmulgee River southeast of the plant.

Because it was important to understand predevelopment site conditions for the pre-closure groundwater flow model development, a predevelopment topographic map was created and is included as **Figure 4**. This map was created by overlaying pre-closure topography lines onto the 1973 predevelopment United States Geological Survey (USGS) East Juliette, GA SE/4 Forsyth 15' Quadrangle topographic map in CAD. A polygon was traced around the site to include topography that had been modified during development. Topographic lines within that polygon were erased and the elevation contours from the pre-development USGS map were traced. The traced contours were merged with the existing topography contours that had not been modified due to development.

Plant Scherer is in the Piedmont Geologic Province of central Georgia, which is underlain by igneous and metamorphic rock and forms the foothills of the Appalachian Mountains. The Piedmont extends west to east across Georgia, with the southern edge bordering the Coastal Plain and the northern edge bordering the Blue Ridge chain of the Appalachian Mountains to the north. It is an area of generally modest relief, rolling hills, and narrow valleys that contrast with the more dramatic relief of the Blue Ridge.

The regolith at Plant Scherer (ground surface to the top of fractured bedrock [FBR]) ranges in thickness across the site from 35 ft to at least 126 ft, and consists of residual soils, saprolitic material, and partially weathered rock (PWR). Residual soils are underlain by saprolitic material. Saprolitic material is generally encountered in the upper 5 ft of regolith, and consists of weathered in-place rock, referred to as saprolite. Relict rock structures, such as foliation and layering, are present in the saprolite. The PWR includes interlayered fresh to partially weathered rock, and saprolite.

According to previous studies, the regolith is underlain by bedrock that has been subjected to extensive weathering and consists of well-banded and well-foliated fine- to medium- grained, massive, poorly jointed, feldspathic biotite gneiss. Schistose zones are locally present, and consist of biotite-rich areas, and discreet layers and lenses of chlorite-actinolite schist and feldspathic hornblende gneiss/amphibolite. Isolated intrusive granitic bodies (shown as OZg) are located east and north of AP-

1, an isolated gabbro body (shown as OZpd) is located to the east of AP-1, a felsic dacite dike (shown as OZpd) is located immediately east of AP-1 and a diabase dike (shown as Td) is located north of and extends into AP-1. The top of bedrock generally mimics the topography though weathering is variable, due to varying rock hardness and density of fracturing. At some locations along the valley, streams have eroded the weathered rock resulting in shallower depths to the top of competent bedrock which is indicative of the Piedmont Province.

Groundwater generally first occurs in the saprolitic materials overlying bedrock and is hydraulically connected to the FBR. The primary source of groundwater for the site is recharge from precipitation, which is expected to occur in the topographically high areas with groundwater flow to the east and south. The AP-1 pool level maintains a higher head at 495 ft NAVD88 on all sides of AP-1 except the western edge, including the knob area, which has an elevation of approximately 520 ft NAVD88. Thus, the groundwater surrounding AP-1 (with the exception to the west of AP-1) is elevated compared to areas further away from AP-1.

Groundwater recharge is expected to occur in the topographically high areas (including the knob area) with flow to onsite tributaries.

2 DATA REVIEW

To develop the groundwater flow model, compiling pertinent data was necessary. Existing subsurface and relevant site information was reviewed and organized for model development. Additional data and information were collected to supplement the existing dataset and improve the model. A well-conceived conceptual site model (CSM) is necessary to develop a mathematical model and existing, pre-closure conditions at the site were reviewed and used to calibrate the model. This section documents data reviewed and used to develop the pre-closure model.

2.1 Review of Existing Site Data

Existing groundwater data and historical reports related to AP-1 and vicinity, and other relevant site data and information to support the development of the pre-closure groundwater flow model were reviewed. These efforts included reviewing the documents provided by Southern Company Services (SCS) and GPC, assimilation of data necessary for the groundwater modeling efforts, and supplemental data collection and processing necessary to fill identified data gaps to produce a robust pre-closure groundwater model.

Data relevant to the groundwater model included well, piezometer, and boring locations, subsurface lithology, potentiometric head measurements, hydraulic conductivity data, water supply well information, and other site feature information and are included as Tables 1 through 5. Table 6 was created from **Tables 2** and **3** for direct input of lithology (top and bottom elevation per model layer per boring) into the groundwater model. **Figure 5** shows the boring, monitoring well, and piezometer locations, including key site features.

Boring logs and well/piezometer installation records were gathered and reviewed to understand subsurface geology. The hydrogeologic layers used in the groundwater model are typical of the Piedmont Geologic Province. Layers include saprolite, PWR, FBR, and competent bedrock (CBR). The site topography and subsurface records were used to define the top and bottom elevations of each of the three main lithologic layers (saprolite, PWR, and FBR). Additionally, elevations to fill, CCR, and alluvium were defined, where these materials were observed.

The lithology (outside AP-1) above the saprolite layer is not represented in the groundwater model since groundwater does not occur above the saprolite. For the purposes of the model, lithology between the top of the saprolite and the ground surface are lumped together as part of the saprolite layer or model Layer 2 (see Section 4.1). The elevations to the top and bottom of each of the lithologic layers were tabulated for use in constructing the model.

Historical subsurface investigations at the site were completed by SCS and several different consultants. For model development purposes, characteristics noted in lithologic descriptions on the historic boring logs were used to select which model layer a specific subsurface description best fit. Drilling data including standard penetration test blow counts, relict rock features, grain size, drilling method, and refusal were used for model layer selection.

The lithologic descriptions in the logs were categorized into four layers for the pre- and post-closure groundwater models. Table A below compares the lithology terms used in the groundwater models and the Geologic and Hydrogeologic Report, Plant Scherer Ash Pond 1 (AP-1), Rev05 (WSP 2024) from shallow to deep:

Table A. Lithologic Layer Comparison

Lithologic Layers for Groundwater Modeling	Geologic and Hydrogeologic Report, Plant Scherer Ash Pond 1 (AP-1). Rev04 Lithologic Layers
Layer 1: Within AP-1: CCR/Dike Material (variable thickness), **Layer 1:** Outside AP-1 extents: • Overburden (Any unsaturated material, inactive cells, 1 -ft to 5 -ft thick) • Knob Area: (Any unsaturated material, active cells, 1 -ft thick)	Overburden/Residual Soils
Layer 2: Saprolite (variable thickness)	Overburden/Residual Soils/Saprolitic Soils
Layer 3: Partially Weathered Rock (PWR) (variable thickness)	Overburden/Saprolitic Rock/Transitionally Weathered Zone/PWR if blow counts >50/ft
Layer 4: Fractured Bedrock (FBR) (30' of top of bedrock)	Overburden/Transitionally Weathered Rock
Below Model: Competent Bedrock (CBR) (>50% RQD)	Competent Bedrock (>50% RQD)

Hydraulic conductivity data were tabulated by the geologic unit screened by the wells/piezometers located across the site. ~~along with the screened interval geologic unit of the wells/piezometers.~~ Hydraulic conductivity data were gathered from previous reports, AQTESOLV (Duffield, 2007) files, and a summary table provided by SCS.

Groundwater elevation data included well/piezometer IDs, date gauged, survey data, depth to water, water elevations, and screened interval of the geologic unit of the well/piezometer. Wells/piezometers were categorized by screened interval geologic unit (saprolite, PWR, or FBR). Groundwater elevations and contour maps for each of the well/piezometer categories were developed in Surfer and were used to evaluate flow directions and gradients. The most complete set of water level measurements, at the time, was the June 13, 2016 data set. This data set included the "B-series" wells screened in the CCR in AP-1. These data were used to calibrate the pre-closure model to observed June 2016 site conditions. The available surface water level measurements in June 2016 were selected for model boundary settings.

Available data on surface water features, NPDES discharges, and onsite pumping wells were studied in the pre-closure groundwater model development. The data included surface water elevations, permitted discharge, and well pumping rates that can affect the model calibration and water budgets.

2.2 Additional Data Collected for Modeling Effort

Hydraulic conductivity data was limited in some portions of the site where wells were sparse. ~~and H~~ydraulic conductivity values in a few wells/piezometers were uncharacteristically high for the region. Additional hydraulic conductivity tests (slug testing) were conducted in a subset of existing wells/piezometers to verify historic hydraulic conductivity data and supplement the dataset. Wells/piezometers that previously reported uncharacteristically high hydraulic conductivity values were retested and new data revealed lower hydraulic conductivity values, which is consistent with the values typical of the Piedmont region. The new hydraulic conductivity data was incorporated into the groundwater model. All hydraulic conductivity values incorporated into the groundwater model, including the values obtained from the additional slug testing are summarized in **Table 7**.

2.3 Conceptual Site Model

Groundwater modeling begins with developing a CSM which is a description of the elements of the existing groundwater system and how they interact. A CSM was developed for the groundwater modeling based on review and interpretation of the available data. Major elements of the CSM that are incorporated into the pre-closure groundwater model are described below:

Subsurface Hydrogeology

The site is located in the rolling hills of the Piedmont Province consisting of folded and faulted metamorphic rocks. The subsurface (shallow to deep) is composed of residual soils, saprolite, PWR, and FBR, over laying the CBR. The regolith (residual soils and saprolite) thins in valleys and stream areas, but otherwise has a generally consistent thickness across the site (not including AP-1). FBR is generally in the shallow bedrock with the underlying CBR having little to no groundwater.

Uppermost Aquifer

The uppermost aquifer at the site is located above CBR (i.e. within saprolite, PWR, and FBR). The hydraulically connected uppermost aquifer units are distinguished by their degree of weathering and different hydraulic conductivities, but groundwater can readily flow vertically between these units. The bottom of the uppermost aquifer is CBR.

Groundwater Recharge

The primary source of groundwater for the site is recharge from precipitation. Lesser amounts of groundwater occur from surface water bodies that have a higher surface water elevation than surrounding groundwater.

Groundwater Flow

Groundwater flow within the uppermost aquifer is generally unconfined, although the FBR may locally behave as a confined or semi-confined unit. The water table is a subdued reflection of topography, with higher groundwater elevations beneath the hills and lower elevations beneath the valleys.

Groundwater flow is generally downward beneath recharge areas and upward near streams and other discharge points. Vertical hydraulic gradients vary locally across the site and appear reversed at times depending on seasonal and temporal rainfall.

3 GROUNDWATER FLOW MODELING

The objective of utilizing groundwater modeling to simulate pre-closure and post-closure AP-1 conditions is to evaluate the effects of the anticipated AP-1 closure design on the subsurface flow system. In order to develop post-closure AP-1 groundwater conditions at the site, a pre-closure model was developed and calibrated to June 2016 observed groundwater conditions at the site.

3.1 Model Overview

The numerical groundwater flow model of Plant Scherer AP-1 and surrounding area was developed using the U.S. Geological Survey (USGS) computer program MODFLOW 2005 (McDonald and Harbaugh, 1988; USGS, 2005) with MODFLOW-NWT within the Groundwater Vistas® Version 7 pre- and post-processor. MODFLOW is one of the most widely used groundwater flow model. It is a three-dimensional finite-difference model, meaning that the model domain area is discretized into rows, columns, and layers.

3.2 Model Domain and Grid

The active model domain selected for the model is shown on **Figure 3**. The model domain was selected so natural physical boundaries could serve as model boundaries wherever possible. **Figure 6** shows pre-closure site topography based on ground survey and LiDAR data. The pre-construction topographic map (**Figure 4**) was used to develop the model layering for AP-1, Lake Juliette, and the Recycle Pond.

Ground surface was compared to modeled head levels by using AP-1 bathymetry data (topography below the water level of AP-1) and LiDAR data were combined as shown in **Figure 6**. The Ocmulgee River is northeast of the figure, with Berry Creek extending from the centrally located AP-1 to the east and joining an unnamed tributary shortly before the tributary enters the Ocmulgee River floodplain (see **Figure 3**). The model domain was chosen based on the assumption that the Ocmulgee River, the unnamed tributary to the north, and Lake Juliette to the south would be hydraulic boundaries. Topographic ridgetops along surface water divides were assumed to be groundwater basin divides and were modeled as inactive barriers.

The model grid is presented in **Figure 7**. The grid spacing varies between 225 ft by 222 ft in the coarsest areas of the model grid, to about 25 ft by 25 ft in areas of interest around the AP-1 outline. At the scale shown on **Figure 7,** the 25 ft by 25 ft grid is not distinguishable. **Figure 8** shows the grid at a finer scale and the individual 25 ft by 25 ft grid cells are visible. The fine grid extends around the diked area of AP-1 and to the west to provide the highest resolution in this area. The model contains 432 rows and 421 columns, with 727,488 cells. A total of 517,643 of those cells are active, covering an area of 5,937 acres.

3.3 Model Layering

The pre-closure model was based on the CSM described in **Section 2.3** and designed to include CCR and dike material overlying the three lithologic units (saprolite, PWR, and FBR). The upper, unsaturated unconsolidated soils and the lower CBR are not included as layers in the model. The lithologic layers, in addition to CCR and dike material, were assigned to the model layers as follows:

- Layer 1: The CCR and AP-1 dike material. AP-1 dikes and CCR have varying thickness on top of the underlying saprolitic material and were only included in model Layer 1. The thickness of Layer 1 within AP-1 is the CCR thickness. In areas within the model domain where CCR and dike material do not exist, Layer 1 is reduced to thicknesses varying from 1 ft to 5 ft thick to represent unconsolidated soils. Areas outside of the AP-1 boundary are inactive cells, with in exception of the knob area. The knob area is outside of AP-1 and does not contain CCR materials; however, since the knob area is a peninsula into AP-1, Layer 1 in the knob area is set as active. All Layer 1 cells in the knob area are 1-ft thick.

- Layer 2: Saprolite. The saprolitic material consists of partially to completely weathered rock resulting in groundwater flow dominated by primary porosity. The structural geologic fabric of the saprolite contains moderately to steeply plunging foliations generally trending northeast, which may create preferential groundwater flow pathways. Layer 2 extends across the entire model domain. The thickness of Layer 2 is variable across the site with an average thickness of 46 ft.

- Layer 3: PWR. The regolith is less weathered with depth resulting in the PWR being dominated by groundwater flow through primary and secondary porosity. This layer has a variable thickness based on the subsurface records and averages 20 ft thick.

- Layer 4: FBR. The FBR underlies the PWR and shows slight weathering, having secondary porosity. CBR lies beneath the FBR and contains little or no groundwater. Although variable across the site, the thickness of Layer 4 was assumed to be uniform at 30 ft for the groundwater model.

Data used to develop the model layers included monitoring well, piezometers, and borehole lithology (**Tables 2** and **3**). The direct input of lithology (top and bottom elevation per model layer per boring) into the groundwater model is included as **Table 6**. Hydraulic properties of the layers were based on the dominant material in that depth interval.

As discussed in **Section 2** above, the site subsurface records were assembled and the elevations of ground surface, and model layers were tabulated. Defining the top and bottom elevations of the model layers required interpolation between data points and extrapolation beyond where subsurface data exists.

The bottom of the CCR material (Layer 1inside AP-1) was estimated from the boring data. Where borings did not encounter the bottom of CCR, the preconstruction topography was used to estimate the bottom of the CCR material. The bottom elevation of the dike material was determined from construction drawings which showed the top of saprolite upon which AP-1 dikes were constructed.

The top and bottom elevations of the geologic units were tabulated along with boring coordinates. A natural neighbor interpolation method in Surfer was used to interpolate between these points. Because there is a thick regolith at the site, there are more borings that penetrated the bottom of the saprolite layer than the deeper subsurface layers, thus, the bottom of the saprolite is well-defined across the model.

In areas with limited subsurface records, pre-construction ground surface elevations (see **Figure 4**) along with the average thicknesses of the saprolite and PWR were used to define the thicknesses of the model layers. Locations of subsurface record data that were used to define the top of PWR are shown on **Figure 9.** The top of PWR as it appears in the model is shown on **Figure 10**. As shown in this figure, the top elevation of PWR is variable, but less than the ground surface shown on **Figure 3**. In a similar process to calculate the top of the PWR elevation, the top of the FBR was developed for the model from subsurface data and ground surface elevations. Locations of subsurface record data used to define the top of FBR are shown in **Figure 11**, while the resulting FBR top surface in the model is shown in **Figure 12**.

The layering information can also be presented in a vertical cross-sectional view. **Figure 13** shows two cross-section lines through AP-1, while the cross-sections are shown on **Figure 14**. Cross-section A-A' extends from the high topographic area to the west of AP-1 (the knob area) eastward towards Berry Creek. The cross-section intersects the Berry Creek valley twice. Cross-section B-B' is a south to north section through both the south and north dikes of AP-1, to the unnamed tributary located north of the site. Note that the ground surface is more irregular than the top of PWR and FBR, but they follow the same general trends. Layers 1, 2 (saprolite), and 3 (PWR) have variable thicknesses, while Layer 4 (FBR) is a constant 30 ft thick as noted above.

3.4 Model Boundary Conditions

The pre-closure model boundary is shown on **Figure 15** with a detailed view in the AP-1 area shown on **Figure 16**. The boundaries for AP-1, Ocmulgee River, Berry Creek, the unnamed northern tributary, and the Recycle Pond were simulated in the model using the River package. The boundary condition in the River package is used to simulate the influence of a water body on the flow of groundwater. Lake Juliette is represented with Constant Head cells. In AP-1, submerged CCR thickness is implemented at the thickness of Layer 1, with submerged areas outside of the CCR extents represented by thin cells ranging from 1 ft to 5 ft thick. The flow channels around the perimeter of AP-1 have River Cell settings representing local conditions, not that of the CCR. River cells in AP-1 are set to a riverbed thickness of 0.1 ft. A block diagram of the AP-1 River cells is shown on **Figure 16**.

Stage elevations of the major surface water bodies are posted on **Figure 15.** The active River cells in Layer 1 are simulating AP-1. The drainage features outside of AP-1 are set in Layer 2, saprolite. Surface water body stages were measured in June 2016, the same month that the groundwater elevation target calibration data set was measured. The exception is the I-Pond, which is based on the spillway elevation. The stage for the River cells for Berry Creek and the unnamed northern tributary were based on ground surface elevations from the East Juliette USGS Topographic map, or from LiDAR data. Stage elevations varied from downstream to upstream. The Ocmulgee River was set at a constant stage of 350 ft NAVD88 and was not varied along its length.

Smaller drainage features that would not be contributing to groundwater were simulated as Drain cells (see **Figures 15** and **16)**. Drain cells were used to simulate discharge from the small drainages leading to the unnamed northern tributary (see **Figure 3**). Drain cells were also used to simulate the floodplain along the Ocmulgee River, the lower reaches of Berry Creek, and the area of ponded water located south of the I-Pond. Areas that appeared to have groundwater discharge in the plant area were identified and water elevations were surveyed so they could be added to the model. Topography was used as a guide between the surveyed points to connect the drains. Drain cells function as head dependent boundaries. Drain cells are similar to River cells except flow can only leave the model through a Drain cell, such as, a losing stream.

3.4.1 Model Recharge

Recharge is defined as a flux across the surface of the water table and is a model boundary condition. Recharge across the model domain is shown on **Figure 17**. An initial background (basin wide average) recharge value was the initial recharge setting at the start of the calibration process. The resulting recharge values between 10.15% to 14.58 % of the annual precipitation are the recharge settings in the pre-closure model. This includes 1.37 x 10^{-3} ft/day (Recharge Zone 9) based on an average annual precipitation of 45.68 inches per year observed at Macon, Georgia, as listed in **Table 8**. This percentage is similar to the predicted rates from groundwater basin studies conducted in the southeastern Piedmont (Daniel and Sharpless, 1983). Recharge zones 7 and 10 are the flat-lying exposed CCR surfaces and have values of 1.52 x 10^{-3} ft/day and 1.06 x 10^{-3} ft/day, respectively. Two recharge zones in the CCR delta were used to more closely match water levels at B-103B and B-102B. Recharge was set to 0 ft/day in areas of the plant where paved surfaces or building roofs would be anticipated to prevent recharge, in the coal pile area, and at the PAC Ash and Gypsum Landfills. Surface waters were also given a recharge value of 0 ft/day as these are represented by River cells with constant heads.

3.4.2 Model Evapotranspiration

ET rates are based on local pan evaporation of 57 inches per year, or 0.013 ft/day (University of Georgia, 2020). Three values were used to represent ET: paved and surface water areas (0 ft/day), exposed CCR (0.001 ft/day), and background area with tree cover (0.0077 ft/day). An extinction depth, where ET is linearly reduced to 0, is set to 4 ft below ground surface. The ET map is shown on **Figure 18**.

3.4.3 Recovery Sumps

AP-1 includes four "bolster" areas with seepage recovery sumps. The seepage recovery sumps are located along the northeast, east, and southeast perimeters of AP-1. The sumps collect seepage water from the seepage collection system built into the dikes and the seepage water is pumped to AP-1. The recovery sumps are gauged monthly, and results are reported to the Georgia Safe Dam Program in accordance with the Category 1 Permit No. 102-032-04236-A-01. To implicitly model these features, Drain cells were placed along the location of the seepage collection system and used to simulate removal of seepage water. The Drain cell settings, primarily head elevation and conductivity, were adjusted to optimize estimated seepage flow. The locations of the seepage recovery sumps are shown on **Figure 19**.

3.5 Hydraulic Conductivity

Slug testing on select site wells/piezometers revealed hydrogeologic units ranging below 0.02 ft/day to 17 ft/day. The geometric mean is 1.1 ft/day, and the average is 2.3 ft/day. **Table B** presents a summary of hydraulic conductivity values for site geologic layers. Only the wells/piezometers with the highest initial hydraulic conductivity value were retested, so the averages presented herein may still be biased high. Laboratory measurements of vertical hydraulic conductivity of saprolitic material ranged from 8.0 x 10^{-6} ft/day to 1.16 ft/day. Hydraulic conductivity data were tabulated along with the screened interval geologic unit of the wells/piezometers in **Table 4**.

Table B. Hydraulic Conductivity Summary for Site Geologic Layers

Testing Interval	Minimum K (ft/day)	Maximum K (ft/day)	Mean K (ft/day)	Average K (ft/day)
Saprolite (38 locations)	0.05	17	1.0	2.7
PWR (12 locations)	0.28	9.8	1.4	2.3
Bedrock (8 locations)	0.02	7.0	0.88	1.9

Source: AECOM, GPC, and SCS

CCR was characterized by the analysis of cone penetration test (CPT) sounding pore pressure dissipation test rates and laboratory testing. The 21 CPT pore pressure dissipation tests provided horizontal hydraulic conductivity values while ten flexible wall permeability tests provided vertical hydraulic conductivity values. The pre-closure model input hydraulic conductivity values are summarized in **Table 8**. The mean values for the horizontal and vertical hydraulic conductivity values were 0.38 ft/day and 0.35 ft/day, respectively. These data suggest little vertical anisotropy. The average of the vertical and horizontal hydraulic conductivity was 0.37 ft/day. A slightly higher horizontal hydraulic conductivity was used in the calibration of the model based on typical CCR hydraulic conductivity values. Hydraulic conductivity values and the number of K-zones in each model layer for the groundwater model were adjusted during the calibration process after boundary and layer modifications discussed in **Section 4.2.**

3.6 Model Calibration

During model calibration, the stage of river boundaries was adjusted slightly to match the observed water levels near some of the creeks or tributaries. River cell stages based on measured values (AP-1, Recycle Pond, Lake Juliette, and the I-Pond) were not varied during calibration. Conductance terms were also adjusted in some River cells simulating creeks, especially to the east of AP-1, during model calibration.

The simulated potentiometric surfaces for the calibrated flow model (pre-closure model) are shown on **Figures 20, 21**, **22**, and **23** for the model Layers 1, 2, 3, and 4, respectively. **Figures 21, 22**, and **23** also show the observed June 2016 values for comparison. The residuals (difference between observed and simulated heads) are also posted on these figures. An important factor in the calibration is that the simulated contours in the model are consistent with the contours associated with the observed values.

Figure 20 shows the simulated potentiometric surface contours for Layer 1 of the pre-closure model, which represents the CCR, dike material, and knob area. The inactive Layer 1 is indicated by the gray shading. There are two wells/piezometers screened in model Layer 1**,** which are an insufficient number to develop a separate observed head contour map. The residual values for these two wells/piezometers ranged from 1.02 ft to 1.06 ft, and closely compares to the observed June 2016 water elevations.

Figure 21 shows simulated and observed potentiometric surface contours for Layer 2 of the pre-closure model, which represents the saprolite. The model-predicted heads ranged from -6.98 ft to 3.88 ft difference from the observed heads. There are portions of the simulated potentiometric surface in the saprolite where the water surface occurs in the underlying PWR. This may be caused by a thinner saprolite in the area or the occurrence of PWR at higher elevations which intercept the water surface.

Figure 22 shows simulated and observed potentiometric surface contours for Layer 3 of the pre-closure model, which represents the PWR. The flow directions and heads generally match along Berry Creek. The largest difference between simulated and observed June 2016 potentiometric elevations is to the north of the PAC Ash Landfill with simulated potentiometric surface elevations up to 6.51 ft below the June 2016 potentiometric surface elevations. The model-predicted heads ranged from -3.94 ft to 6.51 ft difference from the observed heads.

Figure 23 shows simulated and observed potentiometric surface contours for Layer 4, which represents the FBR. There are limited observation wells/piezometers in this layer, hence limited contours. The flow directions and heads generally match along Berry Creek. The largest difference between simulated and observed June 2016 potentiometric surface elevations is to the west/southwest, between AP-1 and the Recycle Pond, with the simulated potentiometric surface elevation 6.35 ft lower than the June 2016 potentiometric surface elevation. The model-predicted heads ranged from -7.32 ft to 4.38 ft difference from the observed heads.

Figure 24 shows graphs of observed versus simulated potentiometric surface head elevations and the difference between the June 2016 observed and simulated model elevation heads. Simulated and observed heads fall close to the straight line with a 1:1 slope, indicating a good “fit”. The observed heads in feet versus the residual difference between the observed and simulated heads in feet graph shows a range of +/- 4 ft at the majority of the locations for the simulated pre-closure model.

Table 10 summarizes the model calibration statistics and compares the simulated model heads to the observed June 2016 heads and calculates a residual or difference between the observed and simulated heads for the whole model and layer by layer.

As a general rule, the target absolute residual mean should be within 10% of the range of heads for a good statistical calibration. For the whole model, the range in values for the calibrated model is 149.47 ft with an absolute residual mean of 1.85 ft, or 1.24%. The statistics for the four individual model layers show that the 10% criteria are met for model Layers 2, 3, and 4. Layer 1 has only two wells/piezometers, and thus statistical methods are not reliable with the limited dataset. The residual differences between the modeled and observed June 2016 heads for the two Layer 1 wells/piezometers fall in the range for wells/piezometers in Layers 2, 3, and 4, thus the pre-closure model meets the metric for a good numerical calibration.

The flow model mass balance is 0.001% between in flow and out flow in the model, which is considered acceptable. Model Layer 2 has the largest flux primarily due to recharge. Layers 3 and 4 have progressively less flux, which is expected.

The hydraulic conductivity distributions from the calibrated pre-closure model are shown in **Figures 25** through **28** for each of the model Layers 1 through 4, respectively. The range of horizontal to vertical hydraulic ratios for the 39 K-zones is between 1:1 and 50:1 with a median value of 5:1. **Table 9** summarizes the hydraulic conductivity ratios. The background hydraulic conductivity of 0.38 ft/day in Layer 2 is within the range of observed values as shown in **Table 9**.

The zones of hydraulic conductivity for Layer 1 were based on site maps, as shown on **Figure 25**. For undisturbed material, the zones of hydraulic conductivity were based on a combination of slug test results, changes in observed head contour lines, and matching numerical head calibration targets at individual wells/piezometers. The results from the slug test data were spatially variable. To raise head levels in the model generally involves lowering hydraulic conductivity values. Matching observed head levels was given greater weight than matching the slug test values because of the variations in the slug test results. The east dike was divided into three hydraulic conductivity zones to better match nearby potentiometric head levels. Areas representing surficial soils where no CCR is present were set to 17 ft/day.

Figure 26 shows the calibrated hydraulic conductivity distribution for saprolite, Layer 2, in the pre-closure model. The majority of hydraulic conductivity data was obtained from wells/piezometers screened in Layer 2; thus, the hydraulic conductivity zones are more numerous in this layer.

Figure 27 shows the calibrated hydraulic conductivity distribution for PWR, Layer 3 in the pre-closure model. The background conductivity value of 0.33 ft/day is less than the geometric mean of 1.5 ft/day, but substantial areas of the model have values of 4.0 ft/day, 1.6 ft/day, and 0.4 ft/day. Hydraulic conductivity values in the PWR range from 0.19 ft/day to 4.0 ft/day, which is within the range of reported slug test values (see ranges in **Table 7**). Hydraulic conductivity values from slug tests are higher in the wells/piezometers located along the northern portion of AP-1; however, these wells/piezometers are nearly in a straight line, providing little guidance on varying the conductivity values spatially.

Figure 28 shows the calibrated hydraulic conductivity distribution for FBR, Layer 4, in the pre-closure model. Hydraulic conductivity ranges from 0.245 ft/day to 1.60 ft/day, while the range of slug tests was from 0.02 ft/day to 7 ft/day. The background value of 0.49 ft/day is close to the geometric mean of 0.88 ft/day.

3.6.1 PEST Analysis

The software PEST was utilized in conjunction with Groundwater Vistas for the purpose of optimizing model calibration based on the zonal setup of hydraulic conductivity and recharge. PEST is a software code included in Groundwater Vistas which uses regularized inversion for calibrating highly parameterized groundwater models (Watermark Numerical Computing, 2016).

The auto-sensitivity tool in Groundwater Vistas was used to identify parameters within the exiting zonal setup, which had the highest sensitivity and potential to improve model calibration. Five horizontal hydraulic conductivity zones (7, 28, 13, 24, and 1) and one recharge zone (9) were identified as calibration parameters for PEST. Vertical anisotropy ratio was held constant for each zone based on initial manual calibration. Minimum and maximum values for hydraulic conductivity were defined by the range of field data presented in **Table 8** for each hydrostratigraphic unit. Recharge was varied between 5% and 24% of annual average precipitation.

3.6.2 Auto Sensitivity Analysis

The model sensitivity analyses were conducted for each of the 39 hydraulic conductivity zones (see **Figures 25** through **30**, the drain reach conductance, river reach conductance, the three recharge zones, and the three evapotranspiration zones with a summary of the results shown in **Table 11**. Residual Sum of Squares (RSS) values for the minimum and maximum simulations with the overall range of values are provided.

For the analysis, the model was run with a single value of either K_h, K_v drain conductance, river conductance, recharge, and evapotranspiration multiplied by a set value (varying between 0.33 ft^2 and 3 ft^2). These simulations were repeated for each model zone with all applicable multipliers. The sensitivity analysis indicates that in the model the Kh is more sensitive than the Kv. Changes to Drain and River cell conductance demonstrated minimal sensitivity with respect to RSS.

To further assess the sensitivity of the model parameters, the difference between the maximum and minimum RSS values were grouped by the magnitude of the RSS value. The calibration RSS value (482.12 ft2) is considered the reference value for this analysis. Four sensitivity groupings were used: slight, moderate, high, and very high. Slight sensitivity was assigned to RSS values ranging between 0% and 5% of the base RSS value; moderate was assigned to RSS values ranging between 5% and 22% of the base RSS value; high was assigned to RSS values ranging between 22% and 50% of the base RSS value; and very high was assigned to RSS values greater than 50% of the base RSS value. The sensitivity group for each K-zone is shown at the bottom of each K-zone results column. The sensitivity rankings indicate that the model K-zones are more sensitive horizontally than vertically with most of the RSS range resulting in degraded model calibration.

The sensitivity analyses for the three recharge and two evapotranspiration zones (see **Figures 17** and **18**) indicate that the current recharge value (Recharge zone 9) for most of the model domain has the best RSS value and that the model is highly sensitive to adjustments in recharge magnitude. The recharge setting across the CCR (Recharge zone 7) is close to the optimal setting and is less sensitive than Recharge zone 9; however, it does have a high sensitivity ranking. The two evapotranspiration zones were found to be at near optimal values and had sensitivity ratings of slight.

4 SIMULATED POST-CLOSURE MODELING

4.1 Anticipated AP-1 Closure Design

The anticipated closure design for AP-1 entails adding an earthen berm (proposed north berm) as described in **Section 1** and shown in **Figure 2**. The area north of the proposed north berm is referred to as the CCR removal area. The CCR removal area will be regraded with gentle slopes to enhance surface water flow. The consolidated CCR contained by the dikes, knob area and the proposed north berm will be graded and capped in the closure-in-place footprint. The cap for the closure-in-place footprint will be extended to cover the knob area.

The knob area is an approximate 54-acre topographic high and is currently providing recharge upgradient of AP-1. The knob area, which is shown in **Figure 2** (as well as many of the figures), is essentially a peninsula, surrounded on three sides by AP-1. As part of the closure design, the knob area will be regraded. The simulated post-closure modeling revealed that reducing precipitation/recharge via the upgradient knob area reduces the amount of lateral flow through the closed AP-1. The knob area is outside the AP-1 footprint and does not contain CCR.

The pre-closure flow model was modified to simulate the post-closure based on the anticipated closure design for AP-1 by the following edits to the MODFLOW model:

- River cells covering the open water portion of AP-1 to establish the 495 ft NAVD88 water elevation were removed;

1. River cells used to simulate water flow in channels across and around the CCR were removed;

- The capped closure-in-place footprint and knob area were set to no recharge and no ET;
- The CCR removal area was set to the background recharge and ET rates;
- Layer 1 was modified to reflect the CCR/Dikes in the closure design;
- The hydraulic conductivity was modified to 0.0024 ft/day in Layer 1 to reflect the proposed north berm;

  The active cells in Layer 1 in the northern portion of the AP-1 Boundary were removed. This area was modified to reflect the anticipated closure design surface drainage system;
- The knob area was regraded, and the active cells were set to no recharge and no ET to reflect the capped condition. Hydraulic conductivity associate with the knob was not changed;
- Hydraulic conductivity of the CCR was lowered slightly, representing consolidation and compaction work to be completed during closure, lowering the value from the pre-closure model. The pre-closure model utilized two zones to represent the CCR, one with 1.3 ft/day and the other with 4.1 ft/day. The post-closure model used one zone with a value of 1.3 ft/day; and
- Drain cells were added along now exposed valleys and side wall drainages in the northern portion of former AP-1. These Drain cells are in Layer 2.

Cross-sections of the post-closure model setup are shown on **Figure 29**. The post-closure layout is shown in **Figure 30**. The recharge zonation was also revised to represent the anticipated AP-1 closure design, such as no recharge across the capped area, as shown in **Figure 31**. ET values for post-closure are shown in **Figure 32**. Following these structural changes to the model, the steady-state simulation was run, and the results were compared to pre-closure results. The post-closure predicted potentiometric surface contours for the saprolite, Layer 2, are shown in **Figure 33**. The simulated pre- and post-closure potentiometric heads are shown in **Figure 34** for comparison. Based on the post-closure modeling, the simulated potentiometric heads were reduced significantly compared to the pre-closure model and are projected to decrease by as much as 65 to 70 ft.

On the topographic highs at the north and northwestern sides of the capped area, recharge water is captured by the surface drainage features north of the north berm and directed away from the closure-in-place footprint.

Inside the capped closure-in-place area of AP-1 shows lower potentiometric heads. There is a gentler gradient by the east dike.

To the south of the capped AP-1 area, simulated potentiometric surface heads remain consistent with pre-closure conditions. With lower heads in the capped AP-1 area, and similar heads to the south of the closure-in-place footprint, the lateral flow to the south at AP-1 will be minimized compared to pre-closure conditions with primarily eastern flow in the vicinity of AP-1.

Directly to the east of the capped AP-1 area, simulated post-closure potentiometric surface and gradients are shown to decrease by the east dike. As groundwater travels further eastward, the hydraulic gradient in the simulated post-closure model approaches pre-closure potentiometric head levels and groundwater flow direction remains the same as pre-closure conditions.

5 MODEL ASSUMPTIONS/UNCERTAINTIESMODEL ASSUMPTIONS

5.1 Model Assumptions

Representing a complex hydrogeological system with a numerical model involved many assumptions and simplifications made during model development and calibration phases.

The groundwater model was designed with the goal of simulating the pre-closure potentiometric heads in AP-1 and vicinity and providing a model for simulating potentiometric heads during post-closure conditions. An attempt to use the model for other purposes may yield unsatisfactory results.

Some of the information in this report and associated figures and conclusions are based on information provided by others either for this study, or previous studies. AECOM has assumed that this information is correct and valid.

The information in this report and supporting analyses are based on AECOM's current understanding of site procedures and the proposed closure design at Plant Scherer and for AP-1. The work on this study has been carried out in accordance with the standards of practice followed by the geology and engineering professions at the time of and in the location of this work. In the event that any conclusions or recommendations based upon the data obtained in this report are made by others, such conclusions or recommendations are the responsibility of others. Changes in site procedures or the proposed closure design may alter the findings in this report, until AECOM has had the opportunity to review the changes and, if necessary, modify our findings accordingly.

5.2 Model Uncertainties

There are several uncertainties associated with groundwater flow models in general. The following identifies common uncertainties inherent in groundwater flow models:

- Groundwater flow systems are generally not in steady state because of the changing precipitation, evapotranspiration, and change in storage of aquifer systems; however, a steady state assumption is reasonable in this scenario given that the goal of the simulations is to predict the long-term behavior.
- AP-1 is maintained at approximately 495 ft NAVD88 in pre-closure conditions which could obscure natural hydraulic features now submerged that would not be implemented in the post-closure steady-state model simulations.
- Groundwater flow in FBR is simulated as an equivalent porous media, as opposed to attempting to simulate groundwater flow through discrete fractures, which may bias the results.
- The bottom of the FBR in the Plant Scherer AP-1 model does not have a clear physical basis, as the subsurface records indicate many fractures to the bottom of exploration.
- Simplification of site conditions to four model layers is a necessary constraint on the model.

6 SUMMARY

This report's purpose is to provide details regarding the model development and groundwater modeling completed by AECOM for the planned Plant Scherer AP-1 closure, which will include consolidating the in-place CCR to a reduced approximately 300-acre closure-in-place footprint, removing CCR from the remaining approximately 250 acres, grading the knob area, and constructing a final cover system (cap) over the consolidated CCR and the knob area.

The hydrogeology at Plant Scherer is represented by an unconfined, uppermost aquifer, which overlies the competent bedrock and consists of residual soils, saprolite, PWR, and FBR. Residual soils above groundwater consist of sandy silt, silty sand, sandy clay, and silty clay. Saprolite consists of partially to completely decomposed rock that gradually grades into the PWR, which has relict rock structures, such as foliation and layering. Groundwater flow occurs throughout the inter-connected saprolite, PWR, and FBR.

A steady-state, numerical groundwater flow model was developed based on the data review, that was then calibrated to observed site conditions in June 2016 and referred to as the pre-closure simulated groundwater flow model. The pre-closure simulated groundwater flow model was constructed for the site using parameters that fall within the expected range of values, or that are based on site-specific measured values. The model met industry accepted statistical standards for a numerical calibration. Water elevations generally matched the model domain and the potentiometric surface maps developed for each hydrogeologic unit, although heads did not match well in a limited area south of AP-1. Model uncertainties like this, and others described for the Plant Scherer AP-1 model are minor relative to the entire model domain and are common in groundwater modeling.

The pre-closure flow model was modified to simulate the post-closure conditions based on the anticipated closure design for AP-1. Removing free water from AP-1 will significantly reduce hydraulic gradients at the site according to the post-closure modeling and capping of the knob area was incorporated into the AP-1 closure as a further measure to control and minimize upgradient recharge.

Based on the simulated post-closure model, the hydraulic gradients in the consolidated, closed, and capped AP-1 will change significantly compared to the pre-closure conditions once free water is removed from AP-1 and the planned closure is implemented. On the hills north of the planned capped footprint, recharge water (non-contact, stormwater run-on) will travel downslope and be conveyed to the east by the engineered drainage features located in the area north of the north berm. Inside the capped AP-1 footprint, infiltration will be controlled and minimized by the closure cover system resulting in greatly reduced potentiometric surface heads. Upgradient recharge will be reduced by grading and capping the knob area. The simulated post-closure modeling shows substantially lower hydraulic gradients and reduced potentiometric surface heads in the consolidated, closed, and capped AP-1. Modeled groundwater gradients directly east of AP-1 are gentler during post-closure and groundwater flow direction will be similar to pre-closure conditions further eastward.

The most-favorable outcome of the groundwater modeling is the substantial reduction of the potentiometric surface that will result from the AP-1 closure design, which is benefited by controlling and minimizing recharge within the capped footprint and from the upgradient knob area. Reduced hydraulic gradients across the consolidated, closed, and capped AP-1 area and potentially gentler eastern gradients indicated by the post-closure modeling will result in significantly reduced lateral flow in the vicinity of AP-1 post-closure.

7 REFERENCES

New Georgia Encyclopedia (http://www.georgiaencyclopedia.org/articles/science-medicine/piedmont-geologic-province)

United States Geological Survey (USGS) (https://mrdata.usgs.gov/sgmc/ga.html)

WSP, 2024. Hydrogeologic Assessment Report, Plant Scherer Ash Pond 1 (AP-1). Rev05. September 2024.

Daniel, Charles C., III and N. Bonar Sharpless, CAPE FEAR RIVER BASIN STUDY, North Carolina Department of Natural Resources and Community Development and U.S. Water Resources Council, 1983.

Environmental Simulations, Inc., 2014. Guide to Using Groundwater Vistas Version 7. Environmental Simulations, Inc., Reinholds, PA, 17569, 2011.

Duffield, G.M., 2007. *AQTESOLV for Windows Version 4.5 User's Guide*, HydroSOLVE, Inc., Reston, VA.

McDonald, M.G., and Harbaugh, A.W., 1988. A modular three-dimensional finite-difference ground-water flow model: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 6, Chap. A1, 586 p.

University of Georgia., 2020. Evapotranspiration and evaporation data for Georgia. Climate and Agriculture in the Southeast. https://site.extension.uga.edu/climate/2016/07/evapotranspiration-and-evaporation-data-for-georgia/ Accessed on April 20, 2020.

USGS, 2005. Modflow-2005, the U.S. Geological Survey Modular Ground-Water Model – User Guide to Modularization Concepts and the Ground-Water Flow Process. USGS Open-File Report 00-92, 2000.

https://www.usgs.gov/software/modflow-nwt-a-newton-formulation-modflow-2005

Watermark Numerical Computing., 2016. PEST Model-Independent Parameter Estimation User Manual. 6th Edition.

TABLES

Table 1
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Well ID	Well Previously Named	Easting	Northing	TOC Elevation (ft msl)	Ground Elevation (ft msl)	Well Diameter	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Total Well Depth (ft bgs)	Model Layer Description for Screened Interval	Model Layer Number for Screened Interval	Geologic Unit Screened (Description from Boring Log)	Date Installed	Drilling Method
SGWA-1	APA-1/PZ-8S	2399899.287	1119232.658	546.81	543.97	2" PVC	40.5	50.5	50.9	SAP	Layer 2	Saprolite	2/11/2015	HSA/HQ Rock Core
SGWA-2	APA-1I/PZ-8I	2399907.288	1119237.111	546.81	543.79	2" PVC	85.4	95.4	95.8	PWR	Layer 3	Gneiss (highly to completely weathered)	2/17/2015	HSA/HQ Rock Core
SGWA-3	APA-2	2399295.720	1120224.560	545.65	542.47	6" PVC	40	50	50	SAP	Layer 2	Saprolite	11/18/2015	4-in Sonic
SGWA-4	APA-3	2401124.350	1121478.042	547.27	544.25	6" PVC	50.5	60.5	60.5	SAP	Layer 2	Saprolite	11/17/2015	4-in Sonic
SGWA-5	APA-4	2397426.720	1118087.173	508.11	505.32	6" PVC	20.2	30.2	30.2	SAP	Layer 2	Saprolite	11/18/2015	4-in Sonic
SGWC-6	APC-1	2401979.450	1122168.292	510.57	507.94	6" PVC	15	25	25	SAP	Layer 2	Saprolite	11/12/2015	4-in Sonic
SGWC-7	APC-2	2402259.670	1122669.570	506.05	503.32	6" PVC	25	35	35	PWR	Layer 3	Biotite Gneiss	11/11/2015	4-in Sonic
SGWC-8	APC-3	2402979.660	1122866.662	513.93	511.05	6" PVC	30	40	40	FBR	Layer 4	Partially Weathered Rock/Biotite Gneiss	11/10/2015	4-in Sonic
SGWC-9	APC-4	2403455.820	1122635.284	510.37	507.61	6" PVC	25	35	35	SAP	Layer 2	Saprolite	11/6/2015	4-in Sonic
SGWC-10	APC-5	2404047.170	1121896.649	509.22	507.61	6" PVC	20	30	30	SAP	Layer 2	Saprolite	11/5/2015	4-in Sonic
SGWC-11	APC-6	2404332.790	1121542.388	511.28	508.6	6" PVC	30	40	40	SAP	Layer 2	Saprolite	10/28/2015	4-in Sonic
SGWC-12	APC-7	2405009.680	1121576.067	500.29	497.35	6" PVC	37	47	47	SAP	Layer 2	Saprolite	10/30/2015	4-in Sonic
SGWC-13	APC-8	2405760.640	1121274.076	482.58	480.05	6" PVC	25	35	35	SAP	Layer 2	Saprolite	11/4/2015	4-in Sonic
SGWC-14	APC-9/PZ-16S	2406329.205	1120965.721	476.48	476.31	2" PVC	24.8	34.8	35.3	SAP	Layer 2	Saprolite	2/24/2015	HSA
SGWC-15	APC-10/PZ-17S	2407092.841	1120191.238	483.27	480.04	2" PVC	34.8	44.8	45.2	SAP	Layer 2	Saprolite	2/26/2015	HSA
SGWC-16	APC-11/PZ-18S	2407154.726	1119221.306	460.03	456.79	2" PVC	28.8	38.8	39.2	SAP	Layer 2	Saprolite	3/2/2015	HSA
SGWC-17	APC-12/PZ-20S	2407266.725	1118309.038	417.96	414.73	2" PVC	14.1	24.1	24.5	SAP	Layer 2	Saprolite	3/11/2015	HSA
SGWC-18	APC-13/PZ-22S	2406930.957	1116946.848	513.18	510.17	2" PVC	34.1	44.1	44.5	SAP	Layer 2	Saprolite	3/17/2015	HSA
SGWC-19	APC-14/PZ-23S	2406096.077	1116024.669	478.67	475.71	2" PVC	24.2	34.2	34.6	SAP	Layer 2	Saprolite	3/18/2015	HSA
SGWC-20	APC-15	2405307.580	1116020.766	504.44	501.12	6" PVC	15	25	25	SAP	Layer 2	Saprolite	11/19/2015	4-in Sonic
SGWC-21	APC-16/PZ-1S	2404197.376	1115410.841	487.54	484.61	2" PVC	14.5	15.5	15.9	SAP	Layer 2	Saprolite	5/6/2015	HSA
SGWC-22	APC-17/PZ-2S	2403002.383	1115540.735	518.07	515.46	2" PVC	36.5	46.5	46.9	SAP	Layer 2	Saprolite	1/22/2015	HSA
SGWC-23	APC-18/PZ-4I	2402131.918	1116694.349	523.07	519.99	2" PVC	39.3	49.3	49.7	PWR	Layer 3	Partially Weathered Rock/Granitic Gneiss (moderately to highly weathered)	2/3/2015	HSA/HQ Rock Core
SGWA-24	APA-5/PZ-7S	2400742.979	1118125.665	503.86	500.75	2" PVC	27.7	37.7	38.1	SAP	Layer 2	Saprolite	2/10/2015	HSA
SGWA-25	APA-6/PZ-9S	2400856.491	1120556.049	526.39	523.08	2" PVC	34.6	44.6	45	SAP	Layer 2	Saprolite	2/18/2015	HSA
PZ-2I		2402991.209	1115545.515	517.61	514.99	2" PVC	73.9	83.9	84.3	FBR	Layer 4	Partially Weathered Rock and Gneiss (slightly to moderately to highly weathered)/Gneiss (slightly to moderately weathered, fractured)	1/27/2015	HSA/HQ Rock Core
PZ-3S		2402532.892	1116085.690	517.29	514.6	NA	39.6	49.6	49.6	SAP	Layer 2	Saprolite	1/28/2015	
PZ-5I		2401817.710	1117484.293	523.24	520.38	2" PVC	36.6	46.6	47	FBR	Layer 4	Bedrock (gneiss, fractured)	2/4/2015	HSA/HQ Rock Core
PZ-6S		2401936.713	1117910.804	531.48	528.93	2" PVC	44.4	54.4	54.8	SAP	Layer 2	Saprolite	2/4/2015	HSA
PZ-9I		2400862.201	1120563.315	527.49	523.25	2" PVC	69.8	79.8	80.2	PWR	Layer 3	Amphibolite (moderately to completely weathered)	2/19/2015	HSA/HQ Rock Core
PZ-10S		2401768.261	1122338.553	516.81	513.85	2" PVC	24.5	34.5	35.9	SAP	Layer 2	Saprolite	2/2/2015	HSA
PZ-11S		2402767.326	1123169.252	529.21	525.88	2" PVC	35.5	45.5	45.9	PWR	Layer 3	Saprolite (very hard, weathered rock fragments)	4/6/2015	HSA
PZ-12S		2403619.041	1122685.579	517.65	514.53	2" PVC	34	44	44.4	SAP	Layer 2	Saprolite	3/31/2015	HSA
PZ-13S		2404228.126	1121956.578	520.21	517.08	2" PVC	34.9	44.9	45.3	SAP	Layer 2	Saprolite	4/1/2015	HSA
PZ-14S		2404820.413	1121852.656	511.86	508.55	2" PVC	34.5	44.5	44.9	SAP	Layer 2	Saprolite	3/26/2015	HSA

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PZ-14I		2404822.284	1121865.436	512.61	509.61	2" PVC	84.8	94.8	95.2	PWR	Layer 3	Gneiss (moderately to highly weathered), Gneiss (more competent, fractured)	3/25/2015	HSA/HQ Rock Core
PZ-15S		2405559.339	1121486.185	499.06	495.95	2" PVC	29.7	39.7	40.1	SAP	Layer 2	Saprolite	4/28/2015	HSA
PZ-17I		2407106.304	1120190.514	483.23	480.18	2" PVC	86.7	96.7	97.3	FBR	Layer 4	Amphibolite (moderately weathered, fractured), Gneiss (slightly weathered, fractured)	2/27/2015	HSA/HQ Rock Core
PZ-19S		2407241.350	1118587.897	417.67	414.66	2" PVC	14.6	24.6	25	SAP	Layer 2	Saprolite	3/4/2015	HSA
PZ-19I		2407251.482	1118589.332	417.48	414.46	2" PVC	61.5	71.5	71.9	PWR	Layer 3	Gneiss (moderately weathered, weak formation)	3/4/2015	HSA/HQ Rock Core
PZ-20I		2407272.337	1118318.135	417.11	414.11	2" PVC	69.2	79.2	79.6	PWR	Layer 3	Amphibolite Gneiss (moderately to highly weathered)	3/10/2015	HSA/HQ Rock Core
PZ-21S		2407007.551	1117638.787	473.42	470.46	2" PVC	13	23	23.4	SAP	Layer 2	Saprolite	3/12/2015	HSA
PZ-25S		2404567.730	1121847.250	527.91	525.47	2" PVC	45	55	55.2	SAP	Layer 2	Elastic Silt	5/25/2016	Rotosonic
PZ-25I		2404573.180	1121836.940	528.09	525.7	2" PVC	115	125	125.2	SAP	Layer 2	Saprolite	5/24/2016	Rotosonic
PZ-26S		2405730.730	1121695.550	491.36	488.88	2" PVC	35	45	45.2	SAP	Layer 2	Silty Sand and Poorly-Graded Sand	6/1/2016	Rotosonic
PZ-27S		2406028.420	1121564.130	475.57	472.96	2" PVC	35	45	45.5	PWR	Layer 3	Partially Weathered Rock	5/26/2016	Rotosonic
PZ-27D		2406021.760	1121559.390	475.18	472.41	2" PVC	104.5	124.5	124.7	FBR	Layer 4	Biotite Gneiss (not weathered, moderately to intensely fractured)	6/17/2016	Rotosonic
PZ-28I		2406375.090	1121393.050	483.91	481.32	2" PVC	59	69	69.2	FBR	Layer 4	Biotite Gneiss (slightly to moderately weathered, intensely fractured)	6/3/2016	Rotosonic
PZ-29S		2406618.220	1121267.680	491.02	488.43	2" PVC	35	45	45.2	PWR	Layer 3	Weathered Biotite gneiss	5/26/2016	Rotosonic
PZ-30I		2407079.440	1121071.970	478.03	475.42	2" PVC	75	85	85.2	PWR	Layer 3	Gneiss (moderately to highly weathered)	6/2/2016	Rotosonic
PZ-31i		2407445.610	1121202.950	466.56	463.8	2" PVC	64	74	74.2	FBR	Layer 4	Gneiss (slightly weathered, fractured)	6/2/2016	Rotosonic
PZ-32S		2407718.240	1121089.770	464.82	462.28	2" PVC	45	55	55.2	PWR	Layer 3	Saprolite/Pulverized Rock	6/1/2016	Rotosonic
PZ-32D		2407697.300	1121089.240	465.18	462.32	2" PVC	96	126	126.2	FBR	Layer 4	Biotite and Granitic Gneiss (not to slightly weathered, slightly to moderately fractured)	6/1/2016	Rotosonic
PZ-33I		2409063.680	1121244.080	469.08	466.25	2" PVC	66	76	76.2	PWR	Layer 3	Weathered Gneiss, Pulverized Rock, and Biotite Gneiss (moderately to highly weathered)	6/8/2016	Rotosonic
PZ-34S		2409289.270	1121329.680	443.37	440.78	2" PVC	35.5	45.5	45.7	PWR	Layer 3	Saprolite and Weathered Biotite Gneiss	6/4/2016	Rotosonic
PZ-35I		2406059.000	1121598.010	474.17	474.53	2" PVC	45	55	55.2	Not in model	Not in model	Well-Graded Sand with Pulverized Rock and Gneiss (slightly to highly weathered)	6/22/2016	Rotosonic
PZ-36S		2407248.005	1120400.372	482.19	479.21	2" PVC	45	55	55	Not in model	Not in model	Saprolite	8/22/2018	Rotosonic
PZ-36I		2407255.930	1120409.990	481.42	478.85	2" PVC	85	95	95.2	FBR	Layer 4	Biotite Gneiss (slightly weathered, fractured)	6/5/2016	Rotosonic
PZ-37I		2408419.620	1121177.670	482.02	479.54	2" PVC	61	71	71.2	Not in model	Not in model	Transition Zone Pulverized Rock and Biotite Gneiss (not to slightly weathered, moderately fractured)	6/2/2016	Rotosonic
PZ-38I		2406354.140	1121475.860	481.96	482.1	2" PVC	64	74	74.2	PWR	Layer 3	Weathered Biotite Gneiss and Biotite Gneiss (pulverized weathered rock)	6/23/2016	Rotosonic
PZ-39S		2407472.377	1120177.256	474.49	471.87	2" PVC	66	76	76	Not in model	Not in model	Saprolite	8/21/2018	Rotosonic
PZ-40I		2406962.700	1116959.586	512.22	509.76	2" PVC	73	83	83	Not in model	Not in model	Biotite Gneiss	8/15/2018	Rotosonic
PZ-41S		2407125.609	1116799.229	491.35	488.44	2" PVC	35	45	45	Not in model	Not in model	Saprolite	8/16/2018	Rotosonic
PZ-42I		2405293.296	1116014.657	502.97	500.38	2" PVC	86	96	96	Not in model	Not in model	Biotite Gneiss	8/21/2018	Rotosonic
PZ-43S		2405509.147	1115598.554	504.00	501.27	2" PVC	40.5	50.5	50.5	Not in model	Not in model	Saprolite	8/17/2018	Rotosonic
PZ-44I		2404331.321	1121515.271	510.19	507.69	2" PVC	104	114	114	Not in model	Not in model	Biotite Gneiss	9/5/2018	Rotosonic
GWC-1		2411556.160	1120077.830	374.75	371.54	2" PVC	24.69	34.69	34.99	SAP	Layer 2	Saprolite	10/28/2009	HSA
GWC-2		2411493.240	1119816.770	380.03	376.91	2" PVC	44.78	54.78	55.08	SAP	Layer 2	Saprolite	10/8/2009	HSA
GWC-3		2411202.800	1119614.010	410.22	407.19	2" PVC	36.4	46.4	46.7	PWR	Layer 3	Silty Sand	10/29/2009	HSA

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GWC-4		2411041.630	1119256.250	411.57	408.31	2" PVC	29.7	39.7	40	Not in model	Not in model	Silty Sand, Clayey Sand, Sand	11/21/2009	HSA
GWC-5		2411025.700	1118897.720	396.50	393.18	2" PVC	20.43	30.43	30.73	Not in model	Not in model	Silt, Silty Sand, Gneiss (weathered)	10/22/2009	HSA/HQ Rock Core
GWC-6		2410872.480	1118575.720	415.70	412.36	2" PVC	34.86	44.86	45.16	Not in model	Not in model	Gneiss (slightly to highly weathered), Schist (highly weathered)	10/21/2009	HSA/HQ Rock Core
GWC-7		2410645.830	1118243.660	418.07	414.29	2" PVC	44.57	54.57	54.87	Not in model	Not in model	Saprolite	10/20/2009	HSA
GWC-8		2410435.830	1117934.460	407.80	404.76	2" PVC	40.18	50.18	50.48	Not in model	Not in model	Sand, Saprolite	10/20/2009	HSA
GWC-9		2410167.440	1117955.520	386.01	383.02	2" PVC	6.79	16.79	17.09	Not in model	Not in model	Sandy Silt, Silty Sand	11/4/2009	HSA
GWC-10		2410018.160	1118306.840	392.68	389.3	2" PVC	21.39	31.39	31.69	Not in model	Not in model	Silty Sand	11/3/2009	HSA
GWC-11		2409778.450	1118649.130	402.19	399.06	2" PVC	21	31	31.3	Not in model	Not in model	Silty Sand	11/3/2009	HSA
GWC-12		2409554.100	1118978.200	412.75	409.54	2" PVC	24.22	34.22	34.52	Not in model	Not in model	Clayey Sand	11/3/2009	HSA
GWC-13		2409390.710	1119338.880	419.58	416.54	2" PVC	29.99	39.99	40.29	Not in model	Not in model	Silty Sand	11/2/2009	HSA
GWC-14		2409111.270	1119655.060	403.41	400.25	2" PVC	14.07	24.07	24.37	Not in model	Not in model	Silty Sand	11/4/2009	HSA
GWA-15		2409282.000	1120009.780	414.82	411.82	2" PVC	16.19	26.19	26.49	Not in model	Not in model	Silt, Silty Sand	11/4/2009	HSA
GWA-16		2409579.590	1120248.790	444.06	440.74	2" PVC	44.2	54.2	54.5	Not in model	Not in model	Saprolite	10/13/2009	HSA
GWA-17		2409946.330	1120211.100	445.63	442.72	2" PVC	33.55	43.55	43.85	Not in model	Not in model	Silty Sand	9/28/2009	HSA
GWC-18		2410261.900	1119998.620	439.64	436.36	2" PVC	46.81	56.81	57.11	Not in model	Not in model	Saprolite	9/29/2009	HSA
GWC-19		2410712.920	1119645.900	429.98	426.12	2" PVC	43.84	53.84	54.14	Not in model	Not in model	Saprolite	10/2/2009	HSA
GWC-20		2411195.260	1119950.630	426.09	422.82	2" PVC	59.13	69.13	69.43	Not in model	Not in model	Silt	10/6/2009	HSA
GWA-21		2409462.770	1120675.770	422.30	419.56	2" PVC	8	18	18	SAP	Layer 2	Weathered Rock	6/29/2010	Sonic
GWA-22		2409473.480	1120962.580	444.23	441.75	2" PVC	30	40	40	PWR	Layer 3	Gneiss	6/29/2010	Sonic
GWC-29		2408717.920	1119875.660	399.39	396.69	2" PVC	14	24	24	SAP	Layer 2	Saprolite	6/28/2010	Sonic
GWA-45		2407889.430	1120669.520	450.89	447.98	2" PVC	23	33	33	SAP	Layer 2	Mottled Clay, Silt, Sand	6/23/2010	Sonic
GWA-46		2408235.720	1120783.750	460.86	458.1	2" PVC	33.5	43.5	43.5	SAP	Layer 2	Mottled Clay, Silt, Sand	6/23/2010	Sonic
GWA-47		2408585.250	1120862.990	465.55	462.81	2" PVC	45	55	55	SAP	Layer 2	Saprolite, Weathered Gneiss	6/22/2010	Sonic
GWA-48		2408939.900	1120953.850	461.47	458.73	2" PVC	60	70	70	FBR	Layer 4	Gneiss	6/22/2010	Sonic
GWA-49		2409288.700	1121030.470	432.61	429.96	2" PVC	27.5	37.5	37.5	SAP	Layer 2	Saprolite	6/21/2010	Sonic
GWC-50		2408955.890	1119917.650	406.92	404.16	2" PVC	24.5	34.5	34.5	PWR	Layer 3	Saprolite, Hard Saprolite	6/28/2010	Sonic
GWC-51		2408437.100	1119835.850	409.89	406.88	2" PVC	16.5	26.5	26.5	SAP	Layer 2	Saprolite	6/28/2010	HSA
GWC-52		2408203.870	1119972.460	416.89	414.14	2" PVC	20	30	30	SAP	Layer 2	Saprolite	6/24/2010	Sonic
GWC-53		2407942.970	1120319.920	435.57	432.93	2" PVC	20	30	30	SAP	Layer 2	Clay, Sand	6/23/2010	Sonic
LPZ-1		2398512.884	1117001.063	553.16	549.84	2" PVC	54	64	64	Not in model	Not in model	Partially Weathered Rock/Biotite Gneiss	11/10/2015	HSA/HQ Rotary
LPZ-2		2398005.522	1119972.986	513.96	510.46	2" PVC	10	20	20	SAP	Layer 2	Sandy Clay/Silty Sand	11/20/2015	HSA/HQ Rotary
LPZ-3		2398656.589	1117884.204	515.11	511.48	2" PVC	25	35	34.1	SAP	Layer 2	Clayey Silt/Saprolite	11/18/2015	HSA/HQ Rotary
LPZ-4		2397083.703	1115963.340	461.06	457.83	2" PVC	18	28	28.5	SAP	Layer 2	Silty Sand/Saprolite	11/19/2015	HSA/HQ Rotary
LPZ-5		2399698.731	1115329.718	524.28	520.97	2" PVC	42.1	52.1	51.7	SAP	Layer 2	Silty Sand (weathered rock)	11/5/2015	HSA/HQ Rotary
B-102A		2,405,054	1,117,122	507.3	504.4	2" PVC	49.7	54.3	60	CCR	Layer 1	CCR (Silt)	4/8/2016	HSA
B-102B		2,405,057	1,117,126	506.6	504.4	2" PVC	15.3	20.3	20.6	CCR	Layer 1	CCR (Silt)	4/8/2016	HSA
B-103A		2,405,595	1,117,590	508.9	505.8	2" PVC	55.8	60	60.3	CCR	Layer 1	CCR (Silt)	4/5/2016	HSA

Table 1
Monitoring Well and Piezometer Construction Details
Groundwater Modeling Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Well Previously Named	Easting	Northing	TOC Elevation (ft msl)	Ground Elevation (ft msl)	Well Diameter	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Total Well Depth (ft bgs)	Model Layer Description for Screened Interval	Model Layer Number for Screened Interval	Geologic Unit Screened (Description from Boring Log)	Date Installed	Drilling Method
B-103B		2,405,594	1,117,596	508.9	505.8	2" PVC	15	20	20	CCR	Layer 1	CCR (Silt)	3/29/2016	HSA
B-104A		2,405,846	1,117,967	507.5	504.2	2" PVC	55	60	60	CCR	Layer 1	CCR (Silt)	3/31/2016	HSA
B-104B		2,405,851	1,117,972	507.2	504.1	2" PVC	15	20	20	CCR	Layer 1	CCR (Sand)	3/31/2016	HSA
AP-1R		2406844.490	1118448.308	508.380	NA	2" PVC	114.4	124.1	124.4	SAP	Layer 2	Saprolite	5/3/2000	NA
AP-2		2406844.247	1118466.944	509.210	NA	NA	NA	NA	NA	Not in model	Not in model	NA	NA	NA
AP-A2A		2406015.430	1116326.17	473.110	NA	NA	NA	NA	NA	Not in model	Not in model	NA	NA	NA
AP-A2		2406017.332	1116326.835	472.820	NA	1" PVC	24	29	29	SAP	Layer 2	Decomposed Rock	5/20/1986	NA
AP-3		2406897.847	1118458.705	495.340	NA	NA	NA	NA	NA	Not in model	Not in model	NA	NA	NA
AP-A3A		2406137.451	1116414.664	481.130	NA	1" PVC	3	8	8	Not in model	Not in model	NA	5/20/1986	NA
APA-3		2406140.776	1116416.122	481.320	NA	1" PVC	22	27	27	SAP	Layer 2	Decomposed Rock	5/20/1986	NA
AP-4		2407038.779	1118463.806	457.540	NA	NA	NA	NA	NA	Not in model	Not in model	NA	NA	NA
AP-5		2407039.246	1118451.359	457.390	NA	NA	NA	NA	NA	Not in model	Not in model	NA	NA	NA
AP-A4A		2406349.895	1116540.949	483.860	NA	1" PVC	8.5	13.5	13.5	Not in model	Not in model	NA	5/12/1986	NA
AP-A4		2406349.675	1116541.17	485.360	NA	1" PVC	35.5	40.5	40.5	SAP	Layer 2	Decomposed Rock	5/13/1986	NA
AP-A5		2405926.811	1116282.42	475.370	472.02	1" PVC	37.0	42.0	42	SAP	Layer 2	Sandy Silt with Rock Fragments	5/21/1986	NA
AP-A5A		2405929.020	1116283.697	475.340	471.9	1" PVC	19.0	24.0	24	Not in model	Not in model	NA	5/21/1986	NA
AP-6		2405851.502	1121166.564	484.230	NA	1" PVC	33.5	38.5	38.5	SAP	Layer 2	Decomposed Rock	4/10/1985	NA
AP-7		2405853.689	1121165.367	483.720	NA	1" PVC	6.5	11.5	11.5	SAP	Layer 2	Decomposed Rock	4/10/1985	NA
AP-8R		2407239.783	1118493.325	413.850	411.4	2" PVC	7.0	11.4	12	SAP	Layer 2	Sand and Gravel	5/9/2000	NA
AP-9R		2407245.201	1118491.264	414.310	411.51	2" PVC	30.1	34.8	35.1	SAP	Layer 2	Sand and Gravel	5/9/2000	NA
AP-10		2405882.537	1116253.005	472.930	470.63	1" PVC	46.0	51.0	51	SAP	Layer 2	Weathered Rock	4/10/1985	NA
AP-11		2405886.985	1116254.145	474.050	471	1" PVC	20.0	25.0	25	PWR	Layer 3	NA	4/12/1985	NA
AP-12		2405793.374	1116223.681	477.170	475.14	1" PVC	38	43	43	SAP	Layer 2	Decomposed Rock	6/3/1986	NA
AP-A12		2405827.369	1116370.212	507.110	NA	1" PVC	74	79	79	SAP	Layer 2		6/3/1986	NA
AP-A12A		2405827.342	1116370.162	507.030	NA	1" PVC	50	55	55	Not in model	Not in model	NA	6/3/1986	NA
AP-13		2405792.231	1116223.511	479.300	475.14	1" PVC	23	28	28	SAP	Layer 2	Decomposed Rock	5/29/1986	NA
AP-14		2405789.221	1116221.073	479.690	476.01	1" PVC	2	12	12	Not in model	Not in model	NA	5/29/1986	NA

Note: Since groundwater elevations and other elevation-based measurements were made using pre-2020 survey data, it makes sense to persist with the pre-2020 datum to avoid confusion throughout the report documents.

CCR - Coal Combustion Residuals
SAP - Saprolite
PWR - Partially Weathered Rock
FBR - Fractured Bedrock
NA - Not Available
TOC - Top of Casing
Layer 1 - CCR/Dike Material
Layer 2 - SAP
Layer 3 - PWR
Layer 4 - FBR
ft bgs - feet below ground surface
ft NAVD88 - feet in North American Vertical Datum of 1988
PVC - polyvinyl chloride

Table 2
Monitoring Well and Piezometer Lithology
Groundwater Modeling Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGWA-1	APA-1/PZ-8S	2399899.287	1119232.658	543.97	Residuum - Silty Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	543.97	13	530.97
					SAP	SAP	Layer 2	13	530.97	50.9	493.07
						Bottom of borehole		50.9	493.07		543.97
SGWA-2	APA-1I/PZ-8I	2399907.288	1119237.111	587.79	Residuum - Silty clay (to 8 ft bgs) and sandy silt (to 19 ft bgs)	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	587.79	19	568.79
					SAP	SAP	Layer 2	19	568.79	73	514.79
					PWR (to 79 ft bgs) and Gneiss (highly to completely weathered)	PWR	Layer 3	73	514.79	95.8	491.99
						Bottom of borehole		95.8	491.99		
SGWA-3	APA-2	2399295.720	1120224.560	542.47	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	542.47	16	526.47
					SAP	SAP	Layer 2	16	526.47	50	492.47
						Bottom of borehole		50	492.47		
SGWA-4	APA-3	2401124.350	1121478.042	544.25	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	544.25	5	539.25
					SAP	SAP	Layer 2	5	539.25	63	481.25
					SAP	PWR	Layer 3	63	481.25	67	477.25
						Bottom of borehole		67	477.25		
SGWA-5	APA-4	2397426.720	1118087.173	505.32	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	505.32	8	497.32
					SAP	SAP	Layer 2	8	497.32	30	475.32
						Bottom of borehole		30	475.32		
SGWC-6	APC-1	2401979.450	1122168.292	507.94	overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	507.94	5	502.94
					SAP	SAP	Layer 2	5	502.94	25	482.94
						Bottom of borehole		25	482.94		
SGWC-7	APC-2	2402259.670	1122669.570	503.02	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	503.02	10	493.02
					PWR/SAP	SAP	Layer 2	10	493.02	17	486.02
					Weathered rock and saprolite, and biotite gneiss	PWR	Layer 3	17	486.02	35	468.02
						Bottom of borehole		35	468.02		
SGWC-8	APC-3	240.2979.66	1122866.662	511.05	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	511.05	5	506.05
					SAP	SAP	Layer 2	5	506.05	25	486.05
					PWR	PWR	Layer 3	25	486.05	35	476.05
					Bedrock	FBR	Layer 4	35	476.05	40	471.05
						Bottom of borehole		40	471.05		
SGWC-9	APC-4	2403455.820	1122635.284	507.61	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	507.61	5	502.61
					SAP	SAP	Layer 2	5	502.61	35	472.61
						Bottom of borehole		35	472.61		

Table 2
Monitoring Well and Piezometer Lithology
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Plant Scherer
Monroe County, Georgia

Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGWC-10	APC-5	2404047.170	1121896.649	507.61	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	507.61	10	497.61
					SAP	SAP	Layer 2	10	497.61	30	477.61
						Bottom of borehole		30	477.61		
SGWC-11	APC-6	2404332.790	1121542.388	508.6	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	508.6	10	498.6
					SAP	SAP	Layer 2	10	498.6	40	468.6
						Bottom of borehole		40	468.6		
SGWC-12	APC-7	2405009.680	1121576.067	497.35	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	497.35	5	492.35
					SAP	SAP	Layer 2	5	492.35	47.6	449.75
						Bottom of borehole		47.6	449.75		
SGWC-13	APC-8	2405760.640	1121274.076	480.05	Fill	Fill/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	480.05	10	470.05
					SAP	SAP	Layer 2	10	470.05	35	445.05
						Bottom of borehole		35	445.05		
SGWC-14	APC-9/PZ-16S	2406329.205	1120965.721	476.31	Residuum - Silty clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	476.31	13	463.31
					SAP	SAP	Layer 2	13	463.31	35.3	441.01
						Bottom of borehole		35.3	441.01		
SGWC-15	APC-10/PZ-17S	2407092.841	1120191.238	480.04	Residuum - Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	480.04	9	471.04
					SAP	SAP	Layer 2	9	471.04	45.2	434.84
						Bottom of borehole		45.2	434.84		
SGWC-16	APC-11/PZ-18S	2407154.726	1119221.306	456.79	Residuum - Silty clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	456.79	13	443.79
					SAP	SAP	Layer 2	13	443.79	40.2	416.59
						Bottom of borehole		40.2	416.59		
SGWC-17	APC-12/PZ-20S	2407266.725	1118309.038	414.73	Residuum - Fat clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	414.73	13	401.73
					SAP	SAP	Layer 2	13	401.73	24.5	390.23
						Bottom of borehole		24.5	390.23		
SGWC-18	APC-13/PZ-22S	2406930.957	1116946.848	510.17	Fill - lean clay	Fill/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	510.17	18	492.17
					SAP	SAP	Layer 2	18	492.17	44.5	465.67
						Bottom of borehole		44.5	465.67		
SGWC-19	APC-14/PZ-23S	2406096.077	1116024.669	475.71	Fill - Lean clay	Fill/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	475.71	13	462.71
					SAP	SAP	Layer 2	13	462.71	34.6	441.11
						Bottom of borehole		34.6	441.11		
SGWC-20	APC-15	2405307.580	1116020.766	501.12	Overburden	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	501.12	10	491.12
					SAP	SAP	Layer 2	10	491.12	25	476.12
						Bottom of borehole		25	476.12		

Table 2
Monitoring Well and Piezometer Lithology
Groundwater Modeling Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGWC-21	APC-16/PZ-1S	2404197.376	1115410.841	484.61	Lean Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	484.61	9	475.61
					SAP	SAP	Layer 2	9	475.61	24.9	459.71
						Bottom of borehole		24.9	459.71		
SGWC-22	APC-17/PZ-2S	2403002.383	1115540.735	515.46	Lean Clay	Fill	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	515.46	8	507.46
					Residuum - Silt	SAP	Layer 2	8	507.46	14	501.46
					SAP	SAP	Layer 2	14	501.46	50.1	465.36
						Bottom of borehole		50.1	465.36		
SGWC-23	APC-18/PZ-4I	2402131.918	1116694.349	519.99	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	519.99	8	511.99
					SAP	SAP	Layer 2	8	511.99	35	484.99
					PWR (to 35ft bgs), Granitic Gneiss (moderately to highly weathered)	PWR	Layer 3	35	484.99	49.7	470.29
						Bottom of borehole		49.7	470.29		
SGWA-24	APA-5/PZ-7S	2400742.979	1118125.665	500.75	Residuum - Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	500.75	9	491.75
					SAP	SAP	Layer 2	9	491.75	40	460.75
						Bottom of borehole		40	460.75		
SGWA-25	APA-6/PZ-9S	2400856.491	1120556.049	523.08	Residuum - Sandy silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	523.08	19	504.08
					SAP	SAP	Layer 2	19	504.08	45	478.08
						Bottom of borehole		45	478.08		
PZ-2I		2402991.209	1115545.515	514.99	Silty Clay	Fill	Layer 1	0	514.99	18	496.99
					SAP	SAP	Layer 2	18	496.99	68	446.99
					PWR (to 69 ft bgs), Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	68	446.99	75	439.99
					Biotite Gneiss slightly to mod weathered, fractured	FBR	Layer 4	75	439.99	84.3	430.69
						Bottom of borehole		84.3	430.69		
PZ-3S		2402532.892	1116085.690	514.6	Fill - Sandy Silt	Fill	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	514.6	9	505.6
					SAP	SAP	Layer 2	9	505.6	50	464.6
						Bottom of borehole		50	464.6		
PZ-5I		2401817.710	1117484.293	520.38	Fill - Silt	Fill	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	520.38	9	511.38
					SAP	SAP	Layer 2	9	511.38	34	486.38
					Saprolite with PWR (34-35 ft bgs), PWR (36-37 ft bgs)	PWR	Layer 3	34	486.38	36	484.38
					Gneiss, not weathered, fractured	FBR	Layer 4	36	484.38	47.2	473.18
						Bottom of borehole		47.2	473.18		
PZ-6S		2401936.713	1117910.804	528.93	Residuum - Sandy Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	528.93	14	514.93
					SAP	SAP	Layer 2	14	514.93	54.8	474.13
					PWR (assumed as bottom of borehole based on refusal depth)	PWR	Layer 3	54.8	474.13	54.8	474.13
						Bottom of borehole		54.8	474.13		

Table 2
Monitoring Well and Piezometer Lithology
Groundwater Modeling Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
PZ-9I		2400862.201	1120563.315	523.25	Residuum - Sandy Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	523.25	14	509.25
					SAP	SAP	Layer 2	14	509.25	60.5	462.75
					PWR (to 64 ft bgs) and Amphibolite (moderately to highly weathered)	PWR	Layer 3	60.5	462.75	80.2	443.05
						Bottom of borehole		80.2	443.05		
PZ-10S		2401768.261	1122338.553	513.85	Residuum - Sandy silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	513.85	14	499.85
					SAP	SAP	Layer 2	14	499.85	34.9	478.95
						Bottom of borehole		34.9	478.95		
PZ-11S		2402767.326	1123169.252	525.88	SAP	SAP	Layer 2	9	516.88	34	491.88
					SAP (blow counts, weathered rocks, very hard)	PWR	Layer 3	34	491.88	45.9	479.98
						Bottom of borehole		45.9	479.98		
PZ-12S		2403619.041	1122685.579	514.53	SAP	SAP	Layer 2	9	505.53	44.4	470.13
						Bottom of borehole		44.4	470.13		
PZ-13S		2404228.126	1121956.578	517.08	Fill - Sandy Silt	Fill	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	517.08	14	503.08
					SAP	SAP	Layer 2	14	503.08	45.3	471.78
						Bottom of borehole		45.3	471.78		
PZ-14S		2404820.413	1121852.656	508.55	SAP	SAP	Layer 2	9	499.55	44.9	472.18
						Bottom of borehole		44.9	463.65		
PZ-14I		2404822.284	1121865.436	509.61	SAP	SAP	Layer 2	9	500.61	64	445.61
					SAP with abundant weathered rock fragments (to 65 ft bgs), PWR (to 74 ft bgs) and Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	64	445.61	86	423.61
					Gneiss - more competent than above	FBR	Layer 4	86	423.61	95.2	414.41
						Bottom of borehole		95.2	414.41		
PZ-15S		2405559.339	1121486.185	495.95	Fill - Sandy silt	Fill	Layer 1	0	495.95	14	481.95
					SAP	SAP	Layer 2	14	481.95	40.1	455.85
						Bottom of borehole		40.1	455.85		
PZ-17I		2407106.304	1120190.514	480.18	Residuum - Sandy silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	480.18	14	466.18
					SAP	SAP	Layer 2	14	466.18	68	412.18
					SAP with same description of PWR below it (to 75 ft bgs), PWR (to 81.5 ft bgs), Amphibolite (moderately weathered)	PWR	Layer 3	68	412.18	89	391.18
					Gneiss - fractured	FBR	Layer 4	89	391.18	97.3	382.88
						Bottom of borehole		97.3	382.88		
PZ-19S		2407241.350	1118587.897	414.66	SAP	SAP	Layer 2	9	405.66	25	455.18
						Bottom of borehole		25	389.66		
PZ-19I		2407251.482	1118589.332	414.46	Residuum - Lean clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	414.46	13	401.46
					SAP	SAP	Layer 2	13	401.46	53	361.46
					PWR (to 55 ft bgs), Biotite Gneiss (slightly to moderately weathered, soft)	PWR	Layer 3	53	361.46	71.9	342.56
						Bottom of borehole		71.9	342.56		

Table 2
Monitoring Well and Piezometer Lithology
Groundwater Modeling Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
PZ-20I		2407272.337	1118318.135	414.11	Residuum - Sandy fat clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	414.11	13	401.11
					SAP	SAP	Layer 2	13	401.11	60	354.11
					PWR (to 64 ft bgs), Amphibolite Gneiss (moderately to highly weathered)	PWR	Layer 3	60	354.11	79.6	334.51
						Bottom of borehole		79.6	334.51		
PZ-21S		2407007.551	1117638.787	470.46	Residuum - sandy silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	470.46	14	456.46
					SAP	SAP	Layer 2	14	456.46	25	445.46
						Bottom of borehole		25	445.46		
PZ-23I		NA	NA	NA	Fill - Lean clay	Fill	Layer 1	0		13	
					SAP	SAP	Layer 2	13		65	
					PWR	PWR	Layer 3	65		86.8	
					Granitic Gneiss - Fractured	FBR	Layer 4	86.8		86.8	
						Bottom of borehole		86.8			
PZ-24S		NA	NA	NA	SAP	SAP	Layer 2	11		28.9	
						Bottom of borehole		28.9			
PZ-25S		1121846.860	2404569.120	525.47	Well-graded Sand with Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	525.47	26	499.47
					Sandy Silt	SAP	Layer 2	26	499.47	36	489.47
					Elastic Silt	SAP	Layer 2	36	489.47	56	469.47
						Bottom of borehole		56	469.47		
PZ-25I		1121836.050	2404599.780	525.7	Well-graded Sand with Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	525.7	26	499.7
					Sandy Silt	SAP	Layer 2	26	499.7	36	489.7
					Elastic Silt	SAP	Layer 2	36	489.7	56	469.7
					SAP	SAP	Layer 2	56	469.7	126	399.7
						Bottom of borehole		126	399.7		
PZ-26S		1121694.340	2405733.540	488.88	Lean Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	488.88	10	478.88
					Sandy Silt	SAP	Layer 2	10	478.88	18	470.88
					Poorly-graded sand with silt	SAP	Layer 2	18	470.88	33	455.88
					Elastic Silt	SAP	Layer 2	33	455.88	35	453.88
					Silty Sand	SAP	Layer 2	35	453.88	43	445.88
					Poorly-graded sand	SAP	Layer 2	43	445.88	45	443.88
					Silty Sand	SAP	Layer 2	45	443.88	46	442.88
						Bottom of borehole		46	442.88		
PZ-27S		1121560.770	2406040.280	472.96	Clayey Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	472.96	2	470.96
					Lean Clay	SAP	Layer 2	2	470.96	9	463.96
					Well-graded sand with Silt	SAP	Layer 2	9	463.96	27	445.96
					Clayey Sand	SAP	Layer 2	27	445.96	32	440.96
					PWR	PWR	Layer 3	32	440.96	46	426.96
						Bottom of borehole		46	426.96		

Table 2
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Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
PZ-27D		1121557.130	2406040.290	472.41	Clayey Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	472.41	2	470.41
					Lean Clay	SAP	Layer 2	2	470.41	9	463.41
					Well-graded sand with Silt	SAP	Layer 2	9	463.41	27	445.41
					Clayey Sand	SAP	Layer 2	27	445.41	32	440.41
					PWR	PWR	Layer 3	32	440.41	56	416.41
					Biotite Gneiss - moderately to intensely fractured	FBR	Layer 4	56	416.41	126	346.41
						Bottom of borehole		126	346.41		
PZ-28I		1121390.920	2406377.780	481.32	Residuum - Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	481.32	12	469.32
					SAP	SAP	Layer 2	12	469.32	47	434.32
					PWR (to 48 ft bgs), Biotite Gneiss (highly weathered)	PWR	Layer 3	47	434.32	58	423.32
					Biotite Gneiss - slightly weathered, intensely fractured	FBR	Layer 4	58	423.32	70	411.32
						Bottom of borehole		70	411.32		
PZ-29S		1121264.410	2406623.250	488.43	Sandy Lean Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	488.43	2	486.43
					Sandy Silt	SAP	Layer 2	2	486.43	22	466.43
					Sand with Silt to Weathered Biotite Gneiss	PWR	Layer 3	22	466.43	46	442.43
						Bottom of borehole		46	442.43		
PZ-30I		1121069.520	2407083.370	475.42	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	475.42	31	444.42
					SAP	SAP	Layer 2	31	444.42	56	419.42
					Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	56	419.42	87	388.42
						Bottom of borehole		87	388.42		
PZ-31I		1121201.760	2407450.470	463.8	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	463.8	28	435.8
					SAP	SAP	Layer 2	28	435.8	39	424.8
					Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	39	424.8	68	395.8
					Biotite Gneiss - fractured	FBR	Layer 4	68	395.8	77	386.8
						Bottom of borehole		77	386.8		
PZ-32S		1121089.930	2407726.520	462.28	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	462.28	6	456.28
					Clayey Sand	SAP	Layer 2	6	456.28	13	449.28
					Sandy Silt	SAP	Layer 2	13	449.28	15	447.28
					Silty Sand	SAP	Layer 2	15	447.28	29	433.28
					Sandy Silt	SAP	Layer 2	29	433.28	36	426.28
					Poorly-graded sand with clay	SAP	Layer 2	36	426.28	45	417.28
					Weathered Biotite Gneiss, pulverized rock	PWR	Layer 3	45	417.28	57	405.28
						Bottom of borehole		57	405.28		

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PZ-32D		1121086.290	2407726.530	462.32	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	462.32	6	456.32
					Clayey Sand	SAP	Layer 2	6	456.32	13	449.32
					Sandy Silt	SAP	Layer 2	13	449.32	15	447.32
					Silty Sand	SAP	Layer 2	15	447.32	29	433.32
					Sandy Silt	SAP	Layer 2	29	433.32	36	426.32
					Poorly-graded sand with clay	SAP	Layer 2	36	426.32	45	417.32
					SAP (pulverized rock) (to 58 ft bgs), Weathered Biotite Gneiss (to 63 ft bgs), slightly decomposed Biotite Gneiss (69 ft bgs), Biotite Gneiss (highly weathered) (to 76 ft bgs)	PWR	Layer 3	45	417.32	76	386.32
					PWR (58-69) highly weathered Gneiss (69-76), Biotite and granitic Gneiss - not to moderately weathered, slightly to moderately fractured	FBR	Layer 4	76	386.32	126.5	335.82
						Bottom of borehole		126.5	335.82		
PZ-33I		1121243.790	2409073.690	466.25	Sandy Lean Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	466.25	6	460.25
					Sandy Silt	SAP	Layer 2	6	460.25	13	453.25
					Well-graded sand with Silt	SAP	Layer 2	13	453.25	27	439.25
					Clayey Sand	SAP	Layer 2	27	439.25	40	426.25
					Well-graded sand with Silt	SAP	Layer 2	40	426.25	56	410.25
					Pulverized rock (Biotite Gneiss) (to 72 ft bgs), Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	56	410.25	76.5	389.75
						Bottom of borehole		76.5	389.75		
PZ-34S		1121328.320	2409318.430	440.78	Lean Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	440.78	7	433.78
					Sandy Silt	SAP	Layer 2	7	433.78	8	432.78
					Elastic Silt	SAP	Layer 2	8	432.78	11	429.78
					Well-graded sand with Silt	SAP	Layer 2	11	429.78	15	425.78
					SAP	SAP	Layer 2	15	425.78	42	398.78
					Weathered Biotite Gneiss	PWR	Layer 3	42	398.78	46	394.78
						Bottom of borehole		46	394.78		
PZ-35I		1121597.940	2406059.150	474.53	Sandy Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	474.53	2	472.53
					Poorly-graded sand with silt	SAP	Layer 2	2	472.53	5	469.53
					Clayey Sand	SAP	Layer 2	5	469.53	8	466.53
					Poorly-graded sand with silt	SAP	Layer 2	8	466.53	24	450.53
					Well-graded sand with Silt	SAP	Layer 2	24	450.53	32	442.53
					Poorly-graded sand	SAP	Layer 2	32	442.53	36	438.53
					Well-Graded Sand with Silt	SAP	Layer 2	36	438.53	51	423.53
					Biotite Gneiss (slightly to highly weathered)	PWR	Layer 3	51	423.53	56	418.53
						Bottom of borehole		56	418.53		
PZ-36I		1120407.980	2407269.420	478.85	Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	478.85	21	457.85
					SAP	SAP	Layer 2	21	457.85	65	413.85
					Biotite Gneiss (moderately to highly weathered)	PWR	Layer 3	65	413.85	80	398.85
					Biotite Gneiss - fractured, slightly weathered	FBR	Layer 4	80	398.85	97	381.85
						Bottom of borehole		97	381.85		

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Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
PZ-37I		1121176.050	2408430.710	479.54	Silt/Silty Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	479.54	53	426.54
					SAP	SAP	Layer 2	53	426.54	63	416.54
					Transition Zone Pulverized Rock	PWR	Layer 3	63	416.54	67	412.54
					Biotite Gneiss - moderately fractured, not to slightly weathered	FBR	Layer 4	67	412.54	72.5	407.04
						Bottom of borehole		72.5	407.04		
PZ-38I		1121475.610	2406354.220	482.1	Sandy Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	482.1	8	474.1
					Poorly-graded sand with silt	SAP	Layer 2	8	474.1	11	471.1
					Elastic Silt	SAP	Layer 2	11	471.1	16	466.1
					Poorly-graded sand with silt	SAP	Layer 2	16	466.1	19	463.1
					Well-graded Sand	SAP	Layer 2	19	463.1	20	462.1
					SAP	SAP	Layer 2	20	462.1	52.5	429.6
					Weathered Biotite Gneiss (to 63 ft bgs), Transition Zone Pulverized Rock	PWR	Layer 3	52.5	429.6	76	406.1
						Bottom of borehole		76	406.1		
GWC-1		2411556.160	1120077.830	371.54	Residuum	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	371.54	19.5	352.04
					SAP	SAP	Layer 2	19.5	352.04	36	335.54
						Bottom of borehole		36	335.54		
GWC-2		2411493.240	1119816.770	376.91	Silty Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	376.91	19.5	357.41
					SAP	SAP	Layer 2	19.5	357.41	54.5	322.41
						Bottom of borehole		54.5	322.41		
GWC-3		2411202.800	1119614.010	407.19	Sandy silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	407.19	28.5	378.69
					Silty Sand	SAP	Layer 2	28.5	378.69	38.5	368.69
					Silty Sand	PWR	Layer 3	38.5	368.69	46	361.19
						Bottom of borehole		46	361.19		
GWA-21		2409462.770	1120675.770	419.56	Sandy clay, clayey sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	419.56	10	409.56
					Weathered Rock	SAP	Layer 2	10	409.56	17	402.56
						Bottom of borehole		17	402.56		
GWA-22		2409473.480	1120962.580	441.75	Sandy Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	441.75	24	417.75
					SAP	SAP	Layer 2	24	417.75	33	408.75
					Gneiss	PWR	Layer 3	33	408.75	40	401.75
						Bottom of borehole		40	401.75		
GWC-29		2408717.920	1119875.660	396.69	Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	396.69	15	381.69
					SAP	SAP	Layer 2	15	381.69	25	371.69
						Bottom of borehole		25	371.69		
GWA-45		2407889.430	1120669.520	447.98	Mottled Clay, Silt, Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	447.98	33	414.98
						Bottom of borehole		33	414.98		
GWA-46		2408235.720	1120783.750	458.1	Mottled Clay, Silt, Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	458.1	43.5	414.6
						Bottom of borehole		43.5	414.6		

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Well ID	Previously Named	Easting	Northing	Ground Surface Elevation (ft msl)	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
GWA-47		2408585.250	1120862.990	462.81	Clay, Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	462.81	33	429.81
					SAP	SAP	Layer 2	33	429.81	50	412.81
					Weathered Gneiss	PWR	Layer 3	50	412.81	55	407.81
						Bottom of borehole		55	407.81		
GWA-48		2408939.900	1120953.850	458.73	Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	458.73	35	423.73
					SAP	SAP	Layer 2	35	423.73	45	413.73
					Weathered Gneiss	PWR	Layer 3	45	413.73	65	393.73
					Gneiss	FBR	Layer 4	65	393.73	72	386.73
						Bottom of borehole		72	386.73		
GWA-49		2409288.700	1121030.470	429.96	Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	429.96	24	405.96
					SAP	SAP	Layer 2	24	405.96	37	392.96
						Bottom of borehole		37	392.96		
GWC-50		2408955.890	1119917.650	404.16	Clay, Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	404.16	25	379.16
					SAP	SAP	Layer 2	25	379.16	30	374.16
					Hard Saprolite	PWR	Layer 3	30	374.16	35	369.16
						Bottom of borehole		35	369.16		
GWC-51		2408437.100	1119835.850	406.88	Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	406.88	13	393.88
					SAP	SAP	Layer 2	13	393.88	27	379.88
						Bottom of borehole		27	379.88		
GWC-52		2408203.870	1119972.460	414.14	Silt, Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	414.14	24	390.14
					SAP	SAP	Layer 2	24	390.14	30	384.14
						Bottom of borehole		30	384.14		
GWC-53		2407942.970	1120319.920	432.93	Clay, Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	432.93	28	404.93
						Bottom of borehole		28	404.93		
LPZ-1		2398512.884	1117001.063	549.84	Clayey Silt	SAP	Layer 2	0	549.84	14.5	535.34
					PWR	PWR	Layer 3	14.5	535.34	58	491.84
					Biotite Gneiss	FBR	Layer 4	58	491.84	65.8	484.04
						Bottom of borehole		65.8	484.04		
LPZ-2		2398005.522	1119972.986	510.46	Clayey Sand	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	510.46	13	497.46
					Silty Sand	SAP	Layer 2	13	497.46	20	490.46
						Bottom of borehole		20	490.46		
LPZ-3		2398656.589	1117884.204	511.48	Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	511.48	4	507.48
					Clayey Silt	SAP	Layer 2	4	507.48	13	498.48
					Clayey Sand	SAP	Layer 2	13	498.48	18	493.48
					Clayey Silt	SAP	Layer 2	18	493.48	30.3	481.18
					SAP	SAP	Layer 2	30.3	481.18	35	476.48
						Bottom of borehole		35	476.48		

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LPZ-4		2397083.703	1115963.340	457.83	Silty Clay	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	457.83	6	451.83
					Clay	SAP	Layer 2	6	451.83	10	447.83
					Clayey Sand	SAP	Layer 2	10	447.83	18	439.83
					Silty Sand	SAP	Layer 2	18	439.83	25	432.83
					SAP	SAP	Layer 2	25	432.83	40	417.83
						Bottom of borehole		40	417.83		
LPZ-5		2399698.731	1115329.718	520.97	Silt	RES/SAP	Layer 1: 1 ft thick Layer 2: Remaining thickness	0	520.97	8	512.97
					Silty Clay	SAP	Layer 2	8	512.97	18.2	502.77
					Silty Sand (weathered rock)	SAP	Layer 2	18.2	502.77	63	457.97
					Silty Sand (to 68 ft bgs), Gneiss (deeply weathered)	PWR	Layer 3	63	457.97	103.4	417.57
						Bottom of borehole		103.4	417.57		
B-102A		2,405,054	1,117,122	504.4	CCR	CCR	Layer 1	0	504.4	60	444.4
B-102B		2,405,057	1,117,126	504.4	CCR	CCR	Layer 1	0	504.4	20.6	483.8
B-103A		2,405,595	1,117,590	505.8	CCR	CCR	Layer 1	0	505.8	60	445.8
B-103B		2,405,594	1,117,596	525.8	CCR	CCR	Layer 1	0	525.8	20	505.8
B-104A		2,405,846	1,117,967	504.2	CCR	CCR	Layer 1	0	504.2	60	444.2
B-104B		2,405,851	1,117,972	504.1	CCR	CCR	Layer 1	0	504.1	20	484.1
AP1R		2406844.490	1118448.308	NA	Gravel	Fill	Layer 1	0		1	
					Sand	SAP	Layer 2	103.4		103.4	
					SAP	SAP	Layer 2	103.4		124.6	
					Auger Refusal	PWR	Layer 3	124.6		124.6	
						Bottom of borehole		124.6			
APA2		2406017.332	1116326.835	NA	Clayey Silt, Sandy Clay	Dike Material	Layer 1	0		18.5	
					Decomposed Rock	SAP	Layer 2	18.5		29.1	
						Bottom of borehole		29.1			
APA3		2406140.776	1116416.122	NA		Dike Material	Layer 1	0		18	
					Decomposed Rock	SAP	Layer 2	18		55	
						Bottom of borehole		55			
APA4		2406349.675	1116541.17	NA	Sandy Clayey Silt, Clay	Dike Material	Layer 1	0		8.5	
					Decomposed Rock	SAP	Layer 2	8.5		45	
						Bottom of borehole		45			
APA5		2405926.811	1116282.42	472.020	Crushed Rock	Dike Material	Layer 1	0		7.2	
					Silty Clay, Sandy Clayey Silt, Sandy Silt	SAP	Layer 2	7.2		24.3	
					Sandy Silt with rock fragments	SAP	Layer 2	24.3		44.3	
						Bottom of borehole		44.3			
AP6		2405851.502	1121166.564	NA	No Data	No Data	No Data	0		11.5	
					Decomposed Rock	SAP	Layer 2	11.5		35	
						Bottom of borehole		38.5		38.5	
AP7		2405853.689	1121165.367	NA	No Data	No Data	No Data	0		11.5	
					Weathered Rock	SAP	Layer 2	11.5		11.5	
						Bottom of borehole		11.5			

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AP-9		2407245.201	1118491.264	411.51	No Data	No Data	No Data	0		13	
					Decomposed Rock	SAP	Layer 2	13		20	
					Top of Weathered Rock	PWR	Layer 3	20		20	
						Bottom of borehole		20			
AP10		2405882.537	1116253.005	470.630	Clay	Dike Material	Layer 1	0		30	
					Weathered Rock	SAP	Layer 2	30		51	
						Bottom of borehole		51			
AP-12		2405793.374	1116223.681	475.140	Clayey Sand, Silty Clay	Dike Material	Layer 1	0		21.5	
					Decomposed Rock	SAP	Layer 2	21.5		43.5	
						Bottom of borehole		43.5			
AP13		2405792.231	1116223.511	475.140	No Data	No Data	No Data	0		19.5	
					Decomposed Rock	SAP	Layer 2	19.5		26	
						Bottom of borehole		26			

RES - Residual Soils
CCR - Coal Combustion Residuals
SAP - Saprolite
PWR - Partially Weathered Rock
FBR - Fractured Bedrock
Layer 1 - CCR/Dike Material inside AP-1 footprint, 1-foot thick layer outside AP-1 footprint
Layer 2 - SAP
Layer 3 - PWR
Layer 4 -FBR
NA - Not Available
ft bgs - feet below ground surface
ft msl - feet above mean sea level
Unit - Refers to the strata used to define vertical layers for numerical groundwater model construction

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
CP-1	Coal	CCR	Layer 1	0	455.73	10.5	445.23
		SAP	Layer 2	10.5	445.23		
		Bottom of Boring		11.4	444.33		
CP-8	Coal	CCR	Layer 1	0	459.73	15.2	444.53
		SAP	Layer 2	15.2	444.53		
		Bottom of Boring		16.4	443.33		
CP-12	Coal	CCR	Layer 1	0	461.03	16.5	444.53
		SAP	Layer 2	16.5	444.53		
		Bottom of Boring		18.5	442.53		
C-102	Sandy Silty Clay, Clayey Sandy Silt	SAP	Layer 2	0	516.3	64.4	451.9
	Auger Refusal, Biotite Gneiss (moderately hard)	PWR	Layer 3	64.4	451.9	114	402.3
	Gneiss (fractured)	FBR	Layer 4	114	402.3		
		Bottom of Boring		139	377.3		
C-103	Clayey Sandy Silt, Sandy Silt	SAP	Layer 2	0	504.9	61	443.9
	PWR	PWR	Layer 3	61	443.9	119.4	385.5
	Gneiss (fractured)	FBR	Layer 4	119.4	385.5		
		Bottom of Boring		168.5	336.4		
C-104	Sandy Clayey Silt, Sandy Silt	SAP	Layer 2	0	492.8	89	403.8
	PWR	PWR	Layer 3	89	403.8	125.9	366.9
	Gneiss (fractured)	FBR	Layer 4	125.9	366.9		
		Bottom of Boring		149	343.8		
C-105	Sandy Silt, Silty Sand	SAP	Layer 2	0	482.7		
		Bottom of Boring		51	431.7		
C-106	Sandy Silty Clay, Sandy Silt	SAP	Layer 2	0	478.6		
		Bottom of Boring		50	428.6		
C-107	Silty Sand	SAP	Layer 2	0	474.7	23	451.7
	PWR	PWR	Layer 3	23	451.7		
		Bottom of Boring		34.1	440.6		
C-108	Sandy Clayey Silt, Sandy Silt, Sand	SAP	Layer 2	0	477.9		
		Bottom of Boring		50	427.9		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
C-109	Sandy Silt, Silty Sand	SAP	Layer 2	0	484.3	52	432.3
	PWR	PWR	Layer 3	52	432.3		
		Bottom of Boring		58.8	425.5		
C-110	Sandy Clayey Silt, Silty Sand	SAP	Layer 2	0	496.3	55	441.3
	PWR	PWR	Layer 3	55	441.3		
		Bottom of Boring		58.8	437.5		
C-120	Sand, Silty Sand	SAP	Layer 2	0	411	43	368
	PWR	PWR	Layer 3	43	368		
		Bottom of Boring		49.1	361.9		
C-123	Sandy Silty Clay, Clayey Silty Sand, Silty Sand	SAP	Layer 2	0	448.4	52	396.4
	PWR	PWR	Layer 3	52	396.4		
		Bottom of Boring		55.3	393.1		
C-124	Sandy Silty Clay, Sandy Silt, Silty Sand, Sand	SAP	Layer 2	0	454.6	53	401.6
	PWR	PWR	Layer 3	53	401.6		
		Bottom of Boring		60.9	393.7		
C-125	Sandy Silty Clay, Sandy Silt	SAP	Layer 2	0	459.9	61	398.9
	PWR	PWR	Layer 3	61	398.9		
		Bottom of Boring		65.4	394.5		
C-126	Sandy Silty Clay, Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	464.7	52.5	412.2
	PWR	PWR	Layer 3	52.5	412.2		
		Bottom of Boring		60	404.7		
C-127	Sandy Silty Clay, Sandy Silt, Silty Sand	SAP	Layer 2	0	471.6	69.7	401.9
	Auger Refusal	PWR	Layer 3	69.7	401.9		
		Bottom of Boring		69.7	401.9		
C-128	Sandy Silty Clay, Sandy Clayey Silt, Sandy Silt, Sand	SAP	Layer 2	0	477.4	61	416.4
	Auger Refusal	PWR	Layer 3	61	416.4		
		Bottom of Boring		61	416.4		
C-129	Sandy Clayey Silt, Sandy Silt, Silty Sand, Sand	SAP	Layer 2	0	477		
		Bottom of Boring		60	417		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
C-130	Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	481.7	53	428.7
	Auger Refusal	PWR	Layer 3	53	428.7		
		Bottom of Boring		58	423.7		
C-131	Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	487.7	71	416.7
	PWR	PWR	Layer 3	71	416.7		
		Bottom of Boring		78.7	409		
C-132	Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	489.3	72.8	416.5
	Auger Refusal	PWR	Layer 3	72.8	416.5		
		Bottom of Boring		72.8	416.5		
C-133	Sandy Clayey Silt, Sandy Silt	SAP	Layer 2	0	485.5	61	424.5
	PWR	PWR	Layer 3	61	424.5		
		Bottom of Boring		64.4	421.1		
C-134	Clayey Silt, Sandy Silt, Sand	SAP	Layer 2	0	483.9	42.5	441.4
	PWR	PWR	Layer 3	42.5	441.4		
		Bottom of Boring		50	433.9		
C-135	Sandy Silty Clay, Sandy Silt	SAP	Layer 2	0	486.3	37	449.3
	PWR	PWR	Layer 3	37	449.3		
		Bottom of Boring		47	439.3		
C-156	Sandy Silty Clay, Sandy Silt, Silty Sand	SAP	Layer 2	0	519.4	62	457.4
	PWR	PWR	Layer 3	62	457.4		
		Bottom of Boring		69.6	449.8		
C-158	Sandy Silty Clay, Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	495.4	73	422.4
	PWR	PWR	Layer 3	73	422.4		
		Bottom of Boring		109.7	385.7		
C-159	Sandy Clayey Silt, Silty Sand, Sandy Silt	SAP	Layer 2	0	484.8	73	411.8
	PWR	PWR	Layer 3	73	411.8		
		Bottom of Boring		79.6	405.2		
C-160	Sandy Silty Clay, Sandy Silt, Silty Sand	SAP	Layer 2	0	478.8	47	431.8
	PWR	PWR	Layer 3	47	431.8		
		Bottom of Boring		64.7	414.1		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
C-162	Silty Sand, Sandy Silt	SAP	Layer 2	0	471.1	33	438.1
	PWR	PWR	Layer 3	33	438.1		
		Bottom of Boring		49.7	421.4		
C-166	Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	460.6	87	373.6
	PWR	PWR	Layer 3	87	373.6		
		Bottom of Boring		94.5	366.1		
C-167	Clayey Silt, Sandy Silt	SAP	Layer 2	0	451.5	72	379.5
	PWR	PWR	Layer 3	72	379.5		
		Bottom of Boring		89.7	361.8		
C-168	Sandy Silty Clay, Sandy Silt, Silty Sand	SAP	Layer 2	0	465.2	43	422.2
	PWR	PWR	Layer 3	43	422.2		
		Bottom of Boring		54.7	410.5		
C-169	Sandy Silty Clay, Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	473.3	68	405.3
	PWR	PWR	Layer 3	68	405.3		
		Bottom of Boring		74.7	398.6		
C-171	Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	477.8	71	406.8
	PWR	PWR	Layer 3	71	406.8		
		Bottom of Boring		84.6	393.2		
C-172	Sandy Silt, Silty Sand	SAP	Layer 2	0	489.8	58	431.8
	PWR	PWR	Layer 3	58	431.8		
		Bottom of Boring		64.6	425.2		
C-173	Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	485.1	62.5	422.6
	PWR	PWR	Layer 3	62.5	422.6		
		Bottom of Boring		74.6	410.5		
C-174	Sandy Silty Clay, Sandy Clayey Silt, Sandy Silt, Silty Sand	SAP	Layer 2	0	448.1	56	392.1
	PWR	PWR	Layer 3	56	392.1		
		Bottom of Boring		59.7	388.4		
C-175	Sandy Clayey Silt, Sandy Silt, Silty Sand, Sand	SAP	Layer 2	0	452.7	67	385.7
	PWR	PWR	Layer 3	67	385.7		
		Bottom of Boring		69.6	383.1		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
C-176	Sandy Silt, Silty Sand	SAP	Layer 2	0	423	42.5	380.5
	PWR	PWR	Layer 3	42.5	380.5		
		Bottom of Boring		59.6	363.4		
C-177	Sandy Silt, Silty Sand	SAP	Layer 2	0	433.8	62	371.8
	PWR	PWR	Layer 3	62	371.8		
		Bottom of Boring		89	344.8		
C-178	Alluvium, Silty Sand	SAP	Layer 2	0	408.9	22	386.9
	PWR	PWR	Layer 3	22	386.9		
		Bottom of Boring		24.6	384.3		
C-179	Sandy Silty Clay, Sand with Gravel, Sandy Silt, Silty Sand	SAP	Layer 2	0	405.1	33.5	371.6
	PWR	PWR	Layer 3	33.5	371.6		
		Bottom of Boring		50	355.1		
SGYP-1	Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	479.43	15	464.43
	SAP	SAP	Layer 2	15	464.43	35	444.43
	SAP (hard)	PWR	Layer 3	28.5	450.93	35	444.43
	Gneiss (slightly weathered, fractured)	FBR	Layer 4	35	444.43		
		Bottom of Boring		49.4	430.03		
SGYP-2	Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	449.5	15	434.5
	SAP	SAP	Layer 2	15	434.5	53	396.5
	Auger Refusal	PWR	Layer 3	53	396.5		
		Bottom of Boring		53	396.5		
SGYP-3	Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	460.4	5	455.4
	SAP	SAP	Layer 2	5	455.4	43.5	416.9
	SAP (hard)	PWR	Layer 3	43.5	416.9		
		Bottom of Boring		65	395.4		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGYP-4	Clayey Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	384.5	8	376.5
	SAP	SAP	Layer 2	8	376.5	23.5	361
	SAP (very dense)	PWR	Layer 3	23.5	361		
		Bottom of Boring		34	350.5		
SGYP-5	Sand, Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	474.9	33	441.9
	SAP	SAP	Layer 2	33	441.9	53.5	421.4
	Auger Refusal	PWR	Layer 3	53.5	421.4		
		Bottom of Boring		53.5	421.4		
SGYP-6	SAP	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	4	452.4	25	431.4
	Gneiss (weathered)	PWR	Layer 3	25	431.4	37	419.4
	Gneiss (fractured)	FBR	Layer 4	37	419.4		
		Bottom of Boring		40.3	416.1		
SGYP-7	Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	447.71	24	423.71
	SAP	SAP	Layer 2	24	423.71	33.5	414.21
	SAP (hard)	PWR	Layer 3	33.5	414.21		
		Bottom of Boring		49	398.71		
SGYP-9	Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	396.6	11	385.6
	SAP	SAP	Layer 2	11	385.6	36.5	360.1
	SAP (hard)	PWR	Layer 3	33.5	363.1		
		Bottom of Boring		36.5	360.1		
SGYP-10	Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	424.9	25	399.9
	SAP	SAP	Layer 2	25	399.9	53.5	371.4
	SAP (hard)	PWR	Layer 3	53.5	371.4		
		Bottom of Boring		64	360.9		
SGYP-12	Sandy Lean Clay, Silt, Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	437.7	33.5	404.2
	SAP	SAP	Layer 2	33.5	404.2		
		Bottom of Boring		45	392.7		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGYP-14	Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	396.6	28.5	368.1
	SAP	PWR	Layer 3	28.5	368.1		
		Bottom of Boring		40	356.6		
SGYP-15	Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	430.3	40.5	389.8
	Silty Sand	SAP	Layer 2	40.5	389.8	48.5	381.8
	SAP (hard)	PWR	Layer 3	48.5	381.8		430.3
		Bottom of Boring		58.5	371.8		430.3
SGYP-19	Sandy Silt, Clay, Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	446.8	38.5	408.3
	SAP	SAP	Layer 2	38.5	408.3	57.5	389.3
	Gneiss	PWR	Layer 3	57.5	389.3	68	378.8
	Gneiss	FBR	Layer 4	68	378.8		
		Bottom of Boring		70.1	376.7		
SGYP-20	Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	449.8	28.5	421.3
	SAP	SAP	Layer 2	28.5	421.3	48.5	401.3
	Saprolite (hard)	PWR	Layer 3	48.5	401.3	52	397.8
	Gneiss, Amphibolite	FBR	Layer 4	52	397.8		
		Bottom of Boring		64	385.8		
SGYP-21	Sandy Silty Clay, Silty Sand, Sandy Clay, Silt, Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	470.2	33.5	436.7
	SAP	SAP	Layer 2	33.5	436.7		
		Bottom of Boring		60	410.2		
SGYP-22	Sandy Clay, Sandy Silt, Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	440.7	28.5	412.2
	SAP	SAP	Layer 2	28.5	412.2		
		Bottom of Boring		40	400.7		
SGYP-23	Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	435	25.5	409.5
	SAP	SAP	Layer 2	25.5	409.5	38.5	396.5
	SAP (hard)	PWR	Layer 3	38.5	396.5		
		Bottom of Boring		47.5	387.5		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGYP-24	Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	459.7	43.5	416.2
	SAP	SAP	Layer 2	43.5	416.2	73.5	386.2
	SAP (hard)	PWR	Layer 3	73.5	386.2		
		Bottom of Boring		74	385.7		
SGYP-25	Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	371.2	18.5	352.7
	Saprolite (hard)	PWR	Layer 3	18.5	352.7		
		Bottom of Boring		30	341.2		
SGYP-26	Clayey Silt, Silty Sand, Sand, Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	454.7	38.5	416.2
	SAP	SAP	Layer 2	38.5	416.2	58.5	396.2
	Highly Weathered Rock	PWR	Layer 3	58.5	396.2	71.3	383.4
	Top of Rock	FBR	Layer 4	71.3	383.4		
		Bottom of Boring		71.3	383.4		
SGYP-28	Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	430	38.5	391.5
	SAP	SAP	Layer 2	38.5	391.5	48.5	381.5
	SAP (hard)	PWR	Layer 3	48.5	381.5		
		Bottom of Boring		68.5	361.5		
SGYP-29	Clayey Silt, Silty Clay, Sandy Silt, Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	454.4	28.5	425.9
	SAP	SAP	Layer 2	28.5	425.9	38.5	415.9
	Highly Weathered Rock	PWR	Layer 3	38.5	415.9		
		Bottom of Boring		40	414.4		
SGYP-30	Clay, Sandy Clay, Clayey Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	468.8	53.5	415.3
	SAP	SAP	Layer 2	53.5	415.3	63.5	405.3
	SAP (hard)	PWR	Layer 3	63.5	405.3		
		Bottom of Boring		65	403.8		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SGYP-31	Clayey Silt, Sandy Silt, Silty Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	462.9	53.5	409.4
	SAP	SAP	Layer 2	53.5	409.4	58.5	404.4
	SAP (hard)	PWR	Layer 3	58.5	404.4		
		Bottom of Boring		65.3	397.6		
SGYP-32	Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	444.8	48.5	396.3
	SAP	SAP	Layer 2	48.5	396.3		
		Bottom of Boring		68	376.8		
SGYP-33	Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	411.9	28.5	383.4
	SAP	SAP	Layer 2	28.5	383.4		
		Bottom of Boring		59.2	352.7		
SGYP-34	Clayey Silt, Sandy Silt	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	441.8	38.5	403.3
	SAP	SAP	Layer 2	38.5	403.3	48.5	393.3
	SAP (hard)	PWR	Layer 3	48.5	393.3		
		Bottom of Boring		63.5	378.3		
B-100	Roadway Fill and Embankment Fill	Dike Material	Layer 1	0	459.7	51	408.7
	Residuum - Silty Sand, Silt	SAP	Layer 2	51	408.7	63.5	396.2
	SAP	SAP	Layer 2	63.5	396.2	84.5	375.2
	PWR	PWR	Layer 3	84.5	375.2		
		Bottom of Boring		100.2	359.5		
B-101	Roadway Fill and Embankment Fill	Dike Material	Layer 1	0	411.4	5	406.4
	Alluvium	SAP	Layer 2	5	406.4	15	396.4
	SAP	SAP	Layer 2	15	396.4	41.1	370.3
	Auger Refusal	PWR	Layer 3	41.1	370.3		
		Bottom of Boring		41.1	370.3		
B-102	CCR	CCR	Layer 1	0	504.4	68.5	435.9
	SAP	SAP	Layer 2	68.5	435.9	83.5	420.9
	PWR	PWR	Layer 3	83.5	420.9		
		Bottom of Boring		85	419.4		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
B-103	CCR	CCR	Layer 1	0	505.3	82	423.3
	Alluvium	SAP	Layer 2	82	423.3	88.9	416.4
	SAP	SAP	Layer 2	88.9	416.4	95	410.3
	Auger Refusal	PWR	Layer 3	95	410.3		
		Bottom of Boring		95	410.3		
B-104	CCR	CCR	Layer 1	0	504.4	83.5	420.9
	ALL	SAP	Layer 2	83.5	420.9	93	411.4
	PWR	PWR	Layer 3	93	411.4		
		Bottom of Boring		93.9	410.5		
B-105	Water	WATER		0	495.0	49.5	445.5
	CCR	CCR	Layer 1	49.5	445.5	51	444.0
	Residuum - Clay, Silt	SAP	Layer 2	51	444.0	67.5	427.5
	SAP	SAP	Layer 2	67.5	427.5		
		Bottom of Boring		85	410.0		
B-105A	Water	WATER		0	495.0	52.4	442.6
	Residuum - Silty Sand	SAP	Layer 2	52.4	442.6	67.5	427.5
	SAP	SAP	Layer 2	67.5	427.5	87	408.0
	Auger Refusal	PWR	Layer 3	87	408.0		
		Bottom of Boring		87	408.0		
B-106	Water	WATER		0	495.0	29.5	465.5
	CCR	CCR	Layer 1	29.5	465.5	30.5	464.5
	Alluvium	SAP	Layer 2	30.5	464.5	32.5	462.5
	Residuum - Silty Sand	SAP	Layer 2	32.5	462.5	35.5	459.5
	SAP	SAP	Layer 2	35.5	459.5	42.5	452.5
	Auger Refusal	PWR	Layer 3	42.5	452.5		
		Bottom of Boring		42.5	452.5		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
B-107	Water	WATER		0	495.0	20.5	474.5
	CCR	CCR	Layer 1	20.5	474.5	21	474.0
	Topsoil	SAP	Layer 2	21	474.0	22.5	472.5
	Residuum - Clay	SAP	Layer 2	22.5	472.5	30	465.0
	PWR	PWR	Layer 3	30	465.0		
		Bottom of Boring		30.25	464.8		
B-108	Water	WATER		0	495.0	46.8	448.2
	CCR	CCR	Layer 1	46.8	448.2	47.5	447.5
	Topsoil	SAP	Layer 2	47.5	447.5	49	446.0
	Alluvium	SAP	Layer 2	49	446.0	52	443.0
	Residuum - Clay	SAP	Layer 2	52	443.0	58	437.0
	SAP	SAP	Layer 2	58	437.0	85	410.0
	PWR	PWR	Layer 3	85	410.0		
		Bottom of Boring		91	404.0		
B-109	Water	WATER		0	495.0	31	464.0
	CCR	CCR	Layer 1	31	464.0	31.8	463.2
	Alluvium	SAP	Layer 2	31.8	463.2	36	459.0
	Residuum - Sandy Clay	SAP	Layer 2	36	459.0	40.3	454.7
	PWR	PWR	Layer 3	40.3	454.7		
		Bottom of Boring		43.5	451.5		
B-110	Water	WATER		0	495.0	47.8	447.2
	CCR	CCR	Layer 1	47.8	447.2	48.3	446.7
	Topsoil	SAP	Layer 2	48.3	446.7	50.3	444.7
	Residuum - Silt	SAP	Layer 2	50.3	444.7	68.5	426.5
	SAP	SAP	Layer 2	68.5	426.5	78.5	416.5
	PWR	PWR	Layer 3	78.5	416.5		
		Bottom of Boring		87	408.0		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
B-111	Water	WATER		0	495.0	58.4	436.6
	CCR	CCR	Layer 1	58.4	436.6	60	435.0
	Residuum - Sandy Clay	SAP	Layer 2	60	435.0	63	432.0
	SAP	SAP	Layer 2	63	432.0	73	422.0
	PWR	PWR	Layer 3	73	422.0		
		Bottom of Boring		91.5	403.5		
B-112	Water	WATER		0	495.0	42	453.0
	CCR	CCR	Layer 1	42	453.0	43	452.0
	Residuum - Clay, Silty Sand	SAP	Layer 2	43	452.0	48.3	446.7
	Alluvium	SAP	Layer 2	48.3	446.7	54	441.0
	SAP	SAP	Layer 2	54	441.0	81	414.0
	PWR	PWR	Layer 3	81	414.0		
		Bottom of Boring		82.2	412.8		
B-113	Water	WATER		0	495.0	12	483.0
	CCR	CCR	Layer 1	12	483.0	13	482.0
	Residuum - Silt, Silty Sand	SAP	Layer 2	13	482.0	26	469.0
	SAP	SAP	Layer 2	26	469.0	32	463.0
	PWR	PWR	Layer 3	32	463.0		
		Bottom of Boring		40.67	454.3		
B-114	Water	WATER		0	495.0	28.5	466.5
	CCR	CCR	Layer 1	28.5	466.5	29	466.0
	Topsoil	SAP	Layer 2	29	466.0	30	465.0
	Residuum - Clay, Silty Sand	SAP	Layer 2	30	465.0	46	449.0
	PWR	PWR	Layer 3	46	449.0		
		Bottom of Boring		49.5	445.5		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SPT-01	Coal Combustion Byproduct (Ash)	CCR	Layer 1	0	505.31	73	432.31
	SAP	SAP	Layer 2	73	432.31	104	401.31
	Gneiss (moderately to highly weathered)	PWR	Layer 3	104	401.31	113	392.31
	Gneiss (not to moderately weathered, moderately to intensely fractured)	FBR	Layer 4	113	392.31		
		Bottom of Boring		140	365.31		
SPT-02	Coal Combustion Byproduct (Ash)	CCR	Layer 1	0	509.49	3	506.49
	Coal Combustion Byproduct (Gypsum)	CCR	Layer 1	3	506.49	28	481.49
	Coal Combustion Byproduct (Ash)	CCR	Layer 1	28	481.49	73	436.49
	Alluvium	SAP	Layer 2	73	436.49	78	431.49
	SAP	SAP	Layer 2	78	431.49	88.5	420.99
	Gneiss (moderately to highly weathered), PWR	PWR	Layer 3	88.5	420.99	92.5	416.99
	Gneiss (not to slightly weathered, slightly to moderately fractured)	FBR	Layer 4	92.5	416.99		
		Bottom of Boring		114.8	394.69		
SPT-03	Coal Combustion Byproduct (Gypsum)	CCR	Layer 1	0	499.93	17	482.93
	Coal Combustion Byproduct (Ash)	CCR	Layer 1	17	482.93	68	431.93
	SAP	SAP	Layer 2	68	431.93	79.5	420.43
	Gneiss (moderately to completely weathered), PWR	PWR	Layer 3	79.5	420.43	117	382.93
	Gneiss (moderately weathered, slightly to intensely fractured)	FBR	Layer 4	117	382.93		
		Bottom of Boring		146.5	353.43		
SPT-04	Lean Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	540.7	8	532.7
	Sandy Silt	SAP	Layer 2	8	532.7	18	522.7
	SAP	SAP	Layer 2	18	522.7	36	504.7
	Gneiss (not to slightly weathered, unfractured to moderately fractured)	FBR	Layer 4	36	504.7		
		Bottom of Boring		53.9	486.8		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SPT-05	Silty Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	543.43	33	510.43
	Lean Clay	SAP	Layer 2	33	510.43	43	500.43
	Elastic Silt	SAP	Layer 2	43	500.43	48	495.43
	Sandy Silt	SAP	Layer 2	48	495.43	63	480.43
	Highly Weathered Rock	PWR	Layer 3	63	480.43	125	418.43
	Not to Moderately Weathered Rock (slightly to moderately fractured)	FBR	Layer 4	125	418.43		
		Bottom of Boring		132.9	410.53		
SPT-06	Silty Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	540.02	3	537.02
	Sandy Silt	SAP	Layer 2	3	537.02	5.5	534.52
	Silty Sand	SAP	Layer 2	5.5	534.52	14	526.02
	Granitic Gneiss (slightly to highly weathered)	PWR	Layer 3	14	526.02	36	504.02
	Granitic Gneiss (not to slightly weathered, moderately fractured)	FBR	Layer 4	36	504.02		
		Bottom of Boring		43.3	496.72		
SPT-07	Sandy Lean Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	554.51	28	526.51
	Clayey Sand	SAP	Layer 2	28	526.51	33	521.51
	Elastic Silt	SAP	Layer 2	33	521.51	58	496.51
	Sandy Elastic Silt	SAP	Layer 2	58	496.51	65.5	489.01
	Gneiss (moderately to highly weathered)	PWR	Layer 3	65.5	489.01	96.5	458.01
	Granitic Gneiss (slightly to moderately weathered, moderately to intensely fractured)	FBR	Layer 4	96.5	458.01		
		Bottom of Boring		170.1	384.41		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SPT-08	Fat Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	493.11	3	490.11
	Lean Clay	SAP	Layer 2	3	490.11	13	480.11
	Silt	SAP	Layer 2	13	480.11	18	475.11
	Silty Sand	SAP	Layer 2	18	475.11	23	470.11
	Sandy Lean Clay	SAP	Layer 2	23	470.11	33	460.11
	Silt	SAP	Layer 2	33	460.11	38	455.11
	Clayey Sand	SAP	Layer 2	38	455.11	43	450.11
	SAP	SAP	Layer 2	43	450.11	83	410.11
	PWR	PWR	Layer 3	83	410.11	106.5	386.61
	Gneiss (not to moderately weathered, moderately to intensely fractured)	FBR	Layer 4	106.5	386.61		
		Bottom of Boring		144.2	348.91		
SPT-09	Silty Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	505.06	5.5	499.56
	Well-graded Sand with Silt	SAP	Layer 2	5.5	499.56	38	467.06
	Gneiss (not to highly weathered)	PWR	Layer 3	38	467.06	56.5	448.56
	Gneiss (not to slightly weathered, moderately fractured)	FBR	Layer 4	56.5	448.56		
		Bottom of Boring		58.9	446.16		
SPT-10	Residuum - Lean Clay, Silty Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	547.31	18	529.31
	Silt	SAP	Layer 2	18	529.31	23	524.31
	Elastic Silt	SAP	Layer 2	23	524.31	27	520.31
	Silt	SAP	Layer 2	27	520.31	48	499.31
	Silty Sand	SAP	Layer 2	48	499.31	56	491.31
	Gneiss (not to highly weathered)	PWR	Layer 3	56	491.31	67	480.31
	Gneiss (not to slightly weathered, slightly fractured)	FBR	Layer 4	67	480.31		
		Bottom of Boring		74.7	472.61		

Table 3
Borehole Lithology
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Boring ID	Lithologic Description from Boring Log	AECOM Classification	Model Layer	Depth to Top of Unit (ft bgs)	Top of Unit Elevation (ft msl)	Depth to Bottom of Unit (ft bgs)	Bottom of Unit Elevation (ft msl)
SPT-11	Clayey Sand	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	526.69	3	523.69
	Well-graded Sand with Silt	SAP	Layer 2	3	523.69	28	498.69
	PWR, Granitic Gneiss (moderately to highly weathered)	PWR	Layer 3	28	498.69	45.5	481.19
	Granitic Gneiss (not to slightly weathered, slightly to moderately fractured)	FBR	Layer 4	45.5	481.19		
		Bottom of Boring		54.6	472.09		
SPT-12	Lean Clay	RES/SAP	Layer 1: 1 ft Thick Layer 2: Remaining Thickness	0	511.51	13	498.51
	Sandy Silt	SAP	Layer 2	13	498.51	23	488.51
	Sandy Elastic Silt	SAP	Layer 2	23	488.51	28	483.51
	Sandy Silt	SAP	Layer 2	28	483.51	38	473.51
	SAP	SAP	Layer 2	38	473.51	52	459.51
	PWR, Gneiss (slightly to highly weathered)	PWR	Layer 3	52	459.51	66	445.51
	Gneiss (not weathered, slightly to moderately fractured)	FBR	Layer 4	66	445.51		
		Bottom of Boring		69.3	442.21		
S-1	Clayey Silt, Sandy Silt	RES	Layer 1	0		66	
S-2	Clayey Silt, Sandy Silt	RES	Layer 1	0		126	
S-3	Clayey Silt, Sandy Silt	RES	Layer 1	0		101	

RES - Residual Soils (includes Alluvium)
CCR - Coal Combustion Residuals
SAP - Saprolite
PWR - Partially Weathered Rock
FBR - Fractured Bedrock
BH - Borehole
Layer 1 - CCR/Dike Material
Layer 2 - SAP
Layer 3 - PWR
Layer 4 - FBR
NA - Not Available
ft bgs - feet below ground surface
ft msl - feet above mean sea level
Unit - Refers to the strata used to define vertical layers for numerical groundwater model construction

Table 4
Hydraulic Conductivity Data
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Geologic Unit Tested	Screen (ft bgs)		Lithology[1] and Depth of Sample	Test 1 (ft/day)	Test 2 (ft/day)	Source (Slug, Aquifer, Lab)	Kh or Kv	Comments
SGWA-1	SAP			SAP Silt (30'-32')	1.58E-01	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
SGWA-2	PWR	85.4	95.4		0.3817	0.3243	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGWA-3	SAP	40	50		0.0632	0.0354	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWA-4	SAP	50.5	60.5		0.0899	0.0833	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWA-5	SAP	20.2	30.2		0.3232	0.4309	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-6	SAP	15	25		0.0986	0.0961	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-7	PWR	25	35		0.5953	1.9814	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-8	PWR/FBR	30	40		0.5159	3.9402	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-9	SAP	25	35		0.4847	0.3515	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-10	SAP	20	30		0.2035	0.0079	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-11	SAP	30	40		0.1468	0.1809	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-12	SAP	37	47		0.1678	0.1029	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-13	SAP	25	35		0.4167	0.3345	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-14	SAP			SAP Silty Sand (13'-15')	0.0033	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP			SAP Silty Sand (28'-30')	0.0706	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP	24.8	34.8		32	28.75	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	24.8	34.8		9.0920	7.76	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGWC-15	SAP			SAP Silt (35'-37')	1.162	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP	34.8	44.8		17.75	17.75	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	34.8	44.8		3.76	7.65	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGWC-16	SAP	28.8	38.8		9.751	8.45	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	28.8	38.8		2.60	2.67	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGWC-17	SAP	14.1	24.1		4.71	2.649	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
SGWC-18	SAP	34.1	44.1		4.362	4.932	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
SGWC-19	SAP			SAP Clay (25'-27')	7.11E-05	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP			SAP Sand (25'-27')	3.00E-01	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP	24.2	34.2		1.98	2.116	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
SGWC-20	SAP	15	25		0.3883	6.18E-02	Golder monitoring well installation report (3/28/16)	Kh	Field Slug Test, specifies that it is Kh in report
SGWC-21	SAP	14.5	15.5		6.131	-	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
SGWC-22	SAP	36.5	46.5		1.876	1.015	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method

Table 4
Hydraulic Conductivity Data
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Geologic Unit Tested	Screen (ft bgs)		Lithology[1] and Depth of Sample	Test 1 (ft/day)	Test 2 (ft/day)	Source (Slug, Aquifer, Lab)	Kh or Kv	Comments
SGWC-23	SAP			SAP Silty Sand (30'-32')	0.4677	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	PWR	39.3	49.3		11.87	12.22	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	PWR	39.3	49.3		9.901	9.70	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGWC-24	SAP			SAP Silty Sand (25'-27')	0.0706	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
SGWA-25	SAP			SAP Sandy Silt (35'-37')	0.2424	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP	34.6	44.6		7.503	6.759	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	34.6	44.6		2.263	1.93	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-2I	SAP			SAP Silty Sand (25'-27')	2.44E-05	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP			SAP Silty Sand (38'-40')	0.1902	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	FBR	73.9	83.9		0.6279	0.4423	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-5I	FBR	36.6	46.6		60.64	60.64	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	FBR	36.6	46.6		2.58	1.01	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-6S	SAP			SAP Silty Sand (25'-26.5')	0.3657	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP	44.4	54.4		0.3391	0.1341	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-9I	PWR	69.8	79.8		1.345	1.325	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-10S	SAP	24.5	34.5		12.37	9.121	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-11S	PWR	35.5	45.5		5.343	4.148	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-12S	SAP	34	44		14.77	14.33	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP				11.25	7.45	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-13S	SAP	34.9	44.9		7.48	7.866	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	34.9	44.9		5.86	3.82	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-14S	SAP	34.5	44.5		39.38	47.38	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	SAP	34.5	44.5		15.53	18.34	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-14I	SAP			SAP Silty Sand (25'-27')	2.35E-04	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	PWR	84.8	94.8		2.366	2.864	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-15S	SAP	29.7	39.7		12.37	9.121	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-17I	FBR	86.7	96.7		2.532	-	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	FBR				0.4486	0.4143	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-19I/S	RES			RES Clay (10'-12')	0.0323	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP			SAP Silty Sand (20'-22')	2.68E-03	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
PZ-19S	SAP	14.6	24.6		2.052	1.591	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method

Table 4
Hydraulic Conductivity Data
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Geologic Unit Tested	Screen (ft bgs)		Lithology[1] and Depth of Sample	Test 1 (ft/day)	Test 2 (ft/day)	Source (Slug, Aquifer, Lab)	Kh or Kv	Comments
PZ-19I	FBR	61.5	71.5		25.47	28.56	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
	FBR	61.5	71.5		7.36	6.72	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-20I/S	RES			RES Clay (5'-7')	3.03E-03	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
	SAP			SAP Silty Sand (20'-22')	8.42E-06	-	6/5/2015 Lab tests - Cardno ATC	Kv	2015 Lab test , assumed KV due to nature of data collection method
PZ-20I	PWR	69.2	79.2		1.552	0.6878	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-21S	SAP	13	23		1.907	1.394	AQTESOLV files from SCS	Kh	Field Slug Tests conducted 5/26/2015-6/16/2015, assumed Kh due to nature of data collection method
PZ-28I	FBR	59	69		1.628	0.9429	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-32D	FBR	96	126		0.0418	0.006408	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-33I	PWR	66	76		0.6067	0.5697	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
PZ-38	PWR	64	74		0.9437	0.7829	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
SGYP1	FBR				1.3	1.33	Provided in summary table from SCS		
SGYP20	FBR				1.39	4.82	Provided in summary table from SCS		
SGYP3	SAP				0.77	0.91	Provided in summary table from SCS		
SGYP9	SAP				1.45	1.88	Provided in summary table from SCS		
SGYP14	SAP				0.34	0.82	Provided in summary table from SCS		
SGYP29	SAP				6.52	4.25	Provided in summary table from SCS		
SGYP32	SAP				0.82	0.77	Provided in summary table from SCS		
GWA-15	SAP	16.19	26.19		2.604	1.939	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWA-45	SAP	23	33		0.6841	0.6386	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWA-49	SAP	27.5	37.5		0.7649	0.6632	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-2	SAP	44.78	54.78		0.3664	0.2554	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-6	PWR	34.86	44.86		2.561	2.091	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-8	PWR	40.18	50.18		0.4249	0.1333	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-9	SAP	6.79	16.79		0.7177	0.7361	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-18	SAP	46.81	56.81		0.6615	0.6076	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-29	SAP	14	24		2.649	2.476	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
GWC-52	SAP	20	30		2.039	2.082	2017 AECOM Requested Additional Slug Testing	Kh	Field Slug Tests conducted 2017, assumed Kh due to nature of data collection method
LPZ-03	RES			RES Clayey Silt (4'-6')	1.11E-02	-	3/16/2016 Golder Piezometer installation report	Kv	2015 Lab test , assumed KV due to nature of data collection method
LPZ-04	RES			RES Clayey Sand (10'-12')	1.28E-04	-	3/16/2016 Golder Piezometer installation report	Kv	2015 Lab test , assumed KV due to nature of data collection method

RES - Residuum
SAP - Saprolite
PWR - Partially Weathered Rock
FBR - Fractured Bedrock
[1]Lithology determined from boring logs

Table 5
Potentiometric Surface Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well or Piezometer ID	Easting	Northing	Screened in Unit	Potentiometric Surface Elevation (ft msl)													
				5/9/2016	6/13/2016	8/8/2016	11/28/2016	12/15/2016	2/6/2017	4/4/2017	6/19/2017	10/3/2017	3/19/2018	6/4/2018	10/1/2018	3/25/2019	9/9/2019
SGWA-1	2399899.287	1119232.658	SAP/PWR	512.16	510.85	508.14	504.30	506.360	506.52	507.33	506.31	503.43	502.31	505.46	504.93	510.50	505.53
SGWA-2	2399907.288	1119237.111	PWR	512.63	510.98	508.00	504.08	550.700	507.39	508.02	506.61	503.48	503.31	506.67	505.05	511.27	505.45
SGWA-3	2399295.720	1120224.560	SAP	515.96	514.97	512.92	509.93	511.410	512.90	512.40	511.21	509.26	509.15	512.16	509.28	514.05	510.16
SGWA-4	2401124.350	1121478.042	SAP	500.08	500.67	500.63	499.11	497.810	498.22	497.81	499.57	496.76	495.76	495.26	495.12	496.19	497.39
SGWA-5	2397426.720	1118087.173	SAP	493.56	493.24	492.01	489.71	489.120	490.85	490.99	490.68	489.23	488.39	489.97	489.22	493.19	491.19
SGWC-6	2401979.450	1122168.292	SAP	497.34	497.01	495.95	494.65	495.610	495.33	495.64	495.47	494.65	495.12	495.33	494.05	496.17	494.41
SGWC-7	2402259.670	1122669.570	PWR	493.46	493.38	492.60	491.30	491.930	491.60	491.84	491.91	491.18	491.38	491.64	490.80	492.23	491.20
SGWC-8	240.2979.66	1122866.662	PWR	493.67	493.49	492.51	491.23	491.890	491.82	492.05	491.86	491.05	491.42	491.41	490.63	492.48	490.98
SGWC-9	2403455.820	1122635.284	SAP	491.13	490.74	489.93	488.94	489.670	490.07	490.14	489.77	489.13	489.43	489.82	488.77	490.73	488.92
SGWC-10	2404047.170	1121896.649	SAP	494.6	493.96	492.92	492.02	493.600	492.81	492.81	492.27	491.58	492.35	492.16	490.32	493.86	490.29
SGWC-11	2404332.790	1121542.388	SAP	494.05	493.25	492.19	491.47	493.170	493.65	493.44	492.76	492.08	492.93	492.86	490.55	493.37	490.52
SGWC-12	2405009.680	1121576.067	SAP	486.85	486.25	485.09	484.18	485.750	486.12	485.89	485.33	485.67	485.39	485.73	483.82	486.23	482.54
SGWC-13	2405760.640	1121274.076	SAP	478.57	478.42	478.17	478.21	478.750	478.79	478.67	478.31	478.30	478.58	478.47	477.82	478.48	477.17
SGWC-14	2406329.205	1120965.721	SAP	465.81	465.62	465.34	465.49	466.120	466.08	465.97	465.54	465.60	460.08	466.02	465.58	466.13	464.99
SGWC-15	2407092.841	1120191.238	SAP	455.78	454.73	453.44	452.64	454.430	455.61	455.65	454.70	453.64	454.45	454.93	452.86	455.57	452.49
SGWC-16	2407154.726	1119221.306	SAP	436.65	435.34	434.19	433.61	435.520	437.75	436.53	435.08	434.41	435.47	437.20	434.08	436.48	433.43
SGWC-17	2407266.725	1118309.038	SAP	417.44	417.34	417.31	417.38	417.580	417.56	417.54	417.46	417.96	417.37	417.16	417.96	416.76	416.86
SGWC-18	2406930.957	1116946.848	SAP	480.8	479.88	477.91	475.89	480.480	478.65	477.77	476.68	476.81	476.65	477.39	478.82	480.58	477.16
SGWC-19	2406096.077	1116024.669	SAP	463.29	462.49	461.85	461.46	463.150	463.47	462.92	462.47	462.65	462.96	463.73	462.29	463.11	462.18
SGWC-20	2405307.580	1116020.766	SAP	491.66	490.92	490.65	489.55	491.810	492.01	491.09	490.76	490.44	490.71	492.43	490.49	491.11	489.56
SGWC-21	2404197.376	1115410.841	SAP	487.04	486.49	486.04	485.61	487.080	486.85	486.61	486.17	485.79	486.49	486.97	487.14	486.64	485.42
SGWC-22	2403002.383	1115540.735	SAP	493.15	492.18	491.15	490.18	491.870	492.82	492.47	492.25	491.23	492.27	493.35	491.71	494.08	491.48
SGWC-23	2402131.918	1116694.349	PWR	492.28	493.06	491.26	490.02	491.870	491.27	491.91	492.06	491.86	492.19	493.25	493.02	495.70	493.14
SGWA-24	2400742.979	1118125.665	SAP	490.24	489.47	488.54	487.44	489.220	490.05	489.46	488.61	487.66	488.96	490.17	488.18	490.05	487.67
SGWA-25	2400856.491	1120556.049	SAP	501.02	499.85	497.74	495.19	506.700	497.91	498.16	497.14	495.44	496.84	497.67	495.36	499.71	495.56
PZ-2I	2402991.209	1115545.515	FBR	492.45	491.55	490.59	489.65	491.290	492.25	491.88	491.86	490.70	491.72	492.80	491.14	493.45	490.98
PZ-3S	2402532.892	1116085.690	SAP	490.31	489.85	488.88	487.87	NM	489.75	489.78	489.89	489.30	489.95	490.84	489.81	491.81	489.47
PZ-5I	2401817.710	1117484.293	FBR	485.7	484.79	483.21	481.66	483.240	484.42	484.44	483.93	482.95	483.97	484.68	482.88	485.92	483.03
PZ-6S	2401936.713	1117910.804	SAP	496.98	496.91	496.06	494.82	495.260	494.94	495.39	495.38	494.75	494.72	494.97	494.44	496.03	494.79
PZ-9I	2400862.201	1120563.315	PWR	502.61	501.59	499.55	496.90	498.930	498.96	499.33	498.35	496.74	497.67	498.46	496.64	500.91	497.19
PZ-10S	2401768.261	1122338.553	SAP	495.48	494.86	493.52	491.95	493.570	493.38	493.79	493.35	492.25	492.74	493.19	491.80	494.31	492.13
PZ-11S	2402767.326	1123169.252	PWR	492.9	492.66	491.63	490.04	490.710	490.45	490.70	490.51	489.80	489.99	490.25	489.60	491.34	490.03
PZ-12S	2403619.041	1122685.579	SAP	490.31	489.97	489.09	488.07	488.370	488.93	489.14	488.82	488.12	488.45	488.79	487.91	489.81	488.17
PZ-13S	2404228.126	1121956.578	SAP	492.81	491.95	490.44	489.03	491.100	491.16	491.51	490.83	489.70	490.86	491.17	488.91	491.88	488.82
PZ-14S	2404820.413	1121852.656	SAP	490.74	489.75	488.21	486.82	488.880	489.43	489.26	488.42	487.24	488.31	489.40	486.46	489.59	486.26
PZ-14I	2404822.284	1121865.436	PWR	490.81	489.83	488.27	486.87	488.920	NM	489.30	488.46	487.27	488.33	489.37	486.49	489.75	486.30
PZ-15S	2405559.339	1121486.185	SAP	480.75	480.60	480.32	480.23	480.870	NM	NM	488.52	480.34	480.56	480.61	479.65	481.16	479.32

Table 5
Potentiometric Surface Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well or Piezometer ID	Easting	Northing	Screened in Unit	Potentiometric Surface Elevation (ft msl)													
				5/9/2016	6/13/2016	8/8/2016	11/28/2016	12/15/2016	2/6/2017	4/4/2017	6/19/2017	10/3/2017	3/19/2018	6/4/2018	10/1/2018	3/25/2019	9/9/2019
PZ-17I	2407106.304	1120190.514	FBR	455.82	454.77	453.48	452.72	454.440	455.77	455.74	454.71	453.58	454.53	455.02	453.08	455.78	452.45
PZ-19S	2407241.350	1118587.897	SAP	414.05	413.42	412.48	412.23	413.430	414.00	413.87	413.12	412.92	413.71	414.19	412.80	413.86	411.96
PZ-19I	2407251.482	1118589.332	FBR	414.58	413.82	412.71	412.44	413.860	414.56	414.38	413.69	413.18	414.07	414.66	413.08	414.54	414.45
PZ-20I	2407272.337	1118318.135	PWR	415.06	414.91	414.58	414.60	415.030	415.18	415.10	414.91	414.78	415.02	415.09	414.68	414.65	414.09
PZ-21S	2407007.551	1117638.787	SAP	466.52	465.95	464.97	464.37	466.240	466.12	465.77	465.23	465.00	465.50	466.40	465.36	466.37	464.57
PZ-25S	2404569.120	1121846.860	SAP	NM	491.93	490.18	488.50	NM	491.12	491.20	490.35	489.11	490.30	491.10	488.34	491.79	487.23
PZ-25I	2404599.780	1121836.050	SAP	NM	491.68	489.99	488.39	NM	491.42	491.13	490.26	489.09	490.30	491.63	488.24	491.67	488.07
PZ-26S	2405733.540	1121694.340	SAP	NM	475.15	474.34	474.04	NM	476.08	475.46	474.95	474.49	475.38	476.35	474.34	475.98	473.86
PZ-27S	2406040.280	1121560.770	PWR	NM	469.82	468.79	468.89	NM	471.18	470.91	469.73	469.42	470.77	471.45	469.22	471.12	468.37
PZ-27D	2406040.290	1121557.130	FBR	NM	NM	472.38	472.43	NM	474.47	474.17	473.54	473.06	473.98	474.79	472.69	474.48	472.09
PZ-28I	2406377.780	1121390.920	FBR	NM	465.37	464.15	464.17	NM	466.60	466.21	465.40	464.85	466.26	466.74	464.73	466.77	463.93
PZ-29S	2406623.250	1121264.410	PWR	NM	461.11	459.73	459.00	NM	460.93	461.07	NM	459.84	461.03	461.37	459.94	461.96	459.44
PZ-30I	2407083.370	1121069.520	PWR	NM	449.73	447.64	445.63	NM	447.87	448.45	448.04	446.59	447.52	448.71	447.01	450.42	446.54
PZ-31I	2407450.470	1121201.760	FBR	NM	438.47	436.30	433.70	NM	436.13	436.53	435.96	434.54	435.47	437.01	435.28	439.20	435.10
PZ-32S	2407726.520	1121089.930	PWR	NM	441.06	438.49	435.33	NM	437.52	438.68	438.33	436.36	437.49	438.88	437.17	441.54	432.80
PZ-32D	2407726.530	1121086.290	FBR	NM	437.76	435.83	433.81	NM	435.64	436.03	435.46	433.98	435.16	436.38	434.86	438.75	434.83
PZ-33I	2409073.690	1121243.790	PWR	NM	430.02	426.01	423.42	NM	423.93	424.28	423.67	422.44	422.41	423.32	422.88	426.43	424.54
PZ-34S	2409318.430	1121328.320	SAP/PWR	NM	425.41	422.73	420.32	NM	424.01	423.79	NM	NM	421.98	424.09	421.27	426.59	421.58
PZ-35S	2406059.150	1121597.940	PWR	NM	NM	467.55	468.57	NM	471.02	470.71	469.56	469.25	470.53	471.31	468.97	470.97	468.16
PZ-36S	2407248.005	1120400.372	SAP	NM	NM	NM	447.33	NM	NM	NM	NM	NM	NM	NM	445.46	449.49	444.51
PZ-36I	2407269.420	1120407.980	FBR	NM	449.65	447.67	NM	NM	450.91	451.30	NM	448.22	449.17	450.32	447.67	451.30	446.67
PZ-37I	2408430.710	1121176.050	PWR/FBR	NM	435.32	435.13	433.30	NM	432.29	432.13	432.04	431.42	430.62	430.73	431.17	432.42	433.21
PZ-38I	2406354.220	1121475.610	PWR	NM	NM	464.79	464.76	NM	467.06	466.95	466.06	465.48	466.90	467.40	465.36	467.44	464.57
PZ-39S	2407472.377	1120177.256	SAP	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	437.01	441.64	436.06
PZ-40I	2406962.700	1116959.586	Bedrock	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	479.50	481.31	477.75
PZ-41S	2407125.609	1116799.229	SAP	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	463.28	465.78	463.34
PZ-42I	2405293.296	1116014.657	Bedrock	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	492.12	492.85	491.55
PZ-43S	2405509.147	1115598.554	SAP	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	480.25	482.86	478.69
PZ-44I	2404331.321	1121515.271	Bedrock	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	490.11	493.14	490.14
LPZ-01	2398513.820	1117001.205	PWR/Bedrock	NM	NM	NM	494.34	NM	493.81	493.78	493.66	492.36	492.49	492.36	492.52	493.87	494.79
LPZ-02	2398005.122	1119972.841	SAP	NM	NM	NM	507.07	NM	509.73	509.97	508.75	507.50	508.98	509.79	507.79	510.66	506.96
LPZ-03	2398654.995	1117884.312	SAP	NM	NM	NM	503.38	NM	507.03	506.55	505.26	503.61	504.06	507.42	504.23	507.93	504.13
LPZ-04	2397083.414	1115963.419	SAP	NM	NM	NM	443.57	NM	446.13	446.60	445.87	444.20	445.50	447.10	445.50	448.69	445.29
LPZ-05	2399698.567	1115329.895	SAP	NM	NM	NM	476.94	NM	476.31	476.38	476.06	474.96	474.40	474.64	475.57	478.07	477.57
GWC-1	2411556.160	1120077.830	SAP	NM	365.50	364.15	363.64	NM	NM	NM	NM	NM	NM	NM	NM	368.08	364.55
GWC-2	2411493.240	1119816.770	SAP	NM	366.46	365.06	364.38	NM	NM	NM	NM	NM	NM	NM	NM	368.82	365.54
GWC-3	2411202.800	1119614.010	SAP/PWR	NM	380.13	378.53	376.24	NM	NM	NM	NM	NM	NM	NM	NM	382.08	379.69

Table 5
Potentiometric Surface Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
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Well or Piezometer ID	Easting	Northing	Screened in Unit	Potentiometric Surface Elevation (ft msl)													
				5/9/2016	6/13/2016	8/8/2016	11/28/2016	12/15/2016	2/6/2017	4/4/2017	6/19/2017	10/3/2017	3/19/2018	6/4/2018	10/1/2018	3/25/2019	9/9/2019
GWC-4	2411041.630	1119256.250	SAP/PWR	NM	382.29	380.62	378.97	NM	NM	NM	NM	NM	NM	NM	NM	382.97	380.37
GWC-5	2411025.700	1118897.720	SAP/PWR	NM	378.39	376.69	374.79	NM	NM	NM	NM	NM	NM	NM	NM	377.65	376.39
GWC-6	2410872.480	1118575.720	PWR	NM	379.35	377.89	375.50	NM	NM	NM	NM	NM	NM	NM	NM	380.10	377.50
GWC-7	2410645.830	1118243.660	SAP/PWR	NM	377.07	376.04	375.08	NM	NM	NM	NM	NM	NM	NM	NM	377.84	375.72
GWC-8	2410435.830	1117934.460	PWR	NM	378.00	377.52	377.25	NM	NM	NM	NM	NM	NM	NM	NM	385.73	378.03
GWC-9	2410167.440	1117955.520	SAP	NM	378.27	378.67	378.69	NM	NM	NM	NM	NM	NM	NM	NM	379.33	377.92
GWC-10	2410018.160	1118306.840	SAP	NM	381.85	381.26	381.12	NM	NM	NM	NM	NM	NM	NM	NM	382.93	380.94
GWC-11	2409778.450	1118649.130	SAP	NM	384.02	382.89	382.75	NM	NM	NM	NM	NM	NM	NM	NM	385.53	382.89
GWC-12	2409554.100	1118978.200	SAP	NM	387.87	386.23	385.18	NM	NM	NM	NM	NM	NM	NM	NM	389.74	386.31
GWC-13	2409390.710	1119338.880	SAP	NM	389.41	387.85	387.18	NM	NM	NM	NM	NM	NM	NM	NM	390.94	387.92
GWC-14	2409111.270	1119655.060	SAP	NM	390.19	389.37	389.27	NM	NM	NM	NM	NM	NM	NM	NM	391.50	389.86
GWA-15	2409282.000	1120009.780	SAP	NM	402.90	401.60	400.49	NM	NM	NM	NM	NM	NM	NM	NM	404.76	401.33
GWA-16	2409579.590	1120248.790	SAP/PWR	NM	412.19	410.46	408.56	NM	NM	NM	NM	NM	NM	NM	NM	413.71	410.18
GWA-17	2409946.330	1120211.100	PWR	NM	413.14	413.61	412.81	NM	NM	NM	NM	NM	NM	NM	NM	414.93	415.12
GWC-18	2410261.900	1119998.620	SAP	NM	405.14	404.99	404.12	NM	NM	NM	NM	NM	NM	NM	NM	406.52	406.45
GWC-19	2410712.920	1119645.900	PWR	NM	396.44	395.79	394.73	NM	NM	NM	NM	NM	NM	NM	NM	398.21	397.20
GWC-20	2411195.260	1119950.630	SAP/PWR	NM	385.94	384.29	382.04	NM	NM	NM	NM	NM	NM	NM	NM	388.61	386.92
GWA-21	2409462.770	1120675.770	SAP	NM	417.85	416.09	414.28	NM	NM	NM	NM	NM	NM	NM	NM	419.37	415.20
GWA-22	2409473.480	1120962.580	PWR	NM	421.36	419.02	416.78	NM	NM	NM	NM	NM	NM	NM	NM	422.77	417.83
GWA-45	2407889.430	1120669.520	SAP	NM	436.48	433.83	431.26	NM	NM	NM	NM	NM	NM	NM	NM	438.00	432.55
GWA-46	2408235.720	1120783.750	SAP	NM	431.15	429.58	427.42	NM	NM	NM	NM	NM	NM	NM	NM	430.65	428.21
GWA-47	2408585.250	1120862.990	SAP	NM	428.47	427.85	425.95	NM	NM	NM	NM	NM	NM	NM	NM	426.75	426.26
GWA-48	2408939.900	1120953.850	SAP/PWR	NM	426.33	425.24	423.02	NM	NM	NM	NM	NM	NM	NM	NM	425.57	429.74
GWA-49	2409288.700	1121030.470	FBR	NM	422.39	419.98	418.06	NM	NM	NM	NM	NM	NM	NM	NM	423.96	418.72
GWC-29	2408717.920	1119875.660	SAP	NM	393.74	393.55	393.48	NM	NM	NM	NM	NM	NM	NM	NM	394.06	393.40
GWC-50	2408955.890	1119917.650	SAP/PWR	NM	398.21	397.69	397.20	NM	NM	NM	NM	NM	NM	NM	NM	398.72	397.36
GWC-51	2408437.100	1119835.850	SAP	NM	401.13	400.88	400.47	NM	NM	NM	NM	NM	NM	NM	NM	401.49	400.53
GWC-52	2408203.870	1119972.460	SAP	NM	407.86	407.75	407.49	NM	NM	NM	NM	NM	NM	NM	NM	407.93	407.48
GWC-53	2407942.970	1120319.920	SAP	NM	425.55	424.43	422.86	NM	NM	NM	NM	NM	NM	NM	NM	426.16	423.62
AP1R	2406844.49	1118448.308	SAP	440.32	439.92	439.82	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-2	2406844.247	1118466.944	NA	471.09	470.89	471.09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A2A	2406015.43	1116326.17	NA	471.72	471.62	471.12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A2	2406017.332	1116326.835	NA	471.91	471.51	471.11	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-3	2406897.847	1118458.705	NA	436.82	436.72	436.52	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A3A	2406137.451	1116414.664	SAP	474.96	474.86	474.46	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A3	2406140.776	1116416.122	NA	474.49	473.89	472.79	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-4	2407038.779	1118463.806	NA	420.23	420.23	420.23	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Table 5
Potentiometric Surface Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well or Piezometer ID	Easting	Northing	Screened in Unit	Potentiometric Surface Elevation (ft msl)													
				5/9/2016	6/13/2016	8/8/2016	11/28/2016	12/15/2016	2/6/2017	4/4/2017	6/19/2017	10/3/2017	3/19/2018	6/4/2018	10/1/2018	3/25/2019	9/9/2019
AP-5	2407039.246	1118451.359	NA	421.29	420.39	419.99	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A4A	2406349.895	1116540.949	SAP	478.42	477.62	475.92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A5	2405926.811	1116282.42	NA	473.00	472.13	473.50	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-A5A	2405929.02	1116283.697	SAP	473.17	472.08	472.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-6	2405851.502	1121166.564	NA	478.89	478.47	478.56	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-7	2405853.689	1121165.367	NA	478.77	478.44	478.44	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-8R	2407239.783	1118493.325	SAP	411.41	410.95	410.49	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-9R	2407245.201	1118491.264	SAP	412.82	412.32	411.82	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-10	2405882.537	1116253.005	SAP	473.79	473.08	474.08	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-11	2405886.985	1116254.145	PWR	474.59	473.59	475.42	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-12	2405793.374	1116223.681	SAP	476.50	475.75	476.92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-12A	2405827.369	1116370.212	SAP	465.88	465.78	465.78	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-13	2405792.231	1116223.511	NA	476.36	475.86	475.86	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
AP-14	2405789.221	1116221.073	NA	477.67	476.58	476.08	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
B-102A	2405054.068	1117121.557	CCR	NM	498.47	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	500.73	NM
B-102B	2405057.183	1117125.61	CCR	NM	499.63	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	500.43	NM
B-103A	2405594.902	1117590.23	CCR	NM	495.47	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	500.43	NM
B-103B	2405593.689	1117596.145	CCR	NM	499.79	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	500.40	NM
B-104A	2405845.762	1117967.14	CCR	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	499.99	NM
B-104B	2405851.386	1117971.732	CCR	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	500.03	NM

ft msl - feet above mean sea level

SAP - Saprolite

PWR - Partially Weathered Rock

FBR - Fractured Bedrock

NM - Not Measured

Table 6
Model Layer Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Easting	Northing	Ground Surface Elevation (ft msl)	Total Depth (ft)	Fill Top Elevation (ft msl)	Fill Bottom Elevation (ft msl)	CCR Top Elevation (ft msl)	CCR Bottom Elevation (ft msl)	Gypsum Top Elevation (ft msl)	Gypsum Bottom Elevation (ft msl)	Alluvium Top Elevation (ft msl)	Alluvium Bottom Elevation (ft msl)	Residuum Top Elevation (ft msl)	Residuum Bottom Elevation (ft msl)	Saprolite Top Elevation (ft msl)	Saprolite Bottom Elevation (ft msl)	PWR Top Elevation (ft msl)	PWR Bottom Elevation (ft msl)	FBR Top Elevation (ft msl)	FBR Bottom Elevation (ft msl)
SGWA-1	2399899.29	1119232.66	543.97	50.9									543.97	530.97	530.97	493.97				
SGWA-2	2399907.29	1119237.11	587.79	95.8									587.79	568.79	568.79	514.79	514.79			
SGWA-3	2399295.72	1120224.56	542.47	50.0									542.47	526.47	526.47					
SGWA-4	2401124.35	1121478.04	544.25	67.0									544.25	539.25	539.25	481.25	481.25	477.25		
SGWA-5	2397426.72	1118087.17	505.32	30.0									505.32	497.32	497.32					
SGWC-6	2401979.45	1122168.29	507.94	25.0									507.94	502.94	502.94					
SGWC-7	2402259.67	1122669.57	503.02	35.0									503.02	493.02	493.02	486.02	486.02			
SGWC-8	240.2979.66	1122866.66	511.05	40.0									511.05	506.05	506.05	486.05	486.05	476.05	476.05	
SGWC-9	2403455.82	1122635.28	507.61	35.0									507.61	502.61	502.61					
SGWC-10	2404047.17	1121896.65	507.61	30.0									507.61	497.61	497.61					
SGWC-11	2404332.79	1121542.39	508.60	40.0									508.60	498.60	498.60					
SGWC-12	2405009.68	1121576.07	497.35	47.6									497.35	492.35	492.35					
SGWC-13	2405760.64	1121274.08	480.05	35.0									480.05	470.05	470.05					
SGWC-14	2406329.21	1120965.72	476.31	35.3									476.31	463.31	463.31					
SGWC-15	2407092.84	1120191.24	480.04	45.2									480.04	471.04	471.04					
SGWC-16	2407154.73	1119221.31	456.79	40.2									456.79	443.79	443.79					
SGWC-17	2407266.73	1118309.04	414.73	24.5									414.73	401.73	401.73					
SGWC-18	2406930.96	1116946.85	510.17	44.5	510.17	492.17									492.17					
SGWC-19	2406096.08	1116024.67	475.71	34.6	475.71	462.71									462.71					
SGWC-20	2405307.58	1116020.77	501.12	25.0									501.12	491.12	491.12					
SGWC-21	2404197.38	1115410.84	484.61	24.9									484.61	475.61	475.61					
SGWC-22	2403002.38	1115540.74	515.46	50.1	515.46	507.46							507.46	501.46	501.46					
SGWC-23	2402131.92	1116694.35	519.99	49.7									519.99	511.99	511.99	484.99	484.99			
SGWA-24	2400742.98	1118125.67	500.75	40.0									500.75	491.75	491.75					
SGWA-25	2400856.49	1120556.05	423.40	45.0									423.40	404.40	404.40					
PZ-2I	2402991.21	1115545.52	514.99	84.3	514.99	496.99									446.99	446.99	439.99	439.99		
PZ-5I	2401817.71	1117484.29	520.38	47.2	520.38	511.38									511.38	486.38	486.38	484.38	484.38	
PZ-6S	2401936.71	1117910.80	528.93	54.8									528.93	514.93	514.93	474.13	474.13			
PZ-9i	2400862.20	1120563.32	523.25	80.2									523.25	509.25	509.25	462.75	462.75			
PZ-10S	2401768.26	1122338.55	513.85	34.9									513.85	499.85	499.85					
PZ-11S	2402767.33	1123169.25	525.88	45.9											516.88	491.88	491.88	479.98		
PZ-12S	2403619.04	1122685.58	514.53	44.4											505.53	470.13				
PZ-13S	2404228.13	1121956.58	517.08	45.3	517.08	503.08									503.08					
PZ-14S	2404820.41	1121852.66	508.55	44.9											499.55					
PZ-14i	2404822.28	1121865.44	509.61	95.2											500.61	445.61	445.61	423.61	423.61	
PZ-15S	2405559.34	1121486.19	495.95	40.1	495.95	481.95									481.95					
PZ-17I	2407106.30	1120190.51	480.18	97.3									480.18	466.18	466.18	412.18	412.18	391.18	391.18	
PZ-19S	2407241.35	1118587.90	414.66	25.0											405.66					
PZ-19I	2407251.48	1118589.33	414.46	71.9									414.46	401.46	401.46	361.46	361.46			
PZ-20I	2407272.34	1118318.14	414.11	79.6									414.11	401.11	401.11	354.11	354.11			
PZ-21S	2407007.55	1117638.79	470.46	25.0									470.46	456.46	456.46					
PZ-25S	1121846.86	2404569.12	525.47	56.0									525.47							
PZ-25I	1121836.05	2404599.78	525.70	126.0									525.70	469.70	469.70					
PZ-26S	1121694.34	2405733.54	488.88	46.0									488.88							
PZ-27S	1121560.77	2406040.28	472.96	46.0									472.96	440.96			440.96			
PZ-27D	1121557.13	2406040.29	472.41	126.0									472.41	440.41			440.41	416.41	416.41	
PZ-28I	1121390.92	2406377.78	481.32	70.0									481.32	469.32	469.32	434.32	434.32	423.32	423.32	

Table 6
Model Layer Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Easting	Northing	Ground Surface Elevation (ft msl)	Total Depth (ft)	Fill Top Elevation (ft msl)	Fill Bottom Elevation (ft msl)	CCR Top Elevation (ft msl)	CCR Bottom Elevation (ft msl)	Gypsum Top Elevation (ft msl)	Gypsum Bottom Elevation (ft msl)	Alluvium Top Elevation (ft msl)	Alluvium Bottom Elevation (ft msl)	Residuum Top Elevation (ft msl)	Residuum Bottom Elevation (ft msl)	Saprolite Top Elevation (ft msl)	Saprolite Bottom Elevation (ft msl)	PWR Top Elevation (ft msl)	PWR Bottom Elevation (ft msl)	FBR Top Elevation (ft msl)	FBR Bottom Elevation (ft msl)
PZ-29S	1121264.41	2406623.25	488.43	46.0									488.43	466.43			466.43			
PZ-30I	1121069.52	2407083.37	475.42	87.0									475.42	444.42	444.42	419.42	419.42			
PZ-31i	1121201.76	2407450.47	463.80	77.0									463.80	435.80	435.80	424.80	424.80	395.80	395.80	
PZ-32S	1121089.93	2407726.52	462.28	57.0									462.28	456.28	456.28	417.28	417.28			
PZ-32D	1121086.29	2407726.53	462.32	126.5									462.32	456.32	456.32	417.32	417.32	386.32	386.32	
PZ-33I	1121243.79	2409073.69	466.25	76.5									466.25	410.25			410.25			
PZ-34S	1121328.32	2409318.43	440.78	46.0									440.78	425.78	425.78	398.78	398.78			
PZ-35I	1121597.94	2406059.15	474.53	56.0									474.53	438.53	438.53	423.53	423.53			
PZ-36I	1120407.98	2407269.42	478.85	97.0									478.85	457.85	457.85	413.85	413.85	398.85	398.85	
PZ-37I	1121176.05	2408430.71	479.54	72.5									479.54	426.54	426.54	416.54	416.54	412.54	412.54	
PZ-38I	1121475.61	2406354.22	482.10	76.0									482.10	462.10	462.10	429.60	429.60			
GWC-1	2411556.16	1120077.83	371.54	35.0									371.54	352.04	352.04					
GWC-2	2411493.24	1119816.77	376.91	54.5									376.91	357.41	357.41					
GWC-3	2411202.80	1119614.01	407.19	46.0									407.19	378.69	378.69	368.69	368.69			
GWC-4	2411041.63	1119256.25	408.31	39.5									408.31	379.80	379.80	374.81				
GWC-5	2411025.70	1118897.72	393.18	34.8									393.18	364.20			364.20	363.20		
GWC-6	2410872.48	1118575.72	412.36	44.5									412.36	392.40	392.40	382.86	382.86			
GWC-7	2410645.83	1118243.66	414.29	54.5									414.29	398.30	398.30	359.70	359.70			
GWC-8	2410435.83	1117934.46	404.76	54.5									404.76	380.26	380.26	360.26	360.26			
GWC-9	2410167.44	1117955.52	383.02	16.5									383.02							
GWC-10	2410018.16	1118306.84	389.30	35.5									389.30	369.80	369.80					
GWC-11	2409778.45	1118649.13	399.06	30.0									399.06	375.56	375.56					
GWC-12	2409554.10	1118978.20	409.54	33.5									409.54	381.04	381.04					
GWC-13	2409390.71	1119338.88	416.54	39.5									416.54	386.50	386.50					
GWC-14	2409111.27	1119655.06	400.25	25.0									400.30	381.80	381.80					
GWA-15	2409282.00	1120009.78	411.82	25.0									411.80	394.80	394.80					
GWA-16	2409579.59	1120248.79	440.74	55.0									440.74	401.20	401.20	391.24	391.24			
GWA-17	2409946.33	1120211.10	442.72	43.3									442.72	418.20	418.20	413.22	413.22			
GWC-18	2410261.90	1119998.62	436.36	59.5									436.36	383.80	383.80	367.30	367.30			
GWC-19	2410712.92	1119645.90	426.12	70.0									426.10	391.60	391.60	376.60	376.60			
GWC-20	2411195.26	1119950.63	422.82	69.6									422.82	383.32	383.32	363.30	363.30			
GWA-21	2409462.77	1120675.77	419.56	17.0									419.56	409.56	409.56					
GWA-22	2409473.48	1120962.58	441.75	40.0									441.75	417.75	417.75	408.75	408.75			
GWC-29	2408717.92	1119875.66	396.69	25.0									396.69	381.69	381.69					
GWA-45	2407889.43	1120669.52	447.98	33.0									447.98		447.98					
GWA-46	2408235.72	1120783.75	458.10	43.5									458.10		458.10					
GWA-47	2408585.25	1120862.99	462.81	55.0									462.81	429.81	429.81	412.81	412.81			
GWA-48	2408939.90	1120953.85	458.73	72.0									458.73	423.73	423.73	413.73	413.73	393.73	393.73	
GWA-49	2409288.70	1121030.47	429.96	37.0									429.96	405.96	405.96					
GWC-50	2408955.89	1119917.65	404.16	35.0									404.16	379.16	379.16	374.16	374.16			
GWC-51	2408437.10	1119835.85	406.88	27.0									406.88	393.88	393.88					
GWC-52	2408203.87	1119972.46	414.14	30.0									414.14	390.14	390.14					
GWC-53	2407942.97	1120319.92	432.93										432.93		432.93					
LPZ-1	2398512.88	1117001.06	549.84	65.8									549.84	535.34	535.34	491.84	491.84			
LPZ-2	2398005.52	1119972.99	510.46	20.0									510.46							
LPZ-3	2398656.59	1117884.20	511.48	35.0									511.48	481.18	481.18					
LPZ-4	2397083.70	1115963.34	457.83	40.0									457.83	432.83	432.83					

Table 6
Model Layer Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Easting	Northing	Ground Surface Elevation (ft msl)	Total Depth (ft)	Fill Top Elevation (ft msl)	Fill Bottom Elevation (ft msl)	CCR Top Elevation (ft msl)	CCR Bottom Elevation (ft msl)	Gypsum Top Elevation (ft msl)	Gypsum Bottom Elevation (ft msl)	Alluvium Top Elevation (ft msl)	Alluvium Bottom Elevation (ft msl)	Residuum Top Elevation (ft msl)	Residuum Bottom Elevation (ft msl)	Saprolite Top Elevation (ft msl)	Saprolite Bottom Elevation (ft msl)	PWR Top Elevation (ft msl)	PWR Bottom Elevation (ft msl)	FBR Top Elevation (ft msl)	FBR Bottom Elevation (ft msl)
LPZ-5	2399698.73	1115329.72	520.97	103.4									520.97	502.77	502.77	457.97	457.97			
B-102A	2405054.07	1117121.56	504.38	60.0			504.38	444.38												
B-102B	2405057.18	1117125.61	504.44	20.6			504.44	483.84												
B-103A	2405594.90	1117590.23	505.84	60.0			505.84	445.84												
B-103B	2405593.69	1117596.15	525.82	20.0			525.82	505.82												
B-104A	2405845.76	1117967.14	504.16	60.0			504.16	444.16												
B-104B	2405851.39	1117971.73	504.13	20.0			504.13	484.13												
C-102	2405723.34	1115291.08	516.30	139.0									516.30	451.90	516.30	451.90	451.90	402.30		
C-103	2405827.34	1115462.08	504.90	168.5									504.90	443.90	504.90	443.90	443.90	385.50	385.50	
C-104	2405930.34	1115633.08	492.80	149.0									492.80	403.80	492.80	403.80	403.80	366.90	366.90	
C-105	2406034.35	1115804.08	482.70	51.0									482.70		482.70					
C-106	2406138.35	1115975.08	478.60	50.0									478.60		478.60					
C-107	2406269.36	1116126.08	474.70	34.1									474.70	451.70	474.70	451.70	451.70			
C-108	2406403.36	1116274.08	477.90	50.0									477.90		477.90					
C-109	2406537.36	1116422.08	484.30	58.8									484.30	432.30	484.30	432.30	432.30			
C-120	2406901.39	1118490.07	411.00	49.1									411.00	368.00	411.00	368.00	368.00			
C-123	2406933.40	1119069.07	448.40	55.3									448.40	396.40	448.40	396.40	396.40			
C-124	2406933.40	1119269.07	454.60	60.9									454.60	401.60	454.60	401.60	401.60			
C-125	2406933.40	1119469.06	459.90	65.4									459.90	398.90	459.90	398.90	398.90			
C-126	2406933.41	1119669.06	464.70	60.0									464.70	412.20	464.70	412.20	412.20			
C-127	2406933.41	1119869.06	471.60	69.7									471.60	401.90	471.60	401.90	401.90			
C-128	2406933.41	1120069.06	477.40	61.0									477.40	416.40	477.40	416.40	416.40			
C-129	2406933.42	1120869.05	477.00	60.0									477.00		477.00					
C-130	2406933.42	1120469.06	481.70	58.0									481.70	428.70	481.70	428.70	428.70			
C-131	2406933.42	1120669.05	487.70	78.7									487.70	416.70	487.70	416.70	416.70			
C-132	2406933.42	1120869.05	489.30	72.8									489.30	416.50	489.30	416.50	416.50			
C-133	2406933.42	1121069.05	485.50	64.4									485.50	424.50	485.50	424.50	424.50			
C-134	2406933.42	1121269.05	483.90	50.0									483.90	441.40	483.90	441.40	441.40			
C-135	2406741.42	1121317.05	486.30	47.0									486.30	449.30	486.30	449.30	449.30			
C-156	2405746.34	1115167.08	519.40	69.6									519.40	457.40	519.40	457.40	457.40			
C-158	2405955.34	1115488.08	495.40	109.7									495.40	422.40	495.40	422.40	422.40			
C-159	2406076.35	1115674.08	484.80	79.6									484.80	411.80	484.80	411.80	411.80			
C-160	2406057.35	1116034.08	478.80	64.7									478.80	431.80	478.80	431.80	431.80			
C-162	2406398.36	1116154.08	471.10	49.7									471.10	438.10	471.10	438.10	438.10			
C-166	2407108.41	1119383.07	460.60	94.5									460.60	373.60	460.60	373.60	373.60			
C-167	2406746.40	1119342.06	451.50	89.7									451.50	379.50	451.50	379.50	379.50			
C-168	2406782.41	1119762.06	465.20	54.7									465.20	422.20	465.20	422.20	422.20			
C-169	2407130.41	1119792.07	473.30	74.7									473.30	405.30	473.30	405.30	405.30			
C-171	2407059.41	1120160.06	477.80	84.6									477.80	406.80	477.80	406.80	406.80			
C-172	2406794.41	1120554.05	489.80	64.6									489.80	431.80	489.80	431.80	431.80			
C-173	2407046.42	1120575.06	485.10	74.6									485.10	422.60	485.10	422.60	422.60			
C-174	2406738.40	1119195.06	448.10	59.7									448.10	392.10	448.10	392.10	392.10			
C-175	2407129.40	1119128.07	452.70	69.6									452.70	385.70	452.70	385.70	385.70			
C-176	2406699.39	1118588.07	423.00	59.6									423.00	380.50	423.00	380.50	380.50			
C-177	2407152.40	1118698.07	433.80	89.0									433.80	371.80	433.80	371.80	371.80			
C-178	2406641.39	1118452.07	408.90	24.6									408.90	386.90	408.90	386.90	386.90			
C-179	2407218.40	1118458.07	405.10	50.0									405.10	371.60	405.10	371.60	371.60			

Table 6
Model Layer Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Easting	Northing	Ground Surface Elevation (ft msl)	Total Depth (ft)	Fill Top Elevation (ft msl)	Fill Bottom Elevation (ft msl)	CCR Top Elevation (ft msl)	CCR Bottom Elevation (ft msl)	Gypsum Top Elevation (ft msl)	Gypsum Bottom Elevation (ft msl)	Alluvium Top Elevation (ft msl)	Alluvium Bottom Elevation (ft msl)	Residuum Top Elevation (ft msl)	Residuum Bottom Elevation (ft msl)	Saprolite Top Elevation (ft msl)	Saprolite Bottom Elevation (ft msl)	PWR Top Elevation (ft msl)	PWR Bottom Elevation (ft msl)	FBR Top Elevation (ft msl)	FBR Bottom Elevation (ft msl)
SGYP-1	2407053.25	1117510.02	479.43	49.4									479.43	464.43	464.43	444.43	450.93	444.43	444.43	
SGYP-2	2405112.30	1115097.45	449.50	53.0									449.50	434.50	434.50	396.50	396.50			
SGYP-3	2405772.54	1117650.36	460.40	65.0									460.40	455.40	455.40	416.90	416.90			
SGYP-4	2410054.70	1118191.86	384.50	34.0									384.50	376.50	376.50	361.00	361.00			
SGYP-5	2408131.34	1117328.09	474.90	53.5									474.90	441.90	441.90	421.40	421.40			
SGYP-6	2411539.97	1116889.38	456.40	40.3											452.40	431.40	431.40	419.40	419.40	
SGYP-7	2408751.36	1116871.70	447.71	49.0									447.71	423.71	423.71	414.21	414.21			
SGYP-9	2419704.94	1118640.02	396.60	36.5									396.60	385.60	385.60	360.10	363.10			
SGYP-10	2408932.02	1118734.05	424.90	64.0									424.90	399.90	399.90	371.40	371.40			
SGYP-12	2407680.44	1119213.22	437.70	45.0									437.70	404.20	404.20					
SGYP-14	2409400.21	1119068.07	396.60	40.0									396.60	368.10			368.10			
SGYP-15	2410103.16	1119337.26	430.30	58.5									430.30	389.80	389.80	381.80	381.80	371.80		
SGYP-19	2410870.90	1119971.81	446.80	70.1									446.80	408.30	408.30	389.30	389.30	378.80	378.80	
SGYP-20	2409742.53	1119875.57	449.80	64.0									449.80	421.30	421.30	401.30	401.30	397.80	397.80	
SGYP-21	2407517.13	1120120.32	470.20	60.0									470.20	436.70	436.70					
SGYP-22	2408127.27	1120448.20	440.70	40.0									440.70	412.20	412.20					
SGYP-23	2409187.98	1120457.88	435.00	47.5									435.00	409.50	409.50	396.50	396.50			
SGYP-24	2410416.17	1120585.25	459.70	74.0									459.70	416.20	416.20	386.20	386.20			
SGYP-25	2411492.29	1120409.44	371.20	30.0									371.20	352.70	352.70					
SGYP-26	2412871.34	1120499.04	454.70	71.3									454.70	416.20	416.20	396.20	396.20	383.40	383.40	
SGYP-28	2411246.46	1121362.47	430.00	68.5									430.00	391.50	391.50	381.50	381.50			
SGYP-29	2407646.52	1120834.38	454.40	40.0									454.40	425.90	425.90	415.90	415.90			
SGYP-30	2408680.51	1121005.97	468.80	65.0									468.80	415.30	415.30	405.30	405.30			
SGYP-31	2410052.52	1121183.70	462.90	65.3									462.90	409.40	409.40	404.40	404.40			
SGYP-32	2410757.99	1121476.48	444.80	68.0									444.80	396.30	396.30					
SGYP-33	2411511.18	2411511.18	411.90	59.2									411.90	383.40	383.40					
SGYP-34	2413286.60	1119663.64	441.80	63.5									441.80	403.30	403.30	393.30	393.30			
B-100	2407033.15	1118343.84	459.65	100.2	459.65	408.65							408.65	396.15	396.15	375.15	375.15			
B-101	2407266.41	1118355.00	411.42	41.1	411.42	406.42					406.42	396.42			396.42	370.32	370.32			
B-102	2405060.32	1117113.04	504.36	85.0			504.36	435.86							435.86	420.86	420.86			
B-103	2405582.90	1117592.72	505.29	95.0			505.29	423.29			423.29	416.39			416.39	410.29	410.29			
B-104	2405854.52	1117965.60	504.38	93.9			504.38	420.88			420.88	411.38					411.38			
B-105	2404998.90	1120433.00	495.00	85.0			445.50	444.00					444.00	427.50	427.50					
B-105A	2405009.50	1120401.20	495.00	87.0									442.60	427.50	427.50	408.00	408.00			
B-106	2403003.60	1119785.90	495.00	42.5			465.50	464.50			464.50	462.50	462.50	459.50	459.50	452.50	452.50			
B-107	2402037.30	1120366.30	495.00	30.3			474.50	474.00					472.50	465.00			465.00			
B-108	2403754.10	1120563.10	495.00	91.0			448.20	447.50			446.00	443.00	443.00	437.00	437.00	410.00	410.00			
B-109	2403091.20	1122059.00	495.00	43.5			464.00	463.20			463.20	459.00	459.00	454.70			454.70			
B-110	2405728.00	1120234.30	495.00	87.0			447.20	446.70					444.70	426.50	426.50	416.50	416.50			
B-111	2404512.40	1120256.50	495.00	91.5			436.60	435.00					435.00	432.00	432.00	422.00	422.00			
B-112	2403275.50	1119527.30	495.00	82.2			453.00	452.00			446.70	441.00	452.00	446.70	441.00	414.00	414.00			
B-113	2402983.50	1120116.00	495.00	40.7			483.00	482.00					482.00	469.00	469.00	463.00	463.00			
B-114	2403549.70	1121368.90	495.00	49.5			466.50	466.00					465.00	449.00			449.00			
SPT-01	2405487.21	1118279.08	505.31	140.0			505.31	432.31							432.31	401.31	401.31	392.31	392.31	
SPT-02	2404730.36	1116812.56	509.49	114.8			509.49	506.49	506.49	481.49	436.49	431.49			431.49	420.99	420.99	416.99	416.99	
SPT-02	2404730.36	1116812.56	509.49	114.8			481.49	436.49												
SPT-03	2406333.05	1117861.45	499.93	146.5			482.93	431.93	499.93	482.93					431.93	420.43	420.43	382.93	382.93	

Table 6
Model Layer Elevation Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Easting	Northing	Ground Surface Elevation (ft msl)	Total Depth (ft)	Fill Top Elevation (ft msl)	Fill Bottom Elevation (ft msl)	CCR Top Elevation (ft msl)	CCR Bottom Elevation (ft msl)	Gypsum Top Elevation (ft msl)	Gypsum Bottom Elevation (ft msl)	Alluvium Top Elevation (ft msl)	Alluvium Bottom Elevation (ft msl)	Residuum Top Elevation (ft msl)	Residuum Bottom Elevation (ft msl)	Saprolite Top Elevation (ft msl)	Saprolite Bottom Elevation (ft msl)	PWR Top Elevation (ft msl)	PWR Bottom Elevation (ft msl)	FBR Top Elevation (ft msl)	FBR Bottom Elevation (ft msl)
SPT-04	2398535.02	1120931.90	540.70	53.9									540.70	522.70	522.70	504.70			504.70	
SPT-05	2399372.68	1120330.70	543.43	132.9									543.43	480.43			480.43	418.43	418.43	
SPT-06	2396864.08	1117987.02	540.02	43.3									540.02	526.02			526.02	504.02	504.02	
SPT-07	2399101.18	1118720.71	554.51	170.1									554.51	489.01			489.01	458.01	458.01	
SPT-08	2400596.34	1118152.29	493.11	144.2									493.11	450.11	450.11	410.11	410.11	386.61	386.61	
SPT-09	2396216.77	1116500.74	505.06	58.9									505.06	467.06			467.06	448.56	448.56	
SPT-10	2398471.94	1117063.33	547.31	74.7									547.31	529.31	529.31	491.31	491.31	480.31	480.31	
SPT-11	2397675.59	1116287.37	526.69	54.6									526.69	498.69			498.69	481.19	481.19	
SPT-12	2399348.62	1115389.82	511.51	69.3									511.51	473.51	473.51	459.51	459.51	445.51	445.51	

CCR - coal combustion residuals

PWR - partially weathered rock

FBR - fractured bedrock

ft - feet

ft NAVD88 - feet North American Vertical Datum of 1988

Table 7
Slug Testing Data and Results
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Geologic Unit Screened	Test 1 (ft/day)	Test 2 (ft/day)	Average (ft/day)	Source (Slug, Aquifer, Lab)
SGWA-3	SAP	6.32E-02	3.54E-02	0.05	Slug Test
SGWA-4	SAP	8.99E-02	8.33E-02	0.09	Slug Test
SGWA-5	SAP	3.23E-01	4.31E-01	0.38	Slug Test
SGWC-6	SAP	9.86E-02	9.61E-02	0.10	Slug Test
SGWC-9	SAP	4.85E-01	3.51E-01	0.42	Slug Test
SGWC-10	SAP	2.04E-01	7.91E-03	0.11	Slug Test
SGWC-11	SAP	1.47E-01	1.81E-01	0.16	Slug Test
SGWC-12	SAP	1.68E-01	1.03E-01	0.14	Slug Test
SGWC-13	SAP	4.17E-01	3.34E-01	0.38	Slug Test
SGWC-14	SAP	9.09	7.76	8.43	AECOM Analysis 2017 (slug in and slug out)
SGWC-15	SAP	3.76	7.65	5.71	AECOM Analysis 2017 (slug in and slug out)
SGWC-16	SAP	2.60	2.67	2.64	AECOM Analysis 2017 (slug in and slug out)
SGWC-17	SAP	4.71	2.65	3.68	AQTESOLV files from SCS
SGWC-18	SAP	4.36	4.93	4.65	AQTESOLV files from SCS
SGWC-19	SAP	1.98	2.12	2.05	AQTESOLV files from SCS
SGWC-20	SAP	3.88E-01	6.18E-02	0.23	Slug Test
SGWC-21	SAP	6.13	-	6.13	AQTESOLV files from SCS
SGWC-22	SAP	1.88	1.02	1.45	AQTESOLV files from SCS
SGWA-25	SAP	2.26	1.93	2.09	AECOM Analysis 2017 (slug in and slug out)
PZ-6S	SAP	0.34	0.13	0.24	AQTESOLV files from SCS
PZ-12S	SAP	11.25	7.45	9.35	AECOM Analysis 2017 (slug in and slug out)
PZ-13S	SAP	5.86	3.82	4.84	AECOM Analysis 2017 (slug in and slug out)
PZ-14S	SAP	15.53	18.34	16.94	AECOM Analysis 2017 (slug in and slug out)
PZ-19S	SAP	2.05	1.59	1.82	AQTESOLV files from SCS
PZ-21S	SAP	1.91	1.39	1.65	AQTESOLV files from SCS
SGWC-7	PWR	5.95E-01	1.98E+00	1.29	Slug Test
SGWC-23	PWR	9.90	9.70	9.80	AECOM Analysis 2017 (slug in and slug out)
PZ-9I	PWR	1.35	1.33	1.34	AQTESOLV files from SCS
PZ-11S	PWR	5.34	4.15	4.75	AQTESOLV files from SCS
PZ-14I	PWR	2.37	2.86	2.62	AQTESOLV files from SCS
PZ-20I	PWR	1.55	0.69	1.12	AQTESOLV files from SCS
PZ-2I	FBR	0.63	0.44	0.54	AQTESOLV files from SCS

Table 7
Slug Testing Data and Results
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Well ID	Geologic Unit Screened	Test 1 (ft/day)	Test 2 (ft/day)	Average (ft/day)	Source (Slug, Aquifer, Lab)
PZ-5I	FBR	2.58	1.01	1.79	AECOM Analysis 2017 (slug in and slug out)
PZ-19I	FBR	7.36	6.72	7.04	AECOM Analysis 2017 (slug in and slug out)
SGWC-8	PWR/FBR	5.16E-01	3.94E+00	2.23	Slug Test
SGYP1	FBR	1.30	1.33	1.32	SCS Summary Table
SGYP20	FBR	1.39	4.82	3.11	SCS Summary Table
SGYP3	SAP	0.77	0.91	0.84	SCS Summary Table
SGYP9	SAP	1.45	1.88	1.67	SCS Summary Table
SGYP14	SAP	0.34	0.82	0.58	SCS Summary Table
SGYP29	SAP	6.52	4.25	5.39	SCS Summary Table
SGYP32	SAP	0.82	0.77	0.80	SCS Summary Table
GWA-15	SAP	2.60	1.94	2.27	AECOM Analysis 2017 (slug in and slug out)
GWA-45	SAP	0.68	0.64	0.66	AECOM Analysis 2017 (slug in and slug out)
GWA-49	SAP	0.76	0.66	0.71	AECOM Analysis 2017 (slug in and slug out)
GWC-2	SAP	0.37	0.26	0.31	AECOM Analysis 2017 (slug in and slug out)
GWC-6	PWR	2.56	2.09	2.33	AECOM Analysis 2017 (slug in and slug out)
GWC-8	PWR	0.42	0.13	0.28	AECOM Analysis 2017 (slug in and slug out)
GWC-9	SAP	0.72	0.74	0.73	AECOM Analysis 2017 (slug in and slug out)
GWC-18	SAP	0.66	0.61	0.63	AECOM Analysis 2017 (slug in and slug out)
GWC-29	SAP	2.65	2.48	2.56	AECOM Analysis 2017 (slug in and slug out)
GWC-52	SAP	2.04	2.08	2.06	AECOM Analysis 2017 (slug in and slug out)
PZ-17I	FBR	0.45	0.41	0.43	AECOM Analysis 2017 (slug in and slug out)
PZ-28I	FBR	1.63	0.94	1.29	AECOM Analysis 2017 (slug in and slug out)
PZ-32D	FBR	0.04	0.01	0.02	AECOM Analysis 2017 (slug in and slug out)
PZ-33I	PWR	0.61	0.57	0.59	AECOM Analysis 2017 (slug in and slug out)
PZ-38	PWR	0.94	0.78	0.86	AECOM Analysis 2017 (slug in and slug out)
SGWA-2	PWR	0.38	0.32	0.35	AECOM Analysis 2017 (slug in and slug out)

SAP - Saprolite
PWR - Partially Weathered Rock
FBR - Fractured Bedrock
ft/day - feet per day

Table 8
Groundwater Model Summary Report - AP-1
Model Input Parameters
Plant Scherer
Monroe County, Georgia

Parameter	Range of Reported Values	Average	Geometric Mean	Unit	Source	Reference	Range of Values in Model	Units	Comment
Layer 1 CCR Material Hydraulic Conductivity									
Horizontal	0.03 to 1.62	0.38		ft/day	pore pressure dissipation tests	3	1.306 to 4.08	ft/day	adjusted during calibration
Vertical[2]	0.06 to 1.08	0.35		ft/day	laboratory testing	3	0.408 to 0.1306	ft/day	adjusted during calibration
Layer 1 Dike Material Hydraulic Conductivity									
Horizontal	NR			NA	assumed	NA	0.01 to 0.0064	ft/day	adjusted during calibration
Vertical	NR			NA	assumed	NA	0.0008 to 0.005	ft/day	adjusted during calibration
Layer 2 Saprolite Hydraulic Conductivity									
Horizontal	0.05 to 16.94	2.65	1.01	ft/day	slug tests	1	0.0016 to 9.0	ft/day	adjusted during calibration
Vertical	0.000008 to 1.62	0.18	0.01	ft/day	laboratory testing	2	0.0016 to 1.8	ft/day	adjusted during calibration
Layer 3 PWR Hydraulic Conductivity									
Horizontal	0.28 to 9.8	2.3	1.41	ft/day	slug tests	1	0.193 to 4.0	ft/day	adjusted during calibration
Vertical	NR			NA	NA	NA	0.033 to 0.8	ft/day	
Layer 4 FBR Hydraulic Conductivity									
Horizontal	0.02 to 7.04	1.94	0.88	ft/day	slug tests	1	0.245 to 1.6	ft/day	adjusted during calibration
Vertical	NR			NA	NA	NA	0.123 to 1.6	ft/day	
Effective Porosity									
Layer 1 CCR Material	0.45[3]			unitless	calculated	NA	0.25	unitless	assumed
Layer 1 Berm Material	0.30[3]			unitless	calculated	NA	0.30	unitless	assumed
Layer 2 Saprolite	0.41[3]			unitless	calculated	NA	0.25	unitless	assumed
Layer 3 PWR	0.15			unitless	calculated	NA	0.25	unitless	assumed
Layer 4 FBR	0.03			unitless	assumed	NA	0.03	unitless	assumed
Recharge									
Recharge-Background (as percent annual precipitation)	16% to 24% Annual Precip			%	literature	4	10.15% to 14.58%	%	adjusted during calibration
Background	NA			NA	NA	NA	0.00137	ft/day	Based on 45.68 in/yr (0.0104 ft/day) annual preciptation[5]
CCR Material	NA			NA	NA	NA	0.00106 to 0.00152	ft/day	adjusted during calibration
Buildings and Landfill Covers	NA			NA	NA	NA	0.00	ft/day	assumed
Evaporation - Transpiration									
Evaporation - Transpiration ET Background (as percentage of annual Pan Evaporation) Extinction Depth in Feet	varies			Inches/Year and Feet	literature	6	0% to 59% (extinction depth range 0 ft to 4 ft)	%	Based on 57 inches per year (0.013 ft/day) Pan Evaporation rate and adjusted during calibration[6]
Brush and Trees	NA			NA	NA	NA	0.0077 (extinction depth: 4 ft)	ft/day	adjusted during calibration
CCR Material	NA			NA	NA	NA	0.001 (extinction depth: 1 ft)	ft/day	adjusted during calibration
Buildings/Paved Surfaces and Surface Waters	NA			NA	NA	NA	0 (extinction depth: 0 ft)	ft/day	adjusted during calibration

9 ft/day was used for alluvial material along the Ocmulgee River.
Four residuum samples were excluded because of their shallow depth.
Effective porosity was estimated from literature values.
(1) Slug Testing Data and Results (Table 7 of this Report)
(2) Cardno ATC lab tests of 6/5/2016 and the Golder Piezometer Installation report of 3/16/2016
(3) Calculated from field from Phase II Closure Study
(4) Daniel, Charles C., III and N. Bonar Sharpless, CAPE FEAR RIVER BASIN STUDY, North Carolina Department of Natural Resources and Community Development and U.S. Water Resources Council, 1983.
(5) http://www.ncdc.noaa.gov/land-based-station-data/climate-normals/1981-2010-normals-data
(6) https://site.extension.uga.edu/climate/2016/07/evapotranspiration-and-evaporation-data-for-georgia/

Table 9
Model Hydraulic Conductivity Zones
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Zone #	Kx (ft/day)	Ky (ft/day)	Kv (ft/day)	Kh : Kv	Layer	Lithology
1	0.38	0.38	0.070	5.49	2	Background
2	4.08	4.08	0.408	10.00	1	CCR
3	0.01	0.01	0.005	2.00	1	East Dike
4	0.32	0.32	0.064	5.00	2	NNE Edge Area
5	0.10	0.10	0.020	5.00	2	NE Gypsom Cell
6	3.00	3.00	0.144	20.85	2	NE of AP-1
7	0.50	0.50	0.100	5.00	2	ENE of AP-1
8	3.04	3.04	0.608	5.00	2	Along Berry Crk.
9	9.00	9.00	1.800	5.00	2	Along Ocmulgee R.
10	5.00	5.00	1.000	5.00	2	Along N Berry Crk.
11	1.04	1.04	0.176	5.91	2	SE of AP-1
12	2.35	2.35	0.470	5.00	2	SW Background
13	0.12	0.12	0.004	28.90	2	SE of AP-1
14	0.80	0.80	0.100	8.00	2	NW of AP-1
15	0.72	0.72	0.144	5.00	2	N of AP-1
16	0.002	0.002	0.002	1.00	2	Recycle Pond Dam
17	0.15	0.15	0.028	5.49	2	N side AP-1
18	1.31	1.31	0.131	10.00	1	CCR
19	0.0064	0.0064	0.00128	5.00	1	East Dike
20	0.33	0.33	0.033	10.00	3	W Background
21	0.19	0.19	0.038	5.00	3	NNE Area
22	2.40	2.40	0.048	50.00	3	NE Area
23	4.00	4.00	0.800	5.00	3	South
24	0.68	0.68	0.136	5.00	3	SE AP-1 Area
25	1.60	1.60	0.320	5.00	3	NW Area
26	0.31	0.31	0.031	10.00	2	Below CCR
27	17.00	17.00	17.000	1.00	1	Knob Area/Surficial Soils Outside of AP-1
28	0.41	0.41	0.082	5.00	3	East
29	0.77	0.77	0.102	7.50	2	NE of AP-1
30	0.25	0.25	0.123	1.99	4	E Background
31	0.64	0.64	0.205	3.14	4	N Area
32	1.60	1.60	1.600	1.00	4	SW Area
33	0.40	0.40	0.160	2.50	4	S & SE Area
34	0.30	0.30	0.030	10.00	2	NE Edge of AP-1
35	0.49	0.49	0.250	1.96	4	W Area
36	0.65	0.65	0.110	5.91	2	SW Side of AP-1
37	0.008	0.008	0.0008	10.00	1	East Dike
38	0.20	0.20	0.020	10.00	2	Beneath Dike
39 (pre-closure)/ 40(post-closure)	17.00	17.00	17.000	1.00	1	Pond outside of CCR/Surficial Soils
39 (post-closure)	0.002	0.002	0.0006	3.72		North Berm

Zone #: Hydraulic Conductivity Zone Number
K_x: Horizontal hydraulic condictivity in east-west direction
K_y: Horizontal hydraulic condictivity in north-south direction
K_h: Horizontal hydraulic conductivity
K_v: Vertical hydraulic conductivity

Table 10
Model Calibration Statistics
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe Country, Georgia

Layer 1-CCR/Dike Material			
Well ID	Observed (ft msl)	Simulated (ft msl)	Residual (ft)
B-102B	499.63	498.67	0.96
B-103B	499.79	498.84	0.95

Layer 2-Saprolite			
Well ID	Observed (ft msl)	Simulated (ft msl)	Residual (ft)
GWA-15	402.90	401.46	1.44
GWA-21	417.85	423.06	-5.21
GWA-45	436.48	435.59	0.89
GWA-46	431.15	429.52	1.63
GWA-47	428.47	426.03	2.44
GWA-49	422.39	423.97	-1.58
GWC-1	365.50	368.77	-3.27
GWC-10	381.85	381.14	0.71
GWC-11	384.02	383.69	0.33
GWC-12	387.87	386.29	1.58
GWC-13	389.41	388.56	0.85
GWC-14	390.19	390.19	0.00
GWC-18	405.14	412.14	-7.00
GWC-2	366.46	370.43	-3.97
GWC-29	393.74	395.14	-1.40
GWC-4	382.29	381.78	0.51
GWC-5	378.39	378.44	-0.05
GWC-51	401.13	400.58	0.55
GWC-52	407.86	407.71	0.15
GWC-53	425.55	425.26	0.29
GWC-7	377.07	378.89	-1.82
GWC-9	378.27	379.28	-1.01
PZ-10S	494.86	492.15	2.71
PZ-12S	489.97	490.44	-0.47
PZ-13S	491.95	492.46	-0.51
PZ-14S	489.75	488.65	1.10
PZ-15S	480.60	480.25	0.35
PZ-19S	413.42	412.34	1.08
PZ-21S	465.95	466.90	-0.95
PZ-25I	491.68	490.95	0.73
PZ-25S	491.93	491.10	0.83
PZ-26S	475.15	473.05	2.10
PZ-6S	496.91	496.54	0.37
SGWA-1	510.85	511.46	-0.61
SGWA-24	489.47	487.87	1.60
SGWA-25	499.85	500.73	-0.88
SGWA-3	514.97	514.12	0.85
SGWA-4	500.67	499.09	1.58
SGWC-10	493.96	494.07	-0.11
SGWC-11	493.25	494.74	-1.49
SGWC-12	486.25	488.83	-2.58
SGWC-13	478.42	476.46	1.96
SGWC-14	465.62	466.77	-1.15
SGWC-15	454.73	457.68	-2.95
SGWC-16	435.34	438.20	-2.86
SGWC-17	417.34	413.46	3.88
SGWC-18	479.88	480.54	-0.66
SGWC-19	462.49	464.76	-2.27
SGWC-20	490.92	487.71	3.21
SGWC-21	486.49	484.21	2.28
SGWC-22	492.18	490.71	1.47
SGWC-6	497.01	495.29	1.72
SGWC-9	490.74	492.62	-1.88

Layer 3-PWR			
Well ID	Observed (ft msl)	Simulated (ft msl)	Residual (ft)
GWA-16	412.19	414.70	-2.51
GWA-17	413.14	417.11	-3.97
GWA-22	421.36	423.39	-2.03
GWC-19	396.44	395.29	1.15
GWC-20	385.94	383.69	2.25
GWC-3	380.13	381.45	-1.32
GWC-50	398.21	396.10	2.11
GWC-6	379.35	379.64	-0.29
GWC-8	378.00	378.83	-0.82
PZ-11S	492.66	490.92	1.74
PZ-14i	489.83	487.96	1.87
PZ-20I	414.91	413.90	1.01
PZ-27S	469.82	466.05	3.77
PZ-29S	461.11	457.94	3.17
PZ-30S	449.73	451.92	-2.19
PZ-32S	441.06	438.04	3.02
PZ-33S	430.02	423.54	6.48
PZ-34S	425.41	422.32	3.09
PZ-9i	501.59	500.48	1.11
SGWC-23	493.06	489.66	3.40
SGWC-7	493.38	492.73	0.65

Layer 4-FBR			
Well ID	Observed (ft msl)	Simulated (ft msl)	Residual (ft)
GWA-48	426.33	423.70	2.63
PZ-5I	484.79	492.11	-7.32
PZ-2I	491.55	490.19	1.36
PZ-28I	465.37	460.99	4.38
PZ-17I	454.77	457.21	-2.44
PZ-19I	413.82	413.23	0.59
PZ-36I	449.65	452.09	-2.44
PZ-31I	438.47	441.47	-3.00
PZ-32D	437.76	437.63	0.13
SGWC-8	493.49	494.31	-0.82

Summary of Calibration Statistics

	All	Layer 1	Layer 2	Layer 3	Layer 4
Residual Mean	0.13	0.96	-0.10	1.03	-0.69
Res. Std. Dev.	2.36	0.00	2.07	2.46	3.14
Sum of Squares	482	1.83	227.0	149.9	103.4
Abs. Res. Mean	1.85	0.96	1.58	2.28	2.51
Min. Residual	-7.32	0.95	-7.00	-3.97	-7.32
Max. Residual	6.48	0.96	3.88	6.48	4.38
Max Observed	514.97	499.79	514.97	501.59	493.49
Min Observed	365.50	499.63	365.50	378.00	413.82
Range	149.47	0.16	149.47	123.59	79.67
Std/Range	1.58%	2.5%	1.38%	1.99%	3.94%
ARM/Range	1.24%	597.2%	1.06%	1.85%	3.15%
Count:	86	2	53	21	10

Table 11
Auto Sensitivity Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Horizontal Conductivity Zones, Base RSS: 482.12 ft^2

Layer	Layer 1						
K_h (ft/day)	4.08	0.01	1.3056	0.0064	17	0.008	17
Zone ID	K_h2	K_h3	K_h18	K_h19	K_h27	K_h37	K_h39
Max:	492.60	485.57	488.71	482.21	482.32	482.28	482.47
Min:	479.58	480.56	480.36	482.09	482.10	481.79	481.96
Range:	13.02	5.01	8.35	0.12	0.22	0.48	0.51
+ Delta	2.54	1.56	1.75	0.03	0.02	0.32	0.16
% Delta	0.53%	0.32%	0.36%	0.01%	0.00%	0.07%	0.03%

Layer	Layer 2																			
K_h (ft/day)	0.384	0.32	0.1	3.003	0.500	3.04	9	5	1.04	2.35	0.119	0.8	0.72	0.002	0.154	0.307	0.768	0.3	0.65	0.2
Zone ID	K_h1	K_h4	K_h5	K_h6	K_h7	K_h8	K_h9	K_h10	K_h11	K_h12	K_h13	K_h14	K_h15	K_h16	K_h17	K_h26	K_h29	K_h34	K_h36	K_h38
Max:	527.78	541.10	501.73	766.01	496.88	551.45	482.12	513.17	507.58	550.93	524.94	538.44	958.69	482.12	507.40	515.60	656.51	488.77	500.40	488.28
Min:	469.50	469.97	452.49	472.02	480.31	482.12	482.12	470.51	481.55	482.12	480.08	482.12	482.12	482.12	480.35	474.79	482.12	481.14	482.12	479.48
Range:	58.28	71.13	49.24	294.00	16.57	69.34	0.00	42.66	26.03	68.81	44.86	56.33	476.58	0.00	27.04	40.81	174.39	7.63	18.28	8.80
+ Delta	12.61	12.15	29.62	10.10	1.81	0	0	11.60	0.56	0	2.03	0	0	0.0002	1.76	7.32	0	0.98	0	2.64
% Delta	2.65%	2.42%	6.04%	1.84%	0.37%	0.00%	0.00%	2.37%	0.12%	0.00%	0.42%	0.00%	0.00%	0.00%	0.37%	1.53%	0.00%	0.20%	0.00%	0.54%

Layer	Layer 3							Layer 4				
K_h (ft/day)	0.33	0.192	2.40	4.00	0.680	1.60	0.412	0.25	0.64	1.60	0.40	0.49
Zone ID	K_h20	K_h21	K_h22	K_h23	K_h24	K_h25	K_h28	K_h30	K_h31	K_h32	K_h33	K_h35
Max:	608.56	537.87	2489.92	490.05	534.03	650.97	495.58	789.82	908.06	535.05	489.49	855.51
Min:	482.12	443.43	482.12	477.00	479.93	472.01	478.45	440.74	470.14	481.54	478.72	482.12
Range:	126.45	94.45	2,007.8	13.05	54.11	178.96	17.14	349.08	437.92	53.51	10.77	373.39
+ Delta	0	38.69	0	5.11	2.19	10.11	3.67	41.38	11.98	0.57	3.40	0
% Delta	0.00%	7.66%	0.00%	1.07%	0.46%	2.14%	0.75%	7.15%	2.55%	0.12%	0.71%	0.00%

Vertical Conductivity Zones, Base RSS: 482.12 ft^2

Layer	Layer 1						
K_v (ft/day)	0.408	0.005	0.131	0.001	17	0.0008	17
Zone ID	K_v2	K_v3	K_v18	K_v19	K_v27	K_v37	K_v39
Max:	482.30	501.42	483.30	482.30	482.12	484.69	482.12
Min:	482.04	474.61	479.66	482.01	482.12	479.94	482.11
Range:	0.26	26.81	3.65	0.29	0.002	4.75	0.01
+ Delta	0.07	7.51	2.46	0.11	0.0006	2.18	0.01
% Delta	0.02%	1.57%	0.51%	0.02%	0.00%	0.45%	0.00%

Layer	Layer 2																			
K_v (ft/day)	0.070	0.064	0.02	0.144	0.100	0.608	1.8	1	0.176	0.47	0.004	0.1	0.144	0.002	0.028	0.031	0.102	0.03	0.11	0.02
Zone ID	K_v1	K_v4	K_v5	K_v6	K_v7	K_v8	K_v9	K_v10	K_v11	K_v12	K_v13	K_v14	K_v15	K_v16	K_v17	K_v26	K_v29	K_v34	K_v36	K_v38
Max:	484.98	485.31	501.65	563.86	482.34	482.26	482.12	482.12	482.27	482.41	490.93	484.27	482.87	482.12	512.56	486.62	486.48	482.37	485.82	482.40
Min:	476.05	481.50	475.79	473.03	481.97	481.71	482.12	482.11	481.91	482.05	482.12	481.12	481.76	482.12	481.09	478.83	478.33	481.58	480.26	481.77
Range:	8.92	3.81	25.86	90.83	0.37	0.55	0.0004	0.01	0.36	0.36	8.82	3.15	1.11	0.001	31.47	7.79	8.15	0.79	5.56	0.62
+ Delta	6.06	0.62	6.33	9.09	0.14	0.40	0.0004	0.01	0.21	0.07	0	1.00	0.36	0.000	1.02	3.28	3.79	0.53	1.86	0.34
% Delta	1.26%	0.13%	1.30%	1.92%	0.03%	0.08%	0.00%	0.00%	0.04%	0.01%	0.00%	0.21%	0.07%	0.00%	0.21%	0.68%	0.79%	0.11%	0.38%	0.07%

Layer	Layer 3							Layer 4				
K_v (ft/day)	0.033	0.0384	0.048	0.8	0.136	0.32	0.0824	0.123	0.2048	1.6	0.16	0.25
Zone ID	K_v20	K_v21	K_v22	K_v23	K_v24	K_v25	K_v28	K_v30	K_v31	K_v32	K_v33	K_v35
Max:	486.13	491.56	496.48	482.14	482.18	482.99	484.31	484.43	482.12	482.16	482.19	482.57
Min:	480.87	478.75	479.66	482.05	481.82	480.03	480.60	481.38	482.00	481.98	481.98	480.83
Range:	5.27	12.81	16.82	0.09	0.36	2.96	3.71	3.05	0.12	0.18	0.21	1.74
+ Delta	1.25	3.36	2.46	0.07	0.30	2.08	1.51	0.74	0.12	0.14	0.14	1.28
% Delta	0.26%	0.69%	0.51%	0.01%	0.06%	0.43%	0.31%	0.15%	0.02%	0.03%	0.03%	0.27%

Drain Reach Conductance Values, Base RSS: 482.12 ft^2

DrnCond (ft^2/day)	2	2	2	15	4	5	4	4	4	4	4	4	4	4	4	10	4	1	2	2	1
Reach #	100	101	102	110	112	114	116	200	201	202	205	206	207	208	209	210	211	212	300	301	302
Max:	482.12	482.12	482.28	482.12	482.12	482.20	482.16	482.12	482.13	482.21	482.13	482.12	482.22	482.12	482.34	487.13	482.50	482.12	482.12	482.13	482.14
Min:	482.12	482.12	482.05	482.11	482.12	482.07	482.00	482.10	482.03	481.90	482.09	482.11	481.89	482.12	481.63	479.20	481.24	482.12	482.12	482.11	482.11
Range:	0.00	0.00	0.23	0.01	0.0	0.13	0.15	0.01	0.10	0.31	0.04	0.00	0.33	0.00	0.71	7.93	1.26	0.00	0.00	0.01	0.04
+ Delta	0.000	0.000	0.065	0.002	0.000	0.042	0.113	0.012	0.086	0.218	0.025	0.001	0.227	0.000	0.487	2.916	0.877	0.000	0.000	0.004	0.010
% Delta	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.02%	0.00%	0.02%	0.05%	0.01%	0.00%	0.05%	0.00%	0.10%	0.61%	0.18%	0.00%	0.00%	0.00%	0.00%

DrnCond (ft^2/day)	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	2	2
Reach #	303	304	305	306	307	308	309	310	311	312	313	500	501	502	503	600	601	602	603	604	605
Max:	482.34	482.39	482.49	482.22	482.12	482.12	482.12	482.12	482.12	482.12	482.12	482.24	482.20	482.12	485.70	482.24	482.51	482.13	482.14	482.12	482.12
Min:	482.03	482.02	481.97	482.08	482.11	482.12	482.12	482.12	482.12	482.12	482.12	482.05	482.06	482.12	480.72	481.92	481.30	482.08	482.07	482.10	482.11
Range:	0.31	0.37	0.51	0.14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.14	0.00	4.98	0.31	1.21	0.05	0.07	0.03	0.00
+ Delta	0.084	0.097	0.141	0.039	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.063	0.055	0.000	1.395	0.194	0.817	0.038	0.043	0.017	0.001
% Delta	0.02%	0.02%	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.29%	0.04%	0.17%	0.01%	0.01%	0.00%	0.00%

River Reach Conductance Values, Base RSS: 482.12 ft^2

Riv Cond (ft^2/day)	10	1	4	12	4	1	10	10	4	4	4	8	4	4	4	4	4	4	4	4	4	4	4
Reach #	1	2	3	4	5	6	7	8	31	32	34	40	50	51	52	53	54	55	56	57	58	59	60
Max:	482.12	482.16	482.12	482.12	482.12	482.23	482.12	482.12	482.12	482.12	482.12	482.12	482.12	482.12	482.12	482.13	482.13	482.12	482.12	482.12	482.12	482.12	482.12
Min:	482.12	482.11	482.12	482.11	482.11	481.80	482.10	482.11	482.12	482.12	482.12	482.12	482.12	482.12	482.12	482.11	481.99	482.12	482.12	482.12	482.12	482.12	482.12
Range:	0.000	0.056	0.000	0.005	0.002	0.435	0.016	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.139	0.000	0.000	0.000	0.000	0.000	0.000
+ Delta	0.000	0.008	0.0	0.004	0.001	0.318	0.012	0.001	0.0	0.0	0.0	0.000	0.000	0.000	0.000	0.009	0.124	0.000	0.000	0.000	0.000	0.000	0.000
% Delta	0.00%	0.0%	0.0%	0.00%	0.00%	0.07%	0.00%	0.00%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Riv Cond (ft^2/day)	4	4	4	10	10	3	3	3	3	3	4	3	3	3	3	1	0	4	4	4	4	4	4
Reach #	61	62	63	100	101	700	701	702	704	705	706	707	708	721	722	800	801	900	901	902	903	904	905
Max:	482.12	482.12	482.12	482.12	482.12	482.12	482.12	483.82	482.97	482.58	500.00	482.40	482.93	482.12	482.13	482.12	482.15	482.12	482.12	482.12	482.12	482.12	482.12
Min:	482.12	482.12	482.12	482.12	482.12	482.12	482.11	481.59	481.94	482.01	474.09	481.89	481.70	482.11	482.11	482.11	482.06	482.12	482.12	482.12	482.12	482.12	482.12
Range:	0.000	0.000	0.001	0.000	0.001	0.000	0.002	2.231	1.025	0.568	25.910	0.505	1.228	0.006	0.024	0.010	0.087	0.000	0.001	0.001	0.001	0.001	0.001
+ Delta	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.530	0.173	0.104	8.024	0.226	0.416	0.001	0.008	0.007	0.055	0.000	0.000	0.000	0.000	0.000	0.000
% Delta	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.11%	0.04%	0.02%	1.68%	0.05%	0.09%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 11
Auto Sensitivity Summary
Groundwater Model Summary Report - AP-1
Plant Scherer
Monroe County, Georgia

Recharge Zones, Base RSS: 482.12 ft^2			
Recharge (ft/day)	0.00152	0.00137	0.00106
R Zone	7	9	10
Max:	833.74	9621.57	483.18
Min:	482.12	482.12	479.57
Range:	351.63	9,139.5	3.61
+ Delta	0	0	2.55
% Delta	0.0%	0.0%	0.53%

Evapotranspiration Zones Base RSS: 482.12 ft^2		
ET (ft/day)	0.00100	0.00768
ET Zone	2	3
Max:	483.31	617.94
Min:	480.96	470.40
Range:	2.35	147.54
+ Delta	1.16	11.71
% Delta	0.24%	2.49%

Sensitivity Ranking % of Base RSS (482.12 ft^2)					
12	Kz	Min	Max	RSS ft^2	Rating
(count)	(count)				
15	34	0%	5%	24.11	slight
13	2	5%	22%	106.07	moderate
6	0	22%	50%	241.06	high
2	0	> 50%			very high

Horizontal Conductivity Zones - all			
	RSS	Current RSS	Difference
Max	2489.919	482.12	2007.8
Min	440.7384		-41.38
Range	2049.181		--
Average	520.0448		

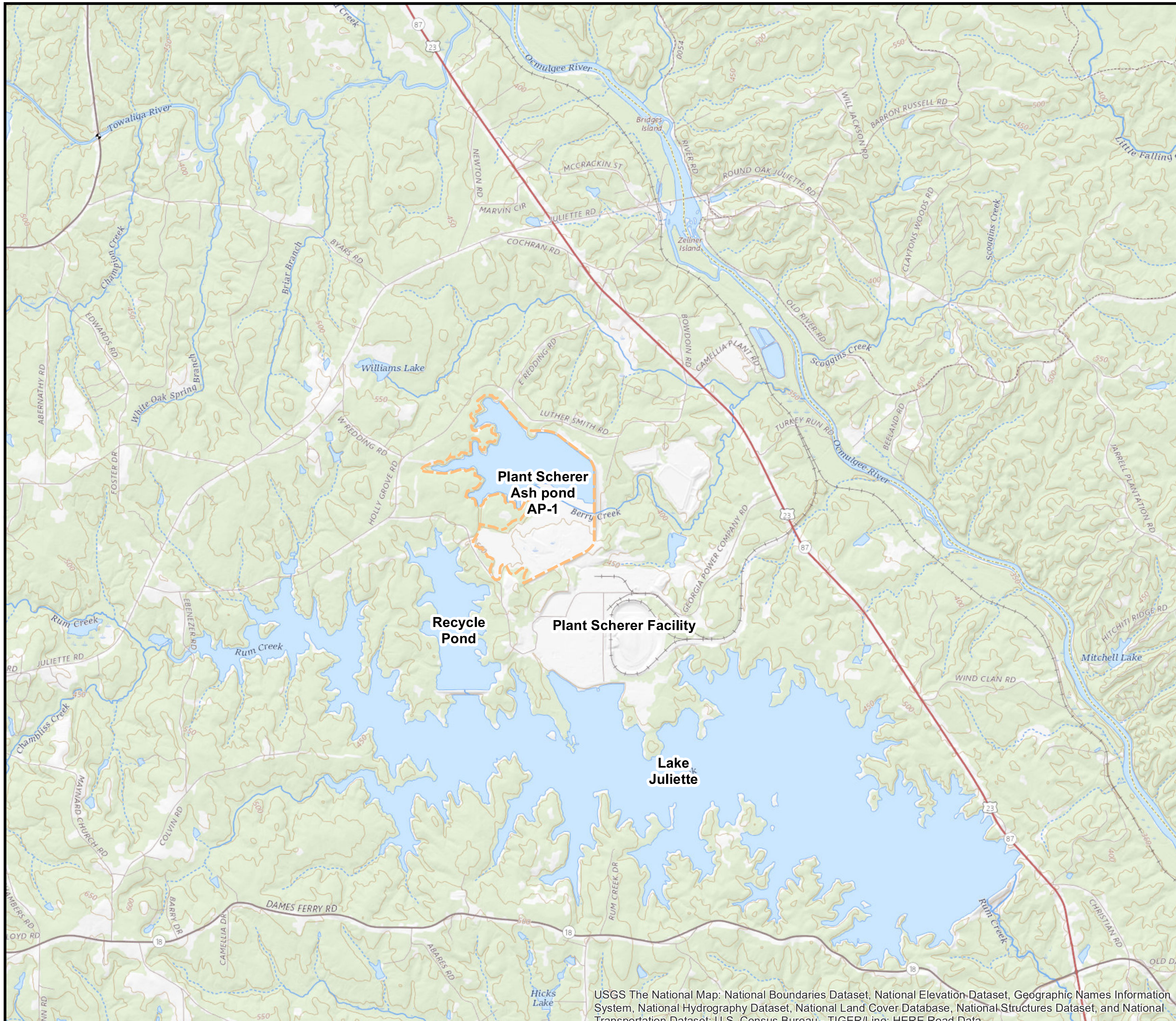
Vertical Conductivity Zones - all			
	RSS	Current RSS	Difference
Max	563.8593	484.05	79.81
Min	0		-484.05
Range	563.8593		--
Average	396.7062		

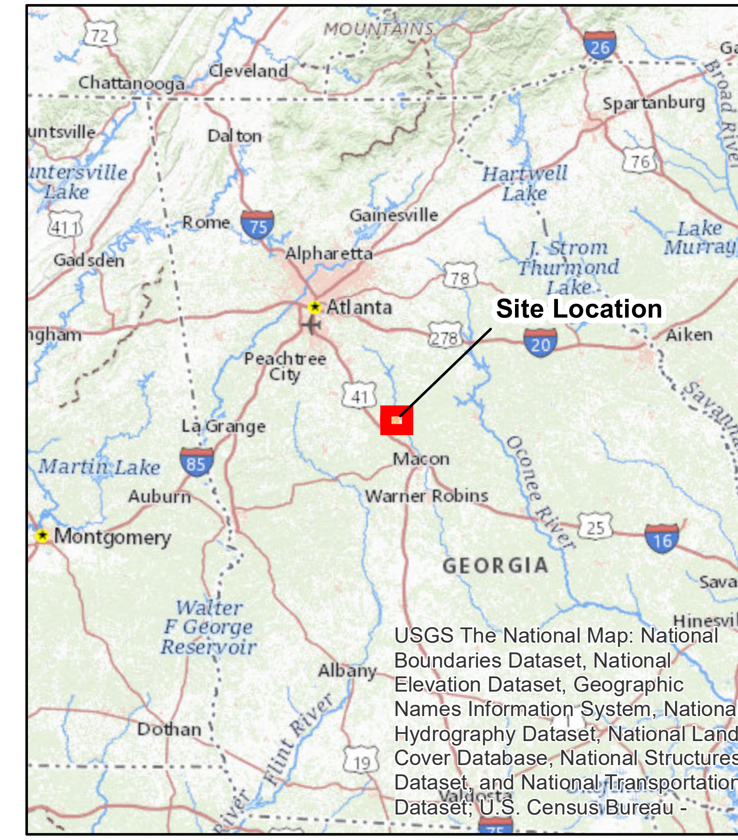
RSS Residual Sum of Squares
K_h horizontal hydraulic conductivity in ft/day
K_v vertical hydraulic conductivity
Rec Recharge
ET Evapotranspiration
Max Maximum
Min Minimum
ft/day feet per day
ft^2 square feet
Delta indicates the difference between RSS for current setting and the lowest value in the analysis.

LEGEND

Layer	Layer 1	Model Layer
K_h	1.3056	Zone in ft/day
Zone ID	K_h18	zone identification for K, Rec, ET
Base RSS: 482.12 ft^2		
Max:	505.83	
Min:	474.38	
Range:	31.46	
+ Delta	1.02	
% Delta	0.21%	Percent of current K value RSS the lowest RSS value represents

FIGURES





Legend

AP-1 Boundary

N

0 4,000 8,000 Feet

AECOM

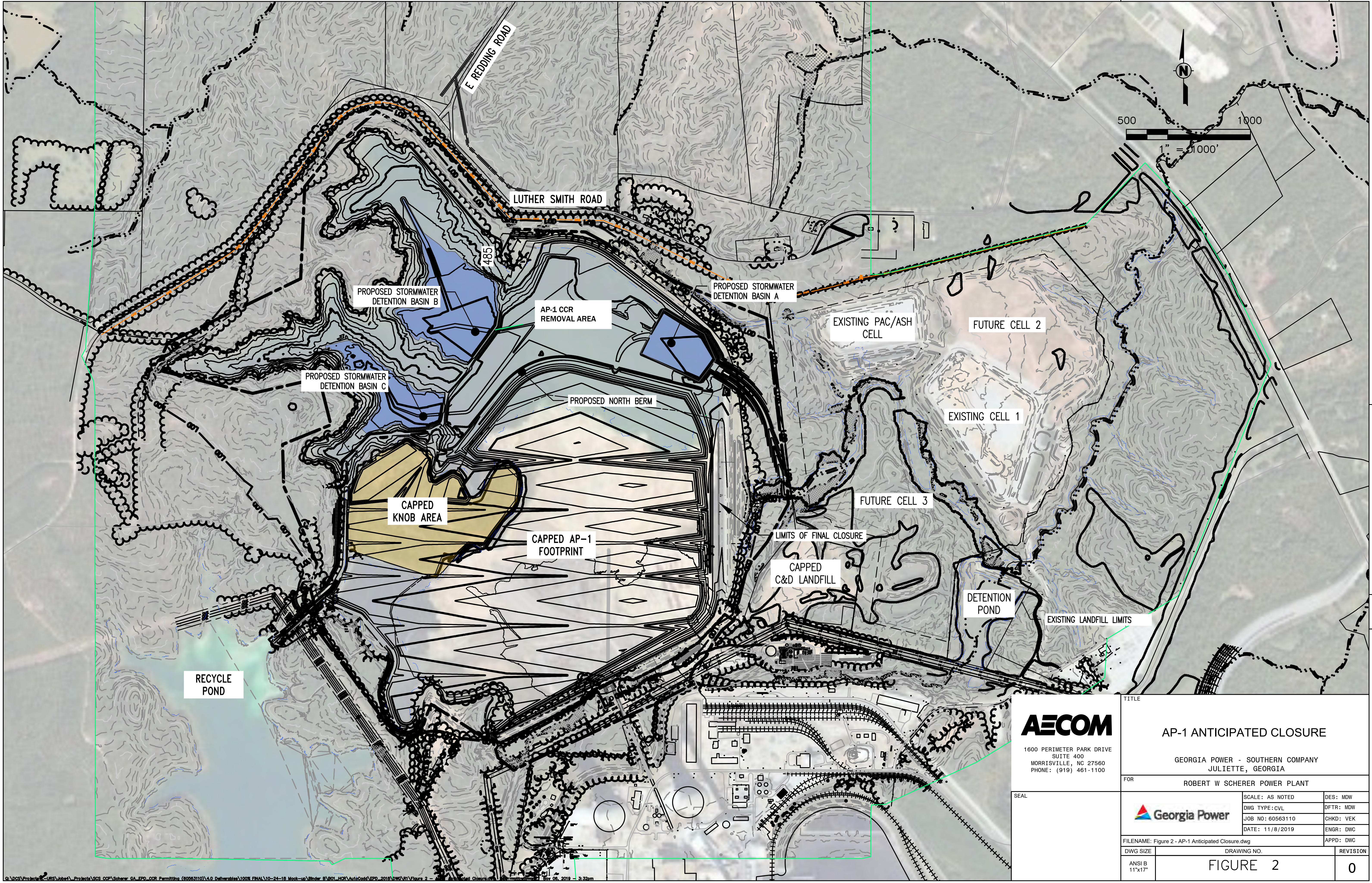
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

SITE LOCATION AND TOPOGRAPHY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	1



REV. 0

AECOM
1600 PERIMETER PARK DRIVE
SUITE 400
MORRISVILLE, NC 27560
PHONE: (919) 461-1100

TITLE

AP-1 ANTICIPATED CLOSURE

GEORGIA POWER - SOUTHERN COMPANY
JULIETTE, GEORGIA

FOR

ROBERT W SCHERER POWER PLANT

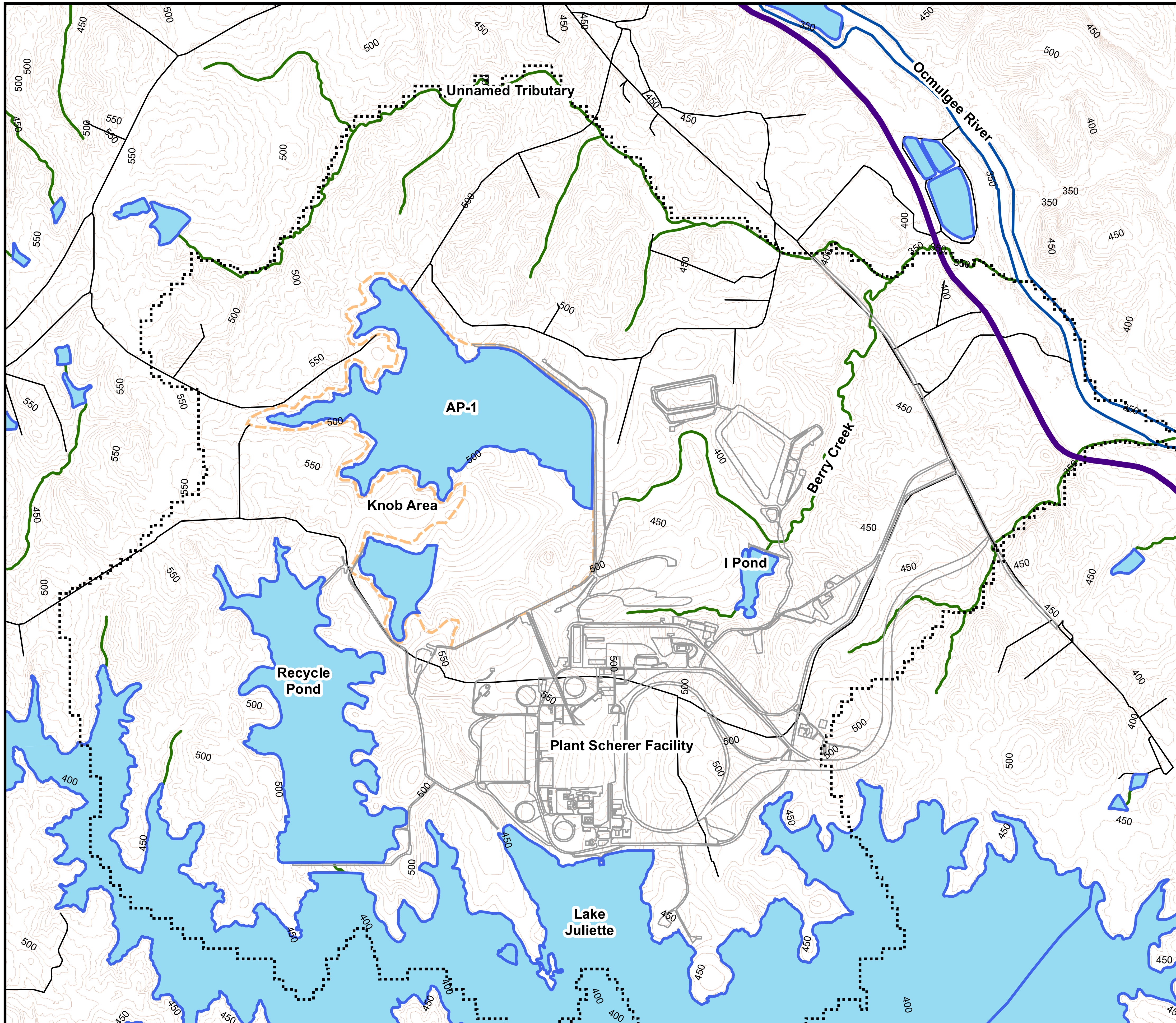
SEAL

Georgia Power

	SCALE: AS NOTED	DES: MDW
	DWG TYPE: CVL	DFTR: MDW
	JOB NO: 60563110	CHKD: VEK
	DATE: 11/8/2019	ENGR: DWC
FILENAME: Figure 2 - AP-1 Anticipated Closure.dwg		APPD: DWC

DWG SIZE	DRAWING NO.	REVISION
ANSI B 11"x17"	FIGURE 2	0

REV. 0



Legend

- Active Model Domain
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary
- Topographic Contour (10 ft interval, ft msl)

Note:
Vertical Datum NAVD 88
Topography Source:
USGS 7.5 Minute Quadrangle, East Juliette, 2011

N

0 2,000 4,000 Feet

AECOM

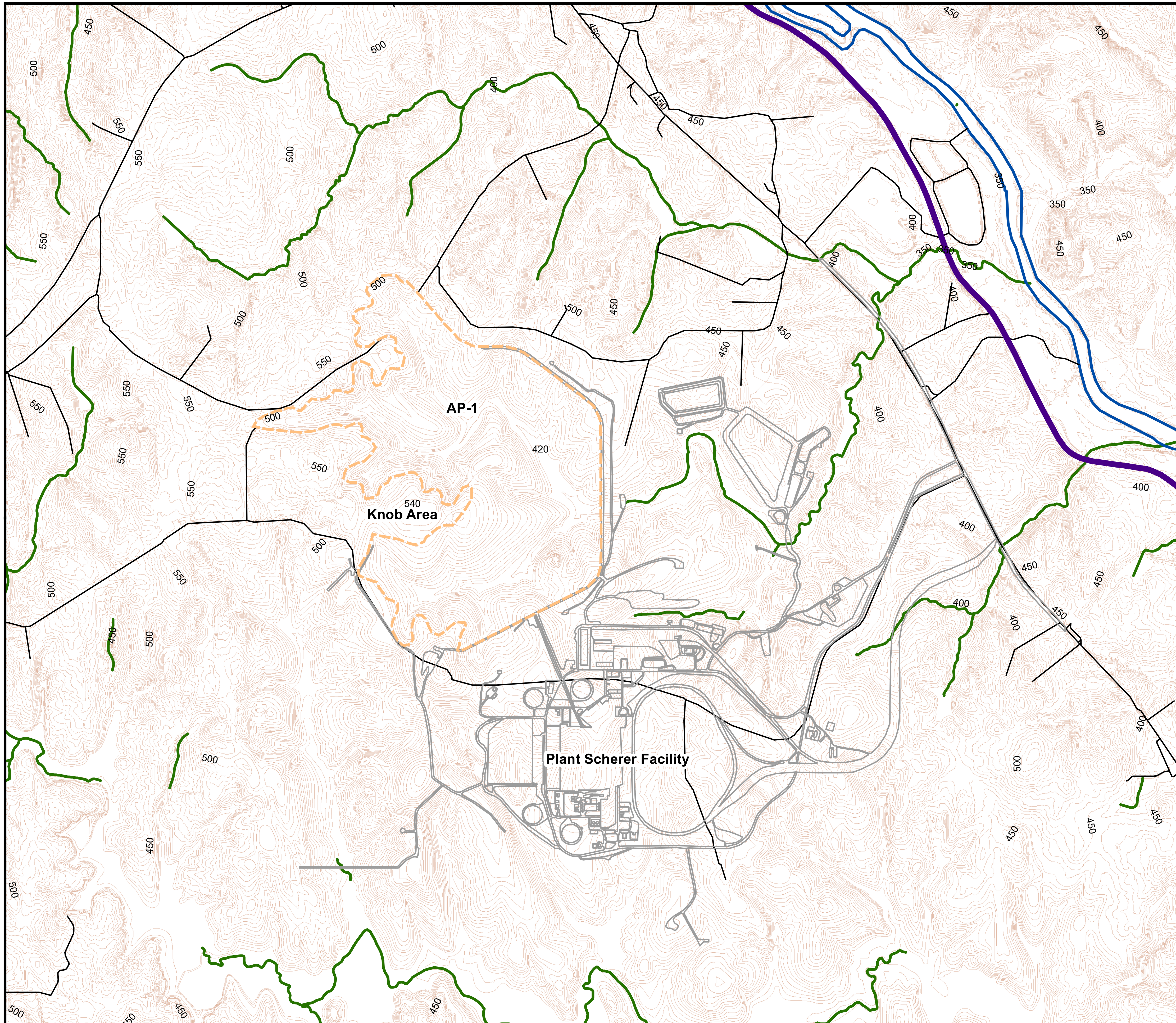
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

SITE MAP WITH MODEL BOUNDARY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/24/2020	3



Legend

- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary
- Pre-Development Topographic Contour (5 ft interval, ft msl)

Note:
Vertical Datum NAVD88
Source:
USGS 15 Minute Quadrangle East Juliette, GA (1973)

N

0 1,500 3,000 Feet

AECOM

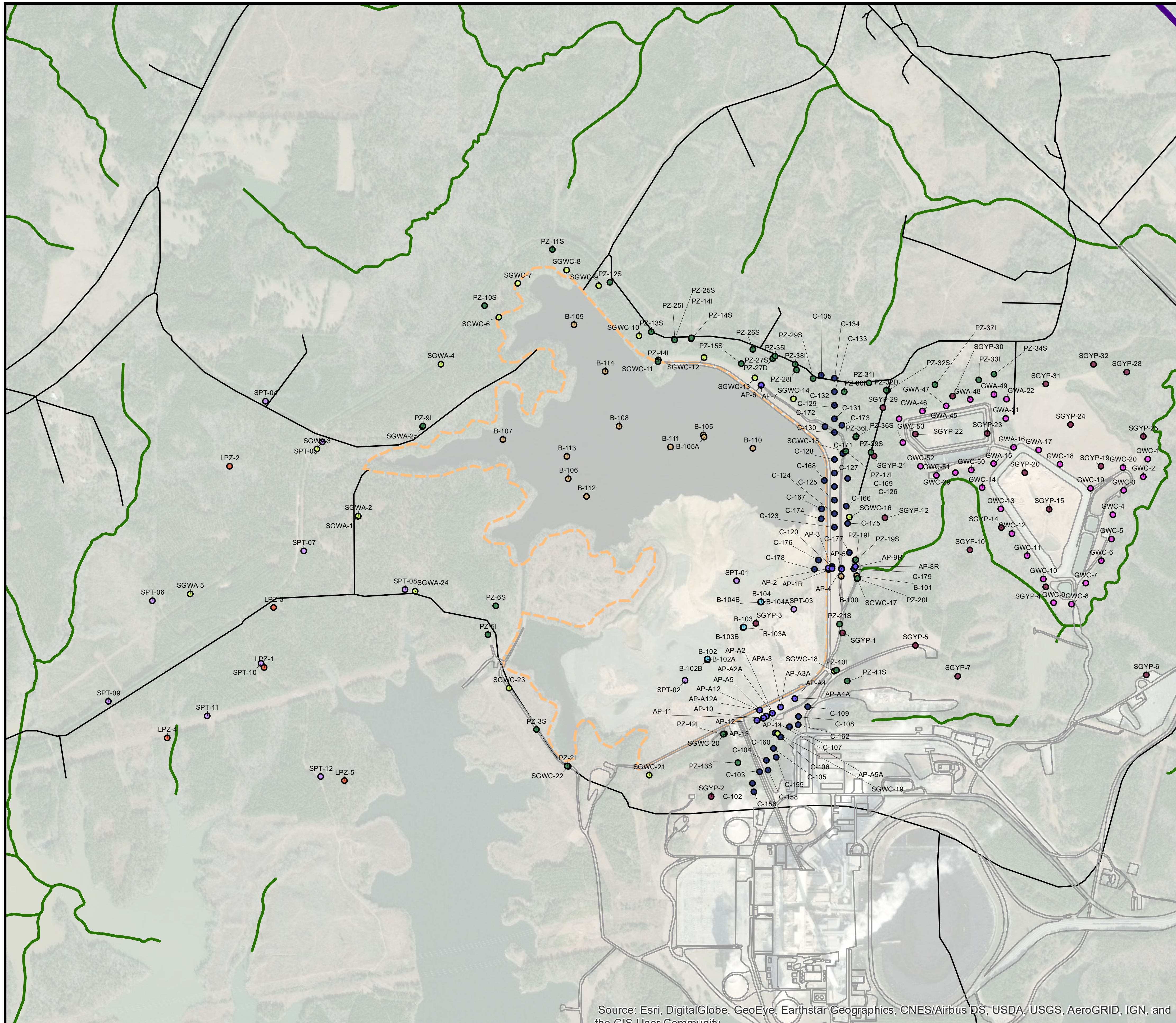
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE-DEVELOPMENT TOPOGRAPHY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	**4**



Legend

- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Boring and Well Locations

Type

- APA Series Monitoring Wells
- Ash Pond Monitoring Wells
- B Series Borings
- B-Series Wells
- C Series Borings
- LPZ Piezometers
- PAC Ash / Gypsum Cell Monitoring Wells
- Piezometers
- SGYP Series Borings
- SPT Series Borings

N

0 2,000 4,000 Feet

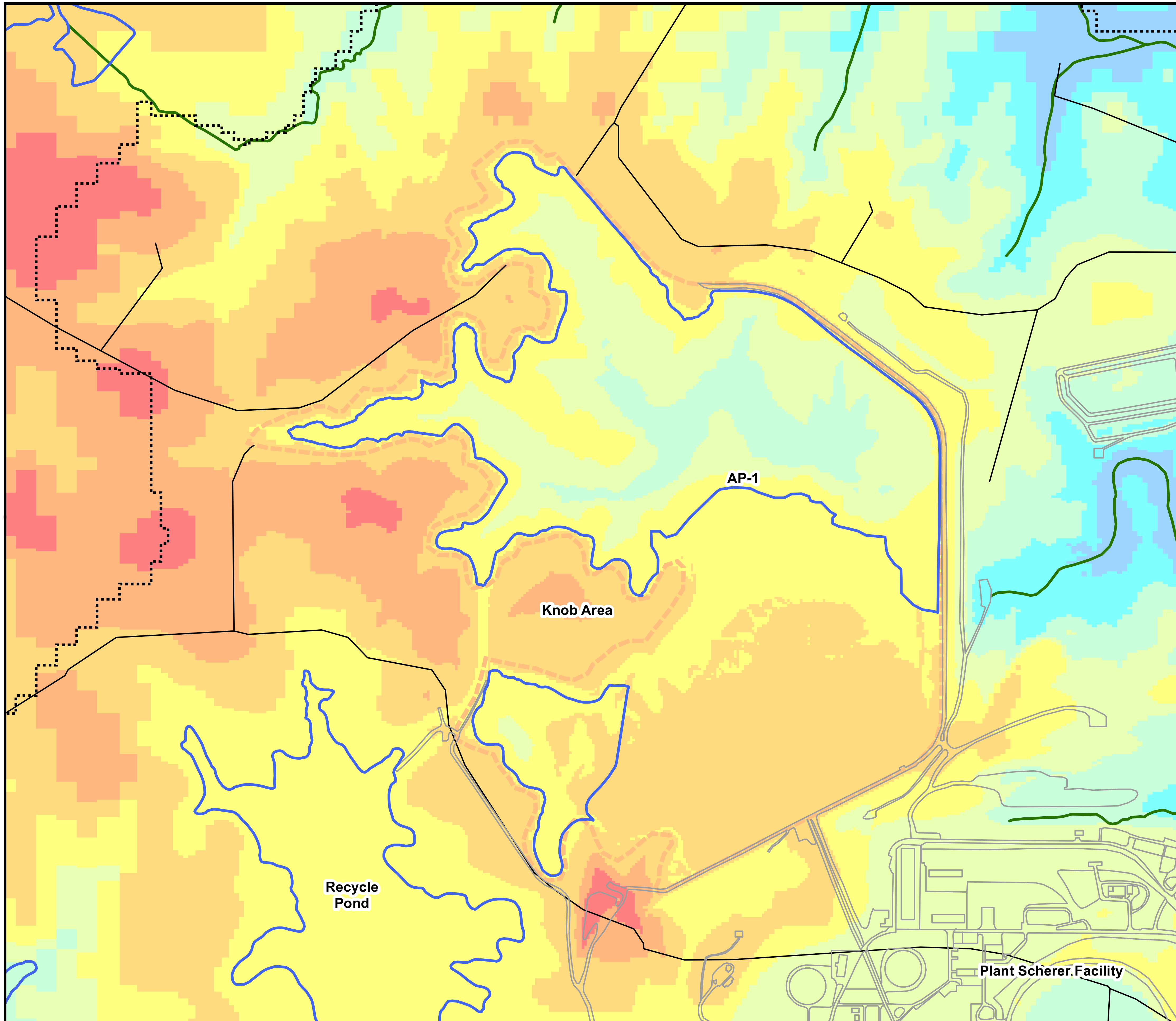
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
BORING AND WELL/PIEZOMETER LOCATIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/24/2020	5



Legend

- Active Model Domain
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Topography/Bathymetry (ft msl)

- < 360
- 360 - 375
- 375 - 400
- 400 - 425
- 425 - 450
- 450 - 475
- 475 - 500
- 500 - 525
- 525 - 550
- 550 - 575

Note:
Vertical Datum NAVD 88
Topography from 2014 Lidar Data, sampled every 100 ft and interpolated in Surfer using Natural Neighbor method and 25 ft grid spacing. Elevations in AP-1 below pond level is based on bathymetry data and a ground surface survey above the pond elevation.

N

0 1,000 2,000 Feet

AECOM

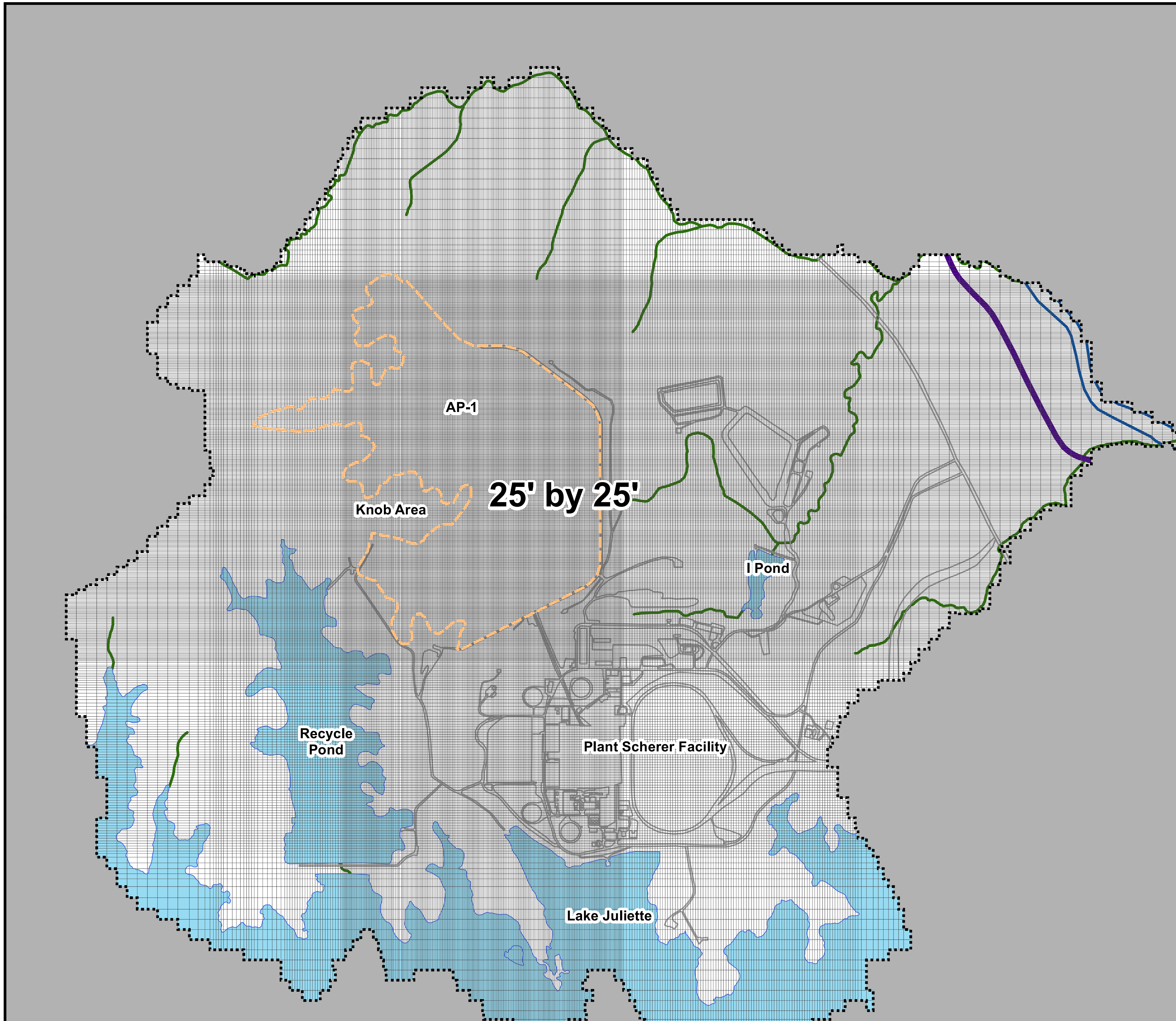
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE TOPOGRAPHY WITHIN AP-1 WITH ASH POND BATHYMETRY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	6



Legend

- AP-1 Boundary
- Active Model Domain
- Active Model Cell
- Inactive Cell
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Ocmulgee River
- Streams

Note:
Finest grid spacing of 25 by 24.5 ft.
Majority of finest spacing is 25 ft by 25 ft.
Coarsest grid spacing 225 by 222 ft.
Majority of coarsest grid spacing is 200 ft by 200 ft.

N

0 2,000 4,000 Feet

AECOM

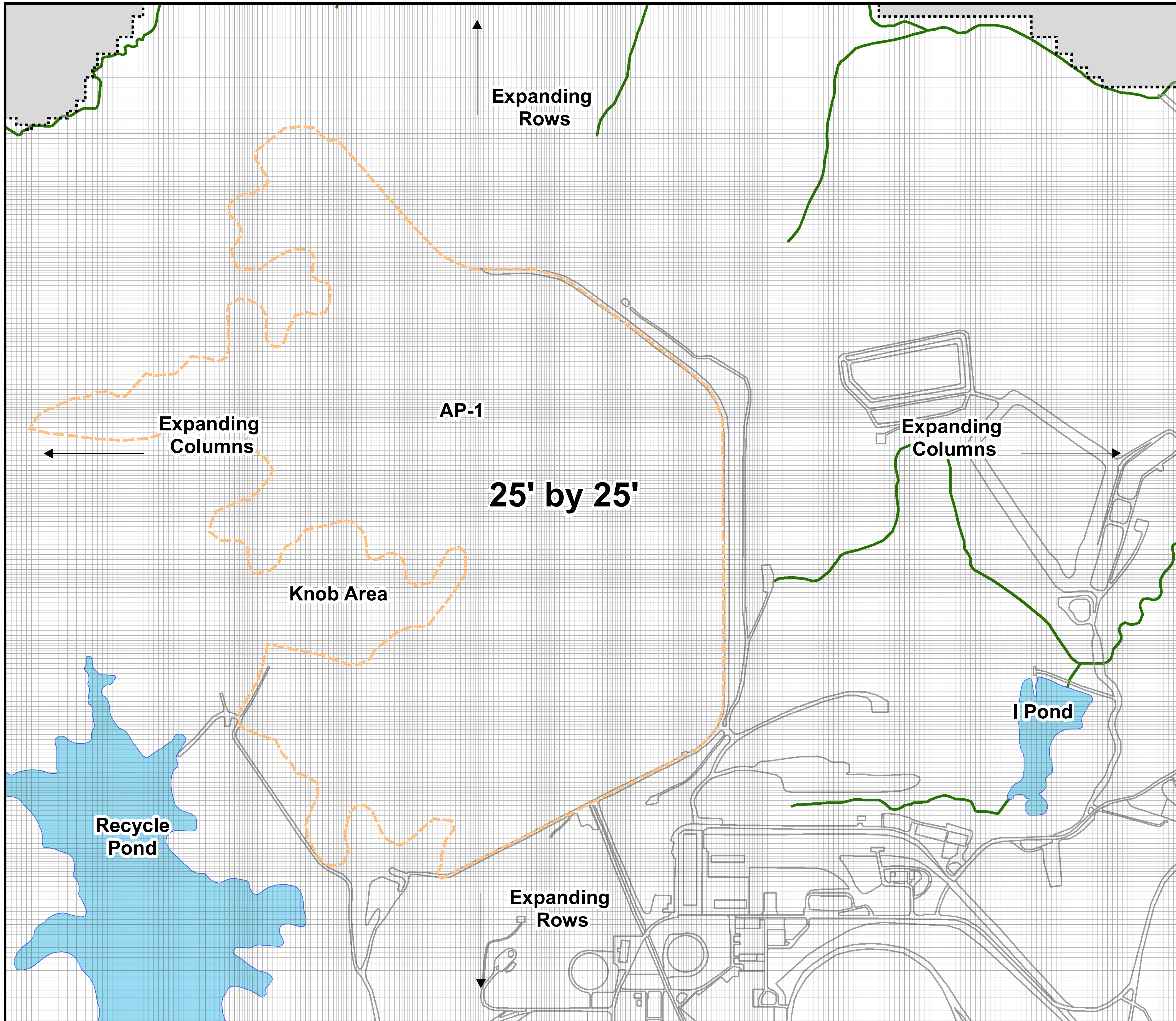
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

MODEL GRID

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	7



Legend

- AP-1 Boundary
- Active Model Domain
- Active Model Cell
- Inactive Cell
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Ocmulgee River
- Streams

Note:
Finest grid spacing of 25 by 24.5 ft.
Majority of finest spacing is 25 ft by 25 ft.
Coarsest grid spacing 225 by 222 ft.
Majority of coarsest grid spacing is 200 ft by 200 ft.

N

0 1,000 2,000 Feet

AECOM

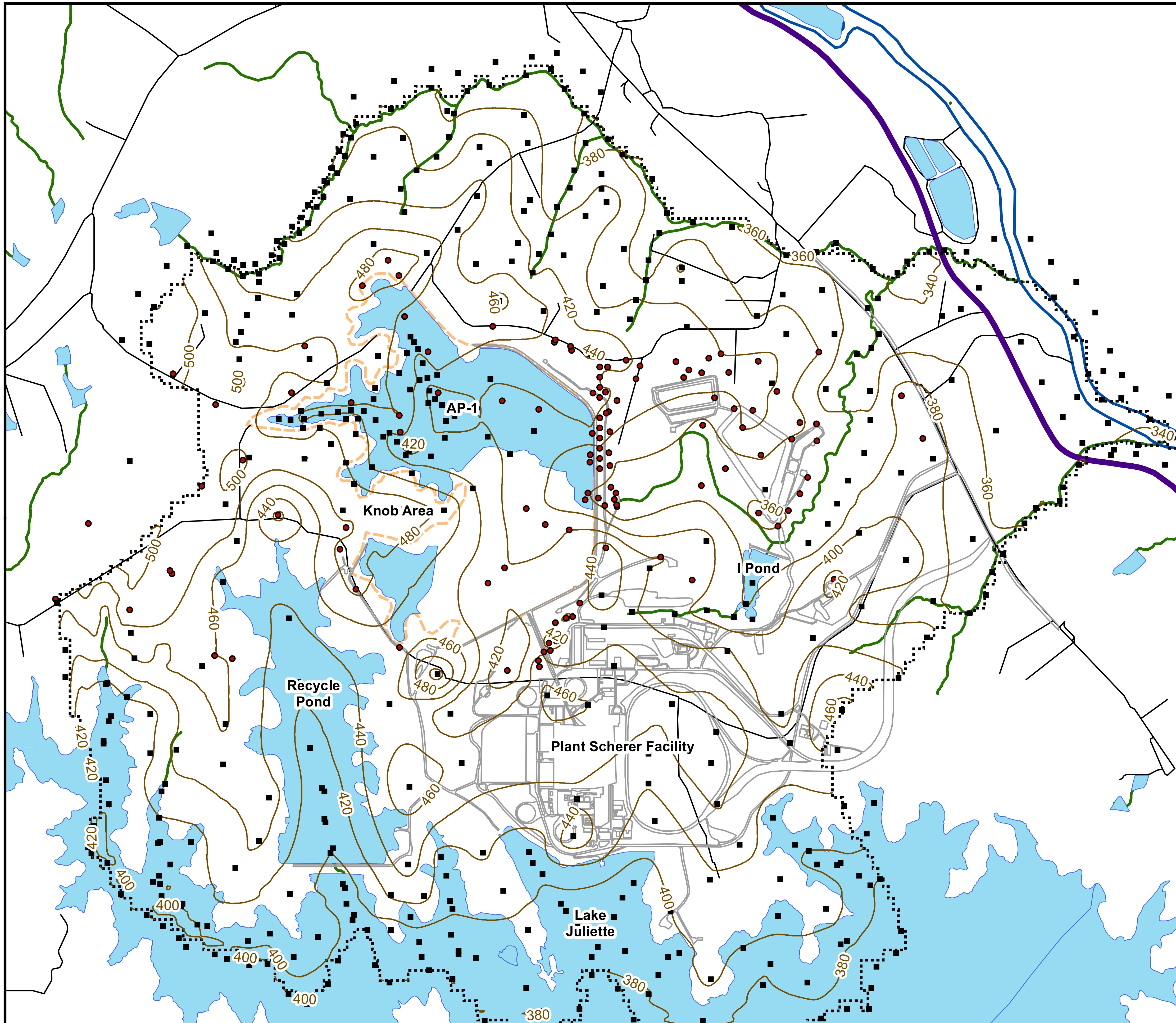
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

MODEL GRID CLOSE UP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	8



Legend

- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary
- Active Model Domain
- Boring Location
- Inferred Control Point
- Top of PWR Contour (ft msl)

Note:
Boring log lithology used to define top of PWR.

Inferred control points used average thickness to predict top of PWR. If a boring did not tag PWR, information from nearby borings or average thickness of Residuum or Saprolite was used to estimate the elevation of the top of the PWR.

N

0 2,000 4,000 Feet

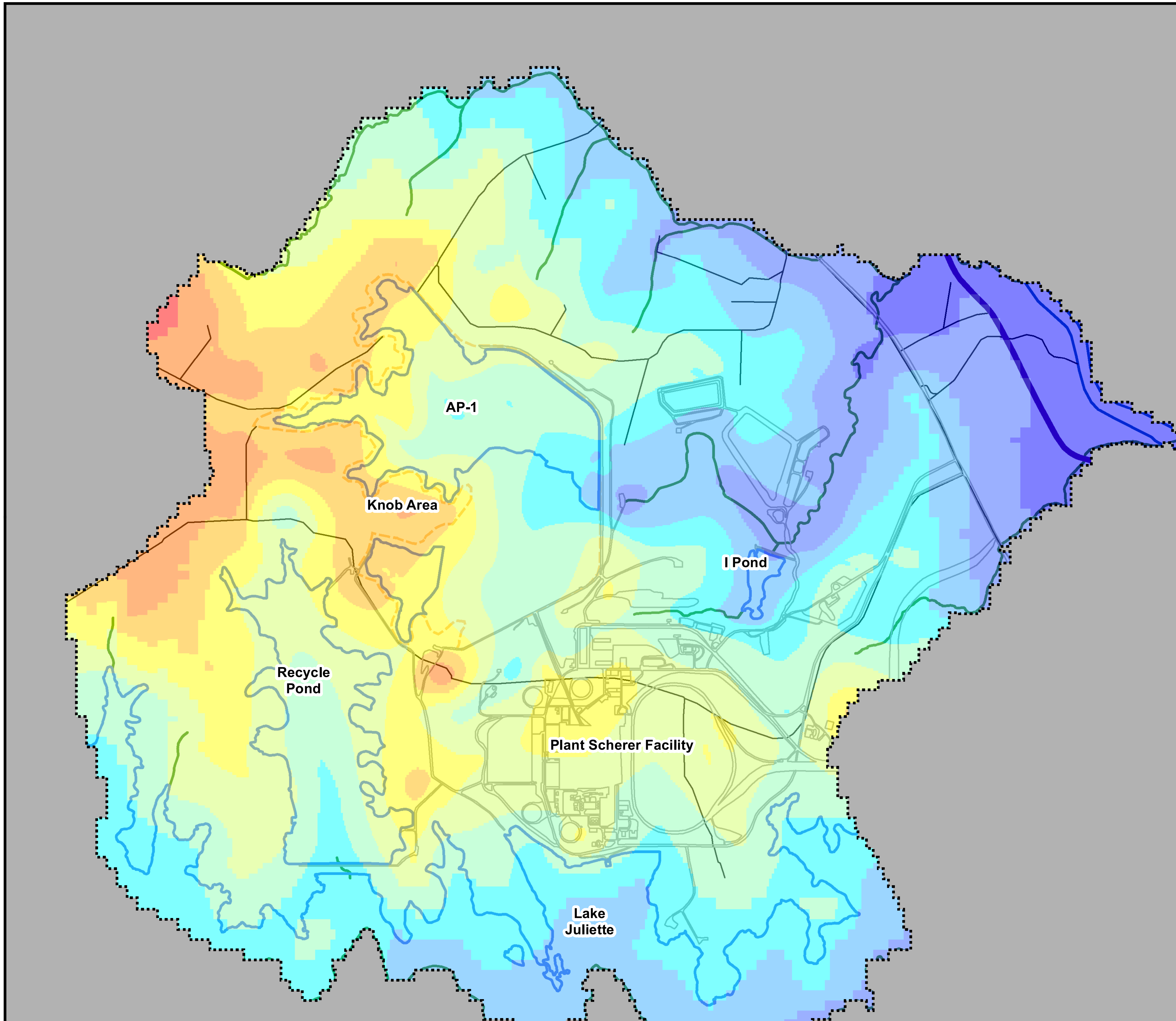
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
DATA USED TO DEFINE TOP OF PWR - LAYER 3

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	9



Legend

- Active Model Domain
- Inactive Cells
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Top of PWR (ft msl)

- 330 - 350
- 350 - 370
- 370 - 390
- 390 - 410
- 410 - 430
- 430 - 450
- 450 - 470
- 470 - 490
- 490 - 510
- 510 - 530

Note:
Vertical Datum NAVD 88
Color flood for top of the PWR based on the data shown in Figure 9

0 2,000 4,000 Feet

N

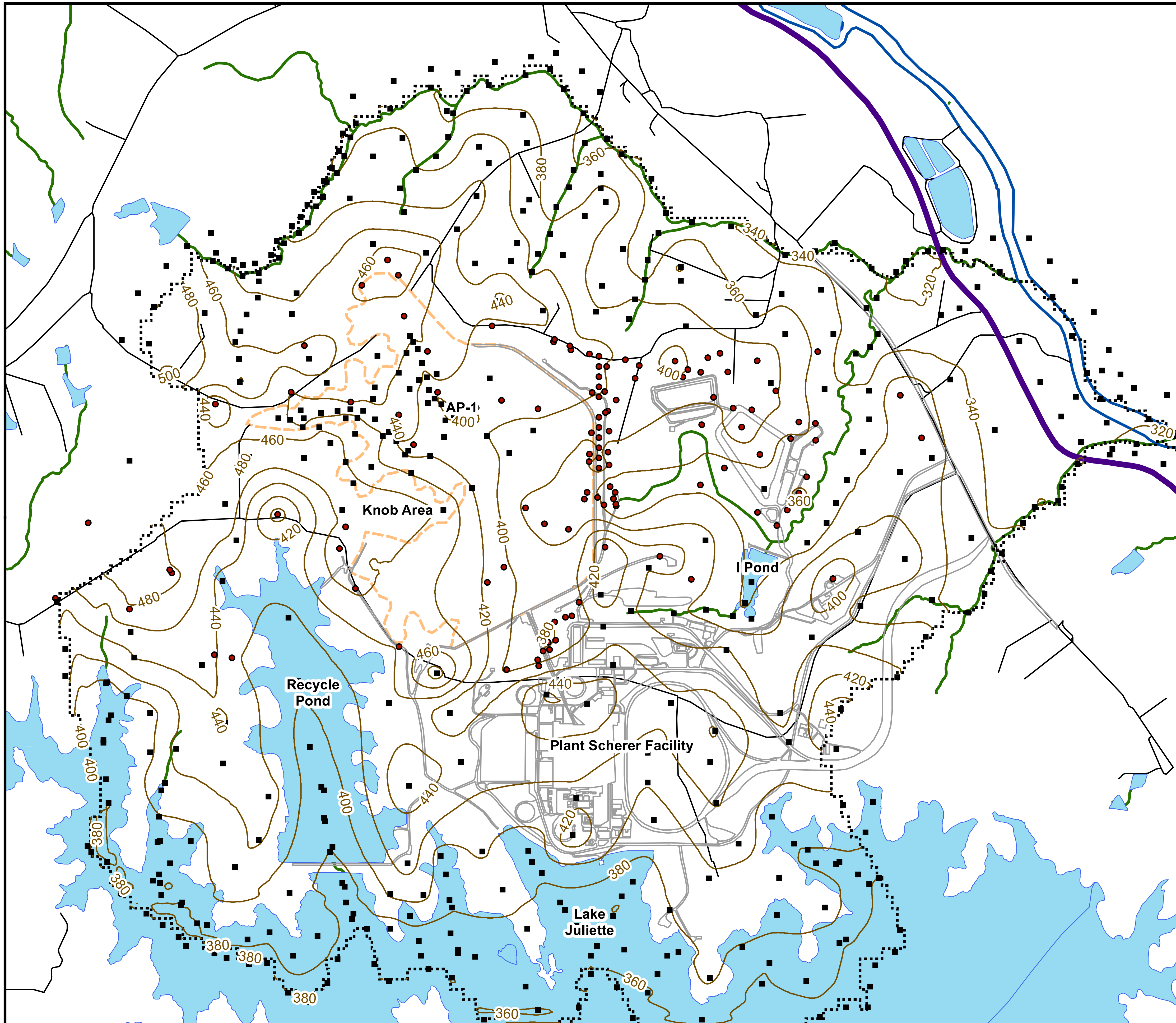
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
COLOR FLOOD OF TOP OF PWR / MODEL LAYER 3

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	10



Legend

- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary
- Active Model Domain
- Boring Location
- Inferred Control Point
- Top of FBR Contour (ft msl)

Note:
Boring log lithology used to define top of FBR.

Inferred control points used average thickness to predict top of FBR. If a boring did not tag FBR, information from nearby borings or average thickness of Residuum/Saprolite and PWR was used to estimate the elevation of the top of the FBR.

N

0 2,000 4,000 Feet

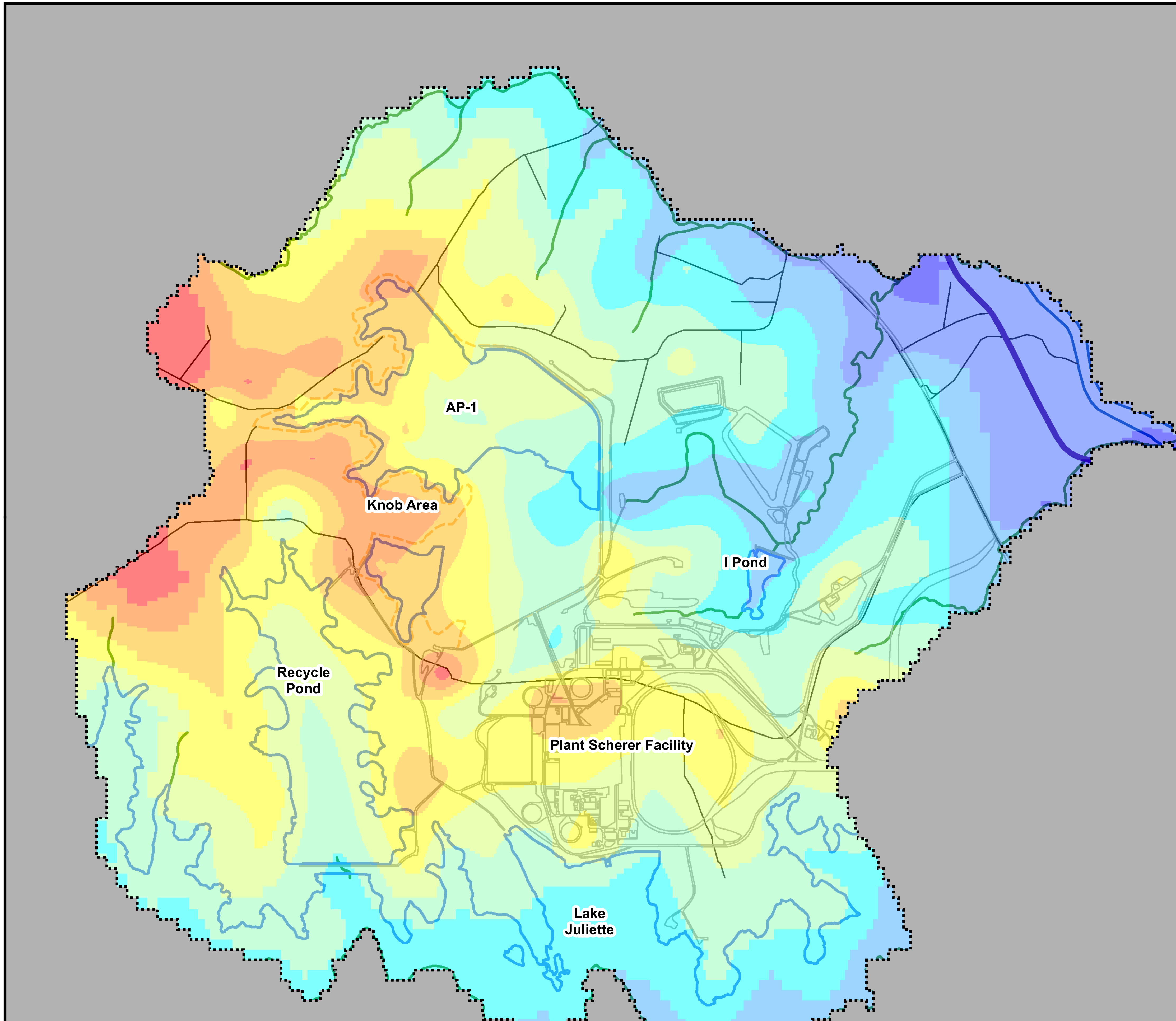
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
DATA USED TO DEFINE TOP OF FBR - LAYER 4

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	11



Legend

- Active Model Domain
- Inactive Cells
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Top of FBR (ft msl)

- 300 - 320
- 320 - 340
- 340 - 360
- 360 - 380
- 380 - 400
- 400 - 420
- 420 - 440
- 440 - 460
- 460 - 480
- 480 - 500

Note:
Vertical Datum NAVD 88
Color flood for top of the FBR based on the data shown in Figure 11

N

0 2,000 4,000 Feet

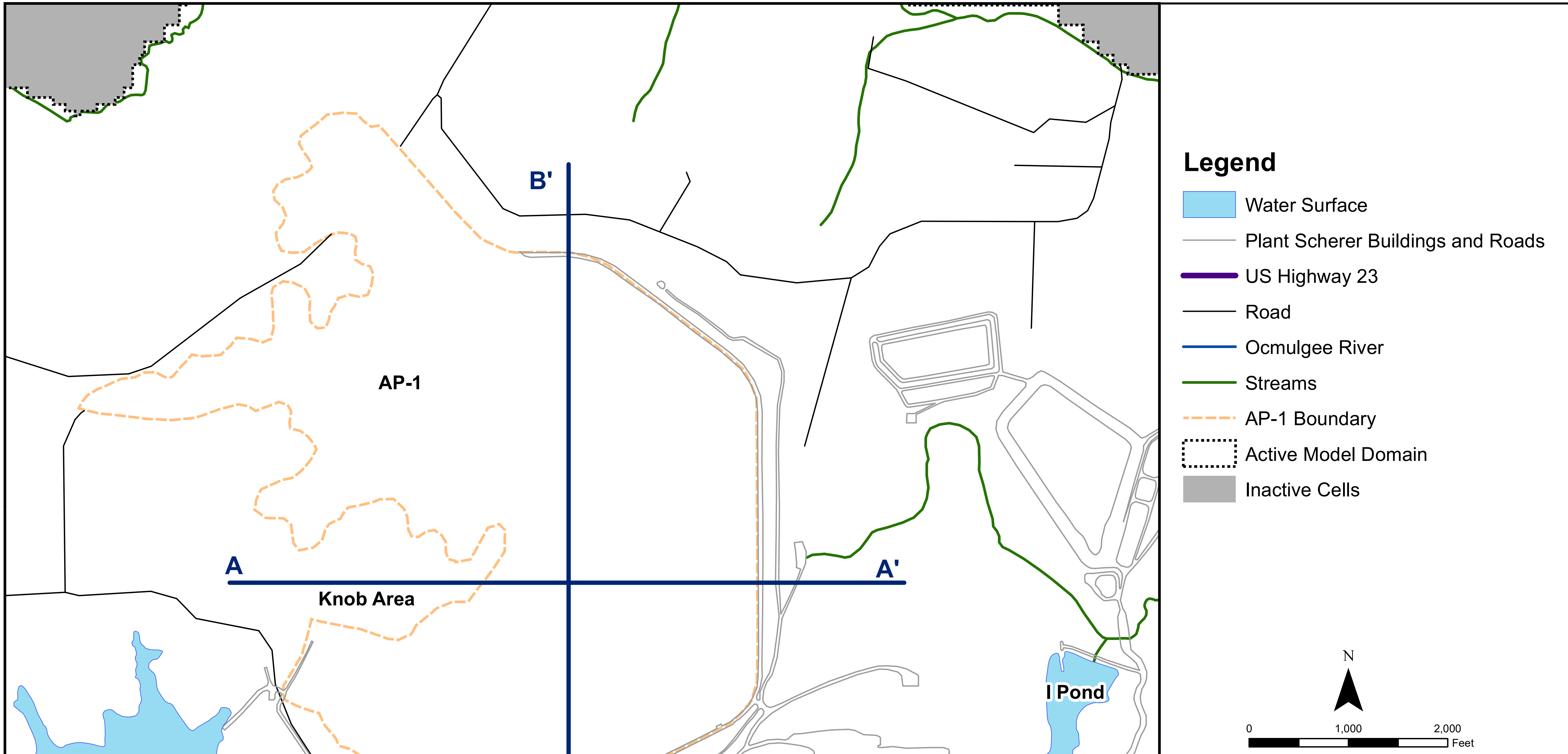
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
COLOR FLOOD OF TOP OF FBR / MODEL LAYER 4

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	12



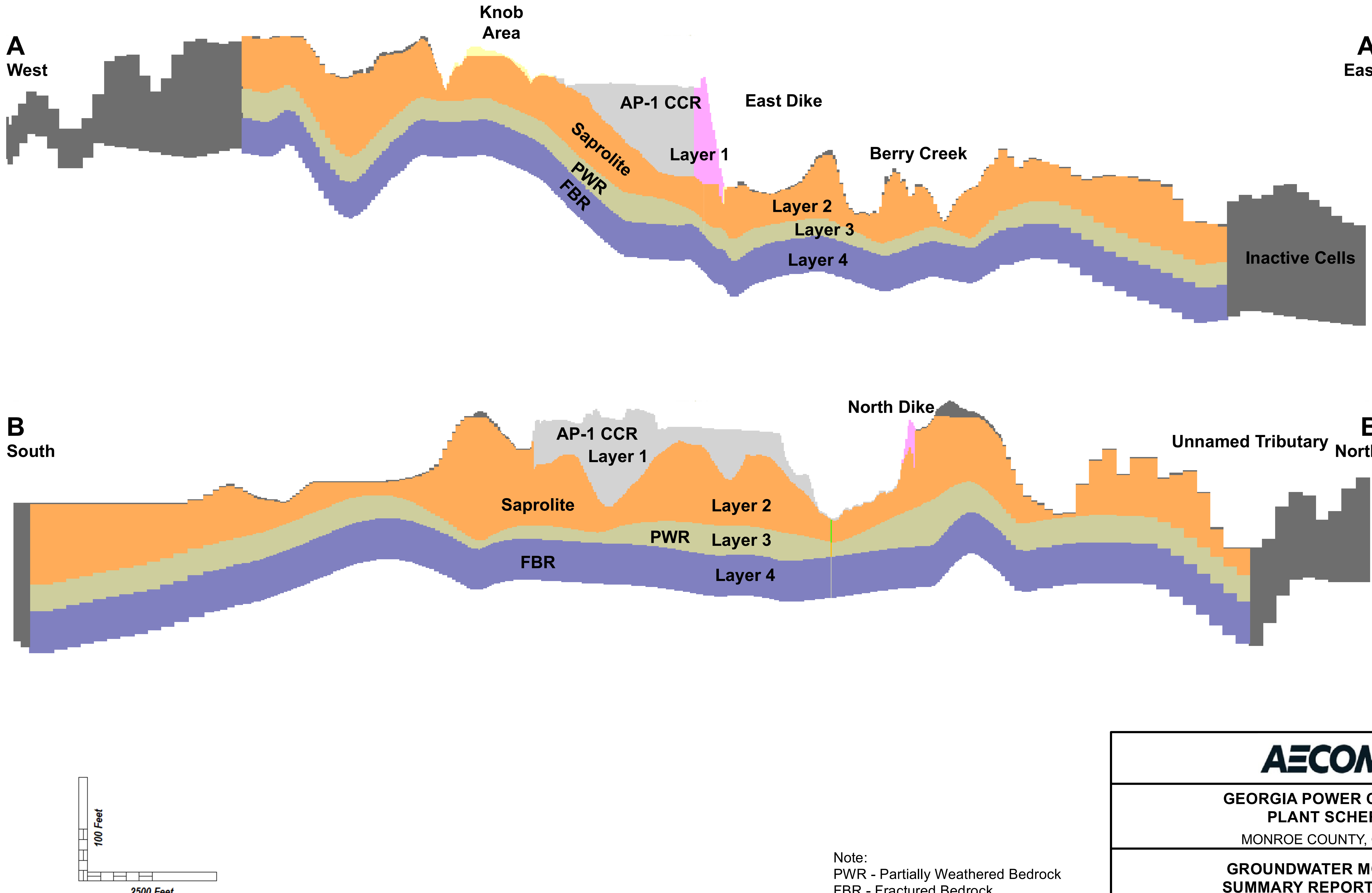
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

CROSS SECTION LOCATIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	**13**



Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

AECOM

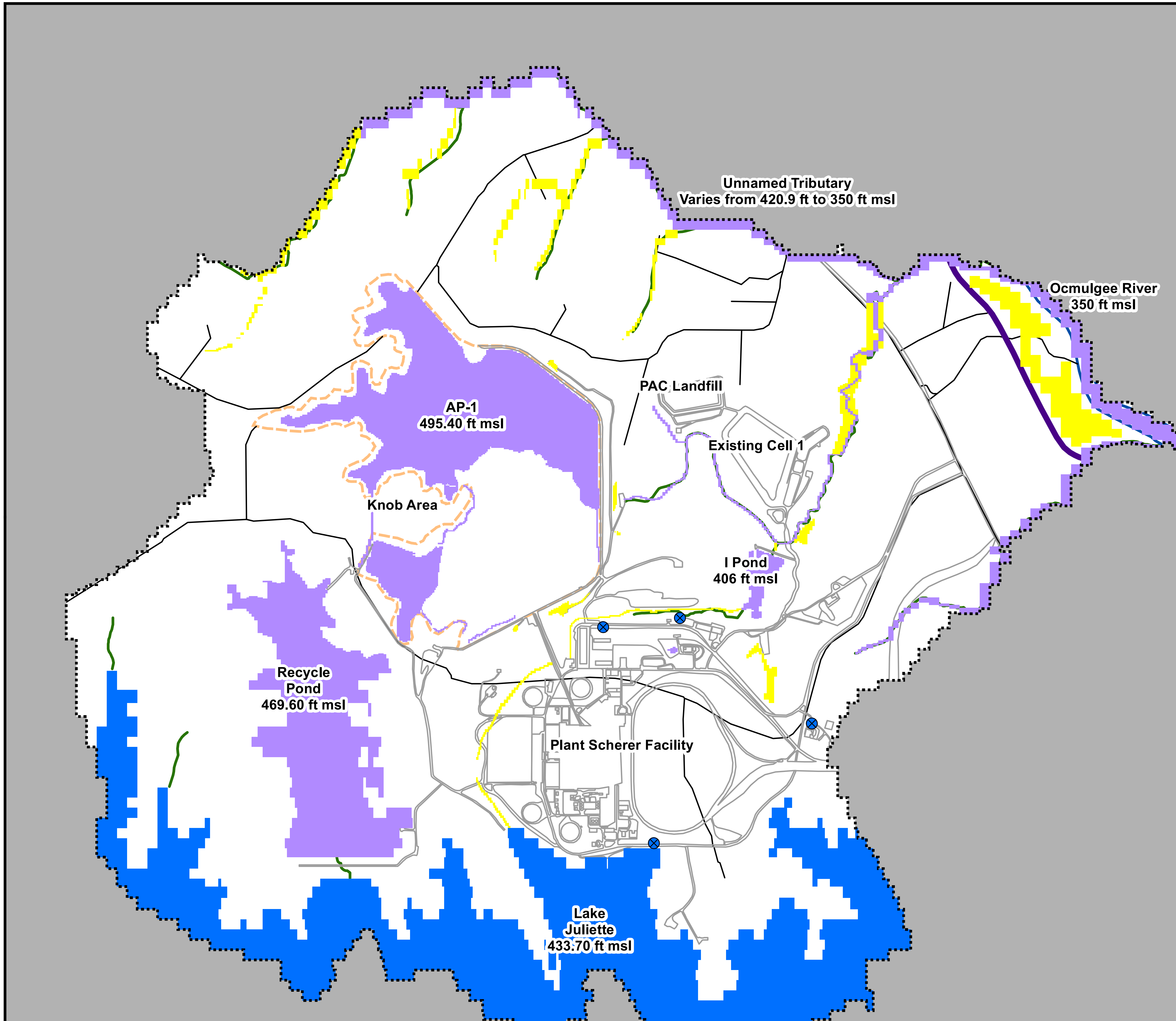
GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

MODEL LAYER CROSS SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	14



Note:
AP-1 water surfaces are in Layer 1.
The other lakes, rivers, and streams are in Layers 2 and 3.
Site drainage features are in Layer 2.

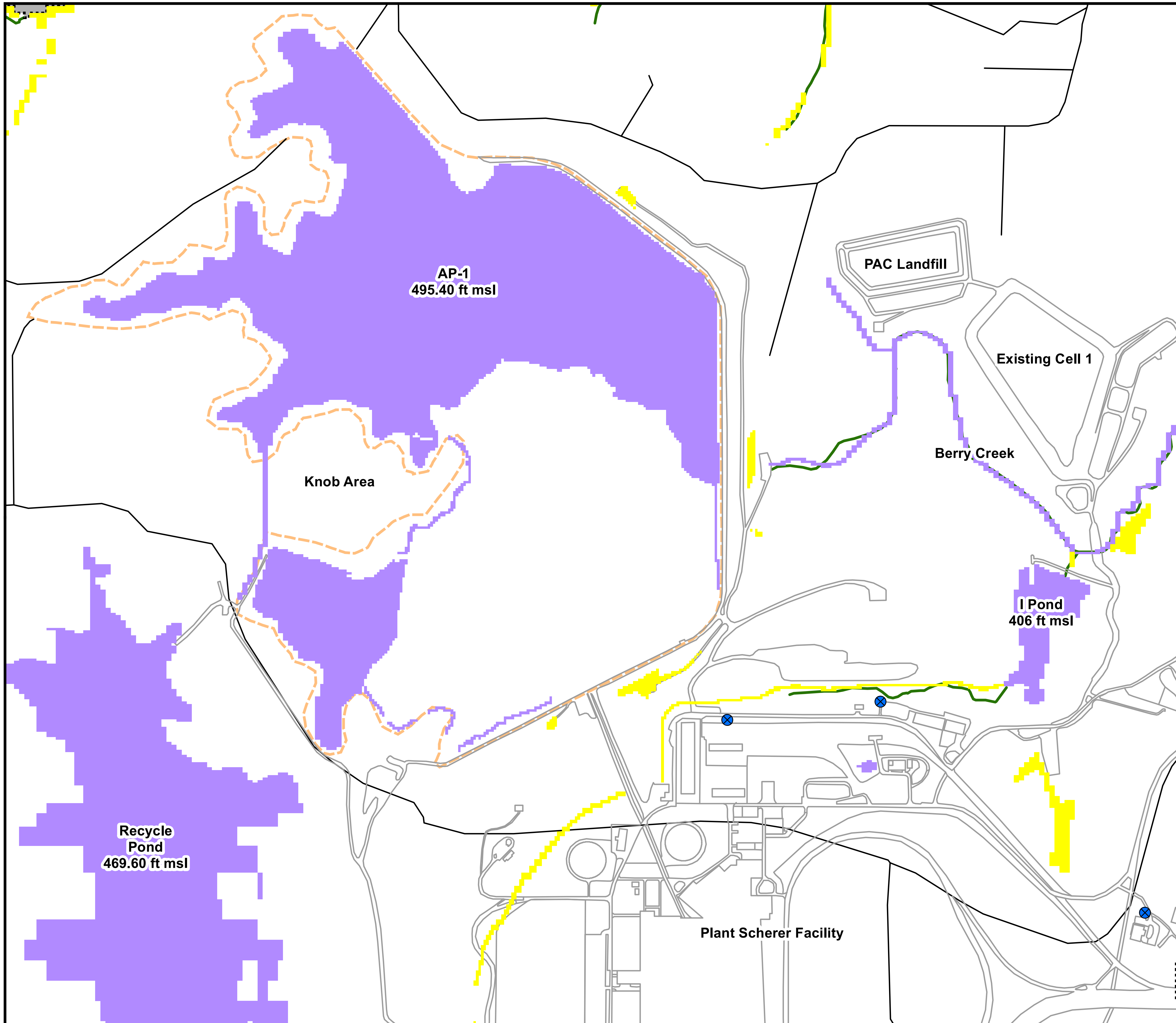
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/24/2020	15



Legend

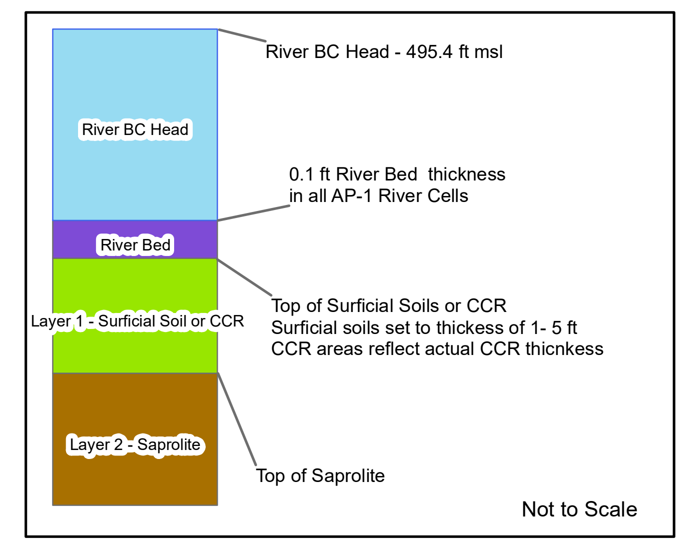
- Plant Scherer Buildings and Roads
- Road
- Streams
- AP-1 Boundary
- Active Model Domain
- Pumping Well
- Drain Cells
- River Cells
- Inactive Cells

0 1,000 2,000 Feet

N

Note:
AP-1 water surfaces are in Layer 1.
The other lakes, rivers, and streams are in Layers 2 and 3.
Site drainage features are in Layer 2.

Block Diagram of AP-1 River Boundary Conditions Cells



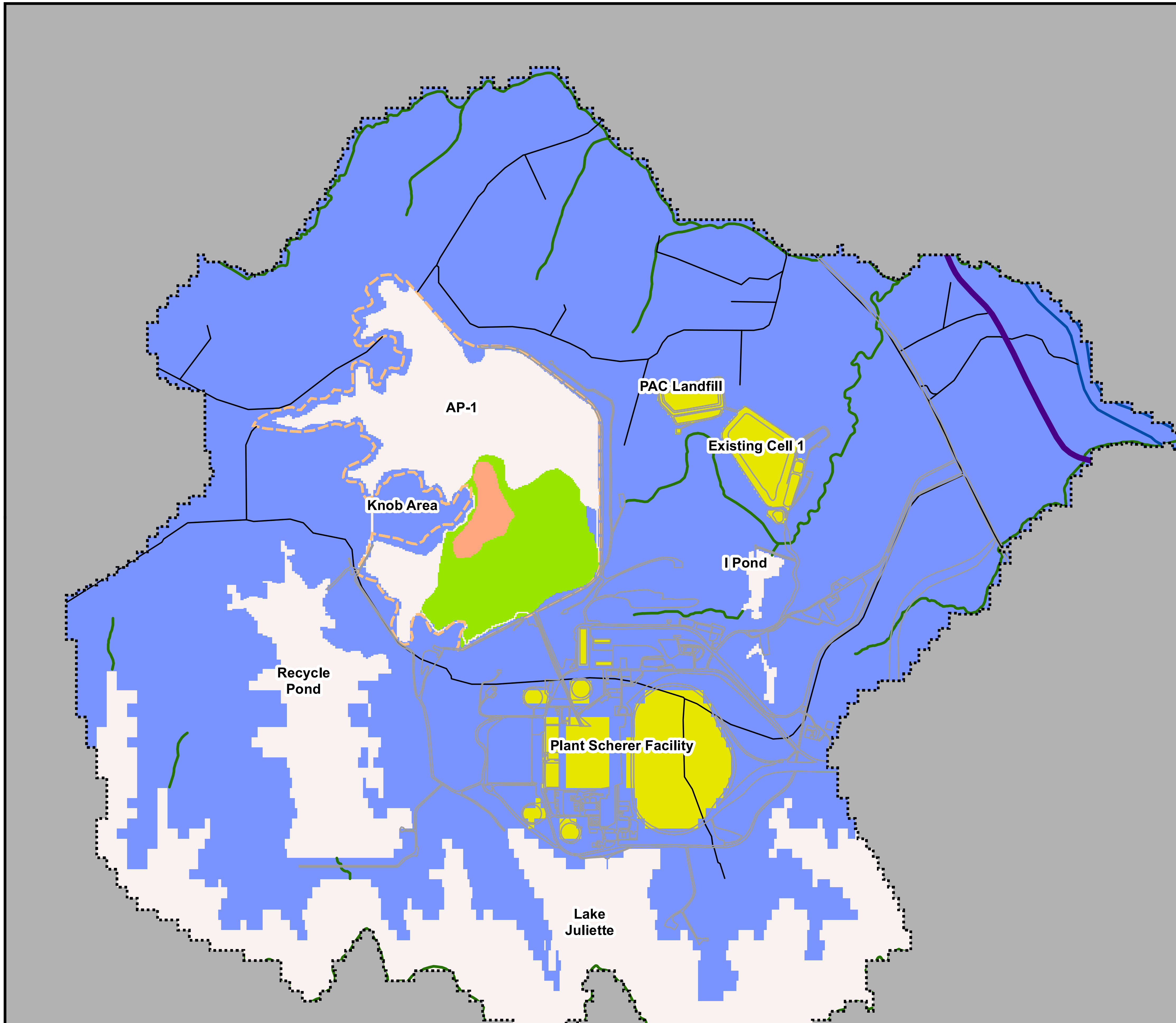
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE MODEL BOUNDARY CONDITIONS CLOSE UP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	16



Legend

- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Recharge Zone

- 2 *0 ft/d*
- 7 *1.52E-3 ft/d*
- 8 *0 ft/d*
- 9 *1.37E-3 ft/d*
- 10 *1.06E-3 ft/d*

Note:
Recharge values are shown in units of feet per day and are applied to the highest active model layer.

N

0 2,000 4,000 Feet

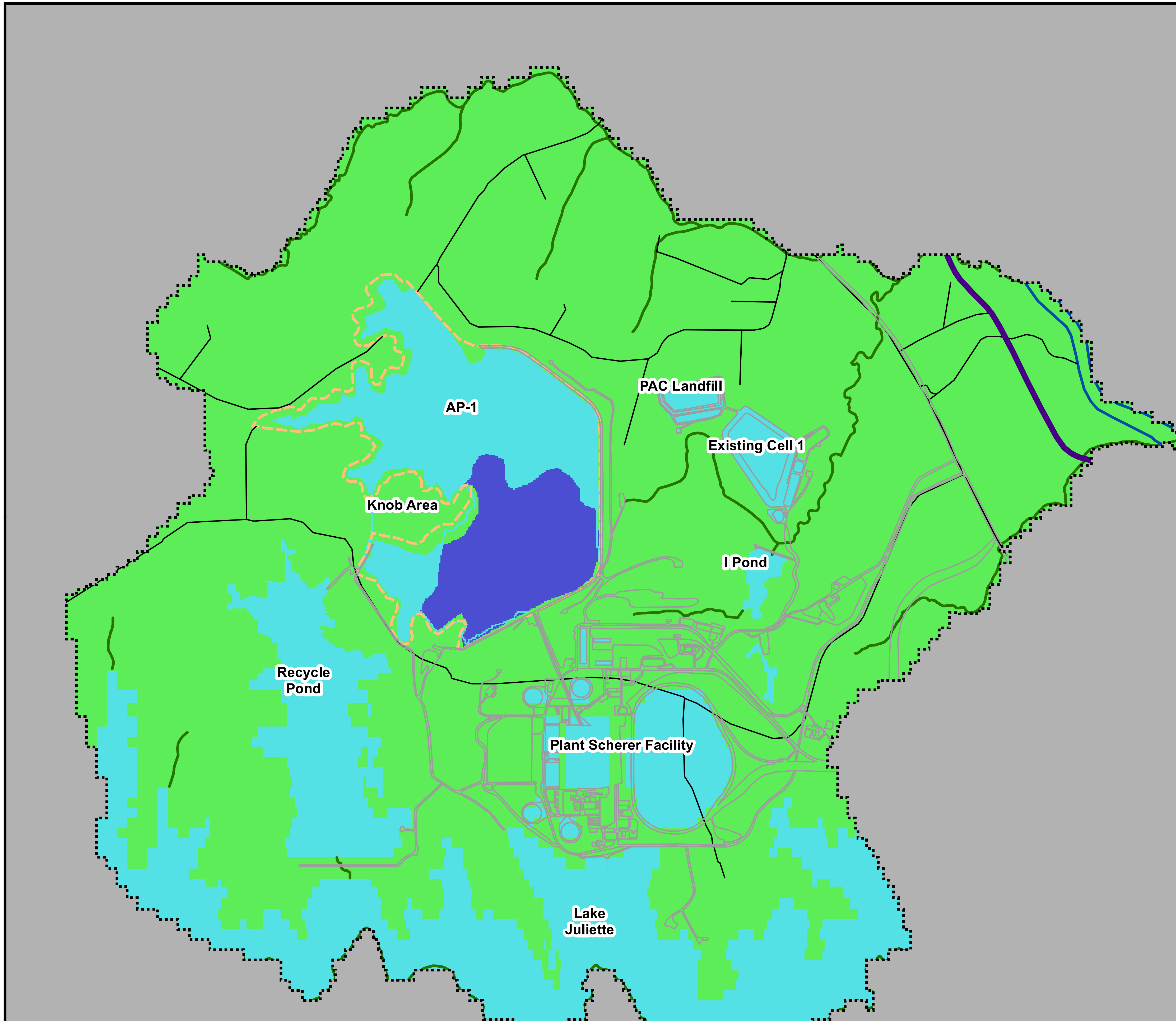
AECOM

GEORGIA POWER COMPANY
PLANT SCHERER
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE MODEL RECHARGE VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/20/2020	**17**



Legend

- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Evapotranspiration Zone

- 1 *Rate = 0 ft/d ExtDepth = 0 ft*
- 2 *Rate = 0.0010 ft/d ExtDepth = 1 ft*
- 3 *Rate = 0.0077 ft/d ExtDepth = 4 ft*

Note:
Evapotranspiration rates are shown in units of feet per day and are applied to the highest active model layer.

N

0 2,000 4,000 Feet

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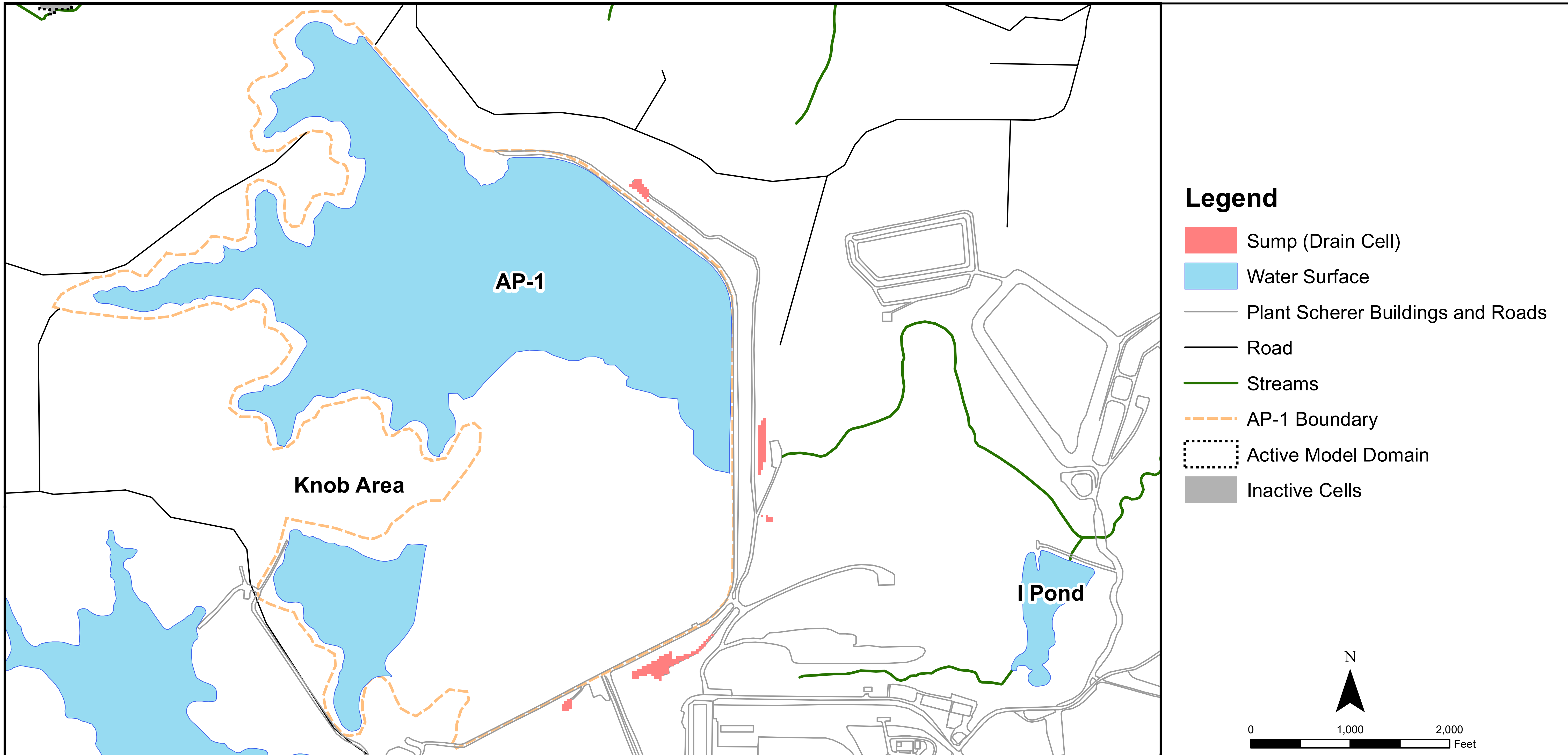
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE MODEL EVAPOTRANSPIRATON VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	18



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GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

RECOVERY SUMP LOCATIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
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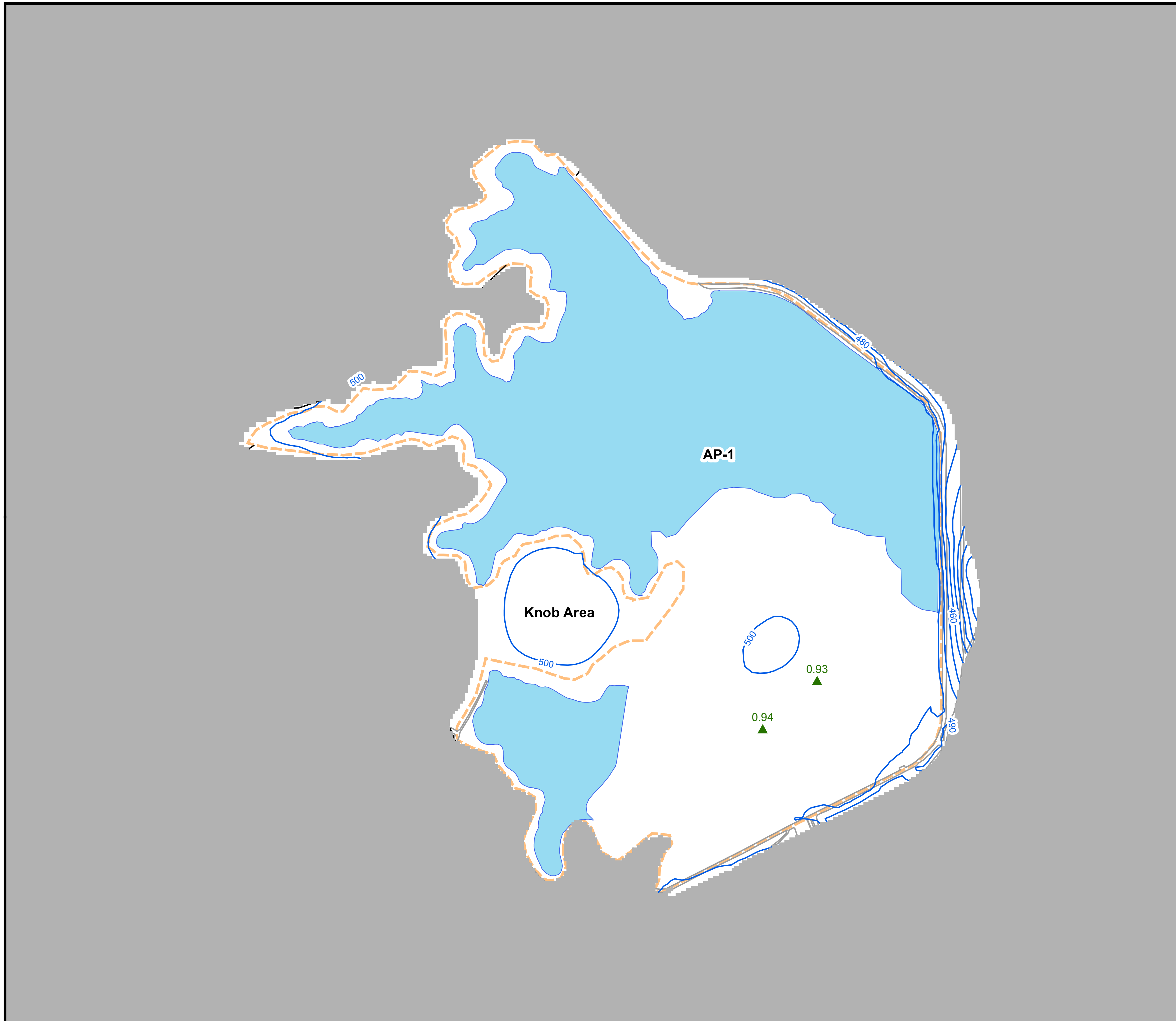

Legend

- AP-1 Boundary
- Inactive Cells
- Active Model Domain
- Water Surface
- Simulated head higher than observed head (ft)
- Simulated head lower than observed head (ft)
- 500 Simulated Potentiometric Surface Contour (ft msl)

Note:
Observed June 13, 2016 water levels provided by SCS/GPC.

N

0 1,000 2,000 Feet

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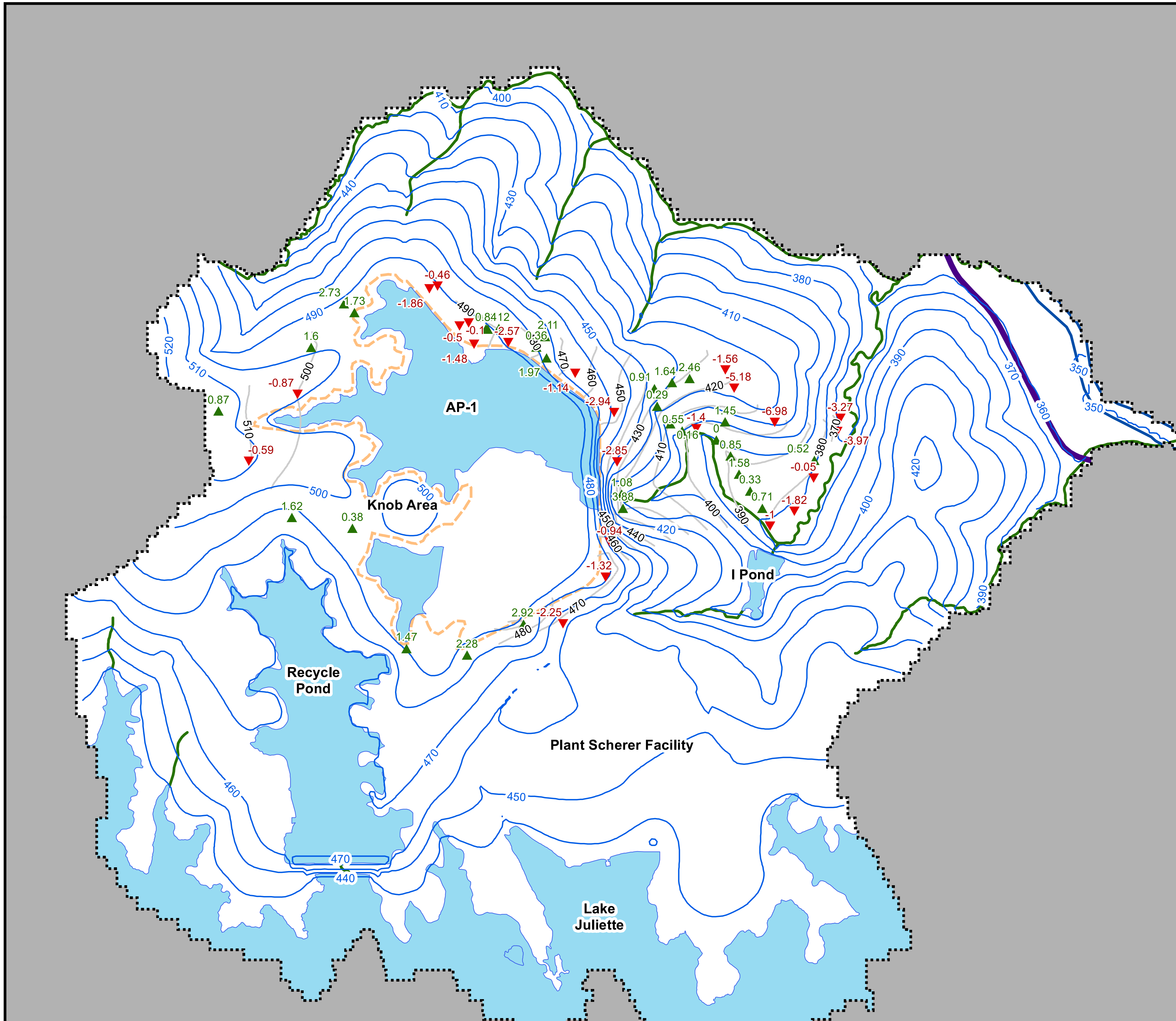
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME: **PRE-CLOSURE CCR AND DIKES/LAYER 1**
SIMULATED POTENTIOMETRIC SURFACE

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	**20**



Legend

- Water Surface
- US Highway 23
- Ocmulgee River
- Streams
- AP-1 Boundary
- Active Model Domain
- Inactive Cells
- Simulated head higher than observed head (ft)
- Simulated head lower than observed head (ft)
- 500 Simulated Potentiometric Surface Contour (ft msl)
- 500 Observed Potentiometric Surface Contour (ft msl)

Note:
Observed June 13, 2016 water levels provided by SCS/GPC.
Potentiometric surface contours interpolated in Surfer.

N

0 2,000 4,000 Feet

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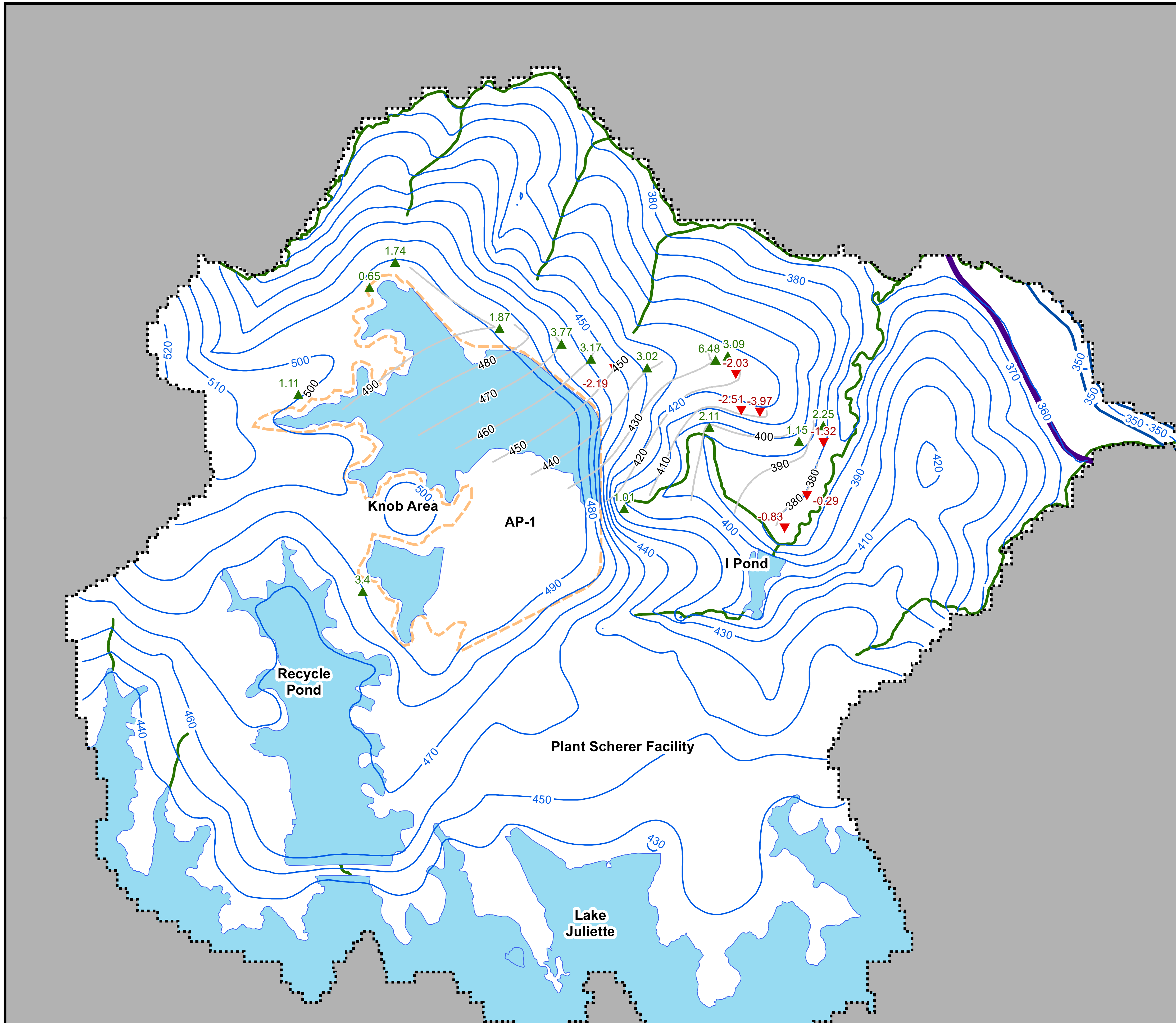
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE SAPROLITE/LAYER 2 SIMULATED AND OBSERVED POTENTIOMETRIC SURFACE

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	21



Legend

- Water Surface
- US Highway 23
- Ocmulgee River
- Streams
- AP-1 Boundary
- Inactive Cells
- Active Model Domain
- Simulated head higher than observed head (ft)
- Simulated head lower than observed head (ft)
- 500 Observed Potentiometric Surface Contour (ft msl)
- 500 Simulated Potentiometric Surface Contour (ft msl)

Note:
Observed June 13, 2016 water levels provided by SCS/GPC.
Potentiometric surface contours interpolated in Surfer.

N

0 2,000 4,000 Feet

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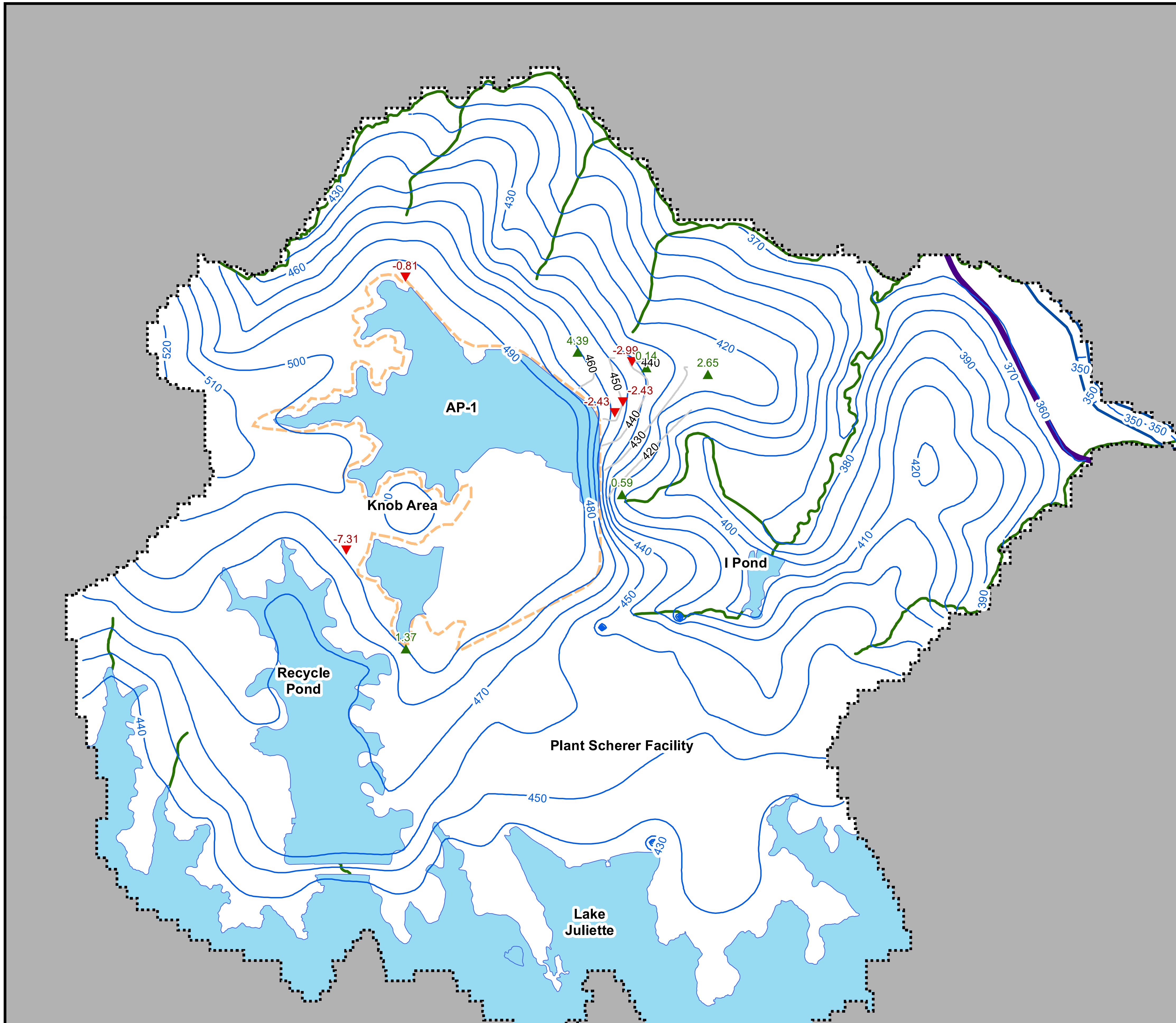
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE PWR/LAYER 3
SIMULATED AND OBSERVED POTENTIOMETRIC SURFACE

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	22



Legend

- Water Surface
- US Highway 23
- Ocmulgee River
- Streams
- AP-1 Boundary
- Active Model Domain
- Inactive Cells
- Simulated head higher than observed head (ft)
- Simulated head lower than observed head (ft)
- 500 Observed Potentiometric Surface Contour
- 500 Simulated Potentiometric Surface Contour

Note:
Observed June 13, 2016 water levels provided by SCS/GPC.
Potentiometric surface contours interpolated in Surfer.

N

0 2,000 4,000 Feet

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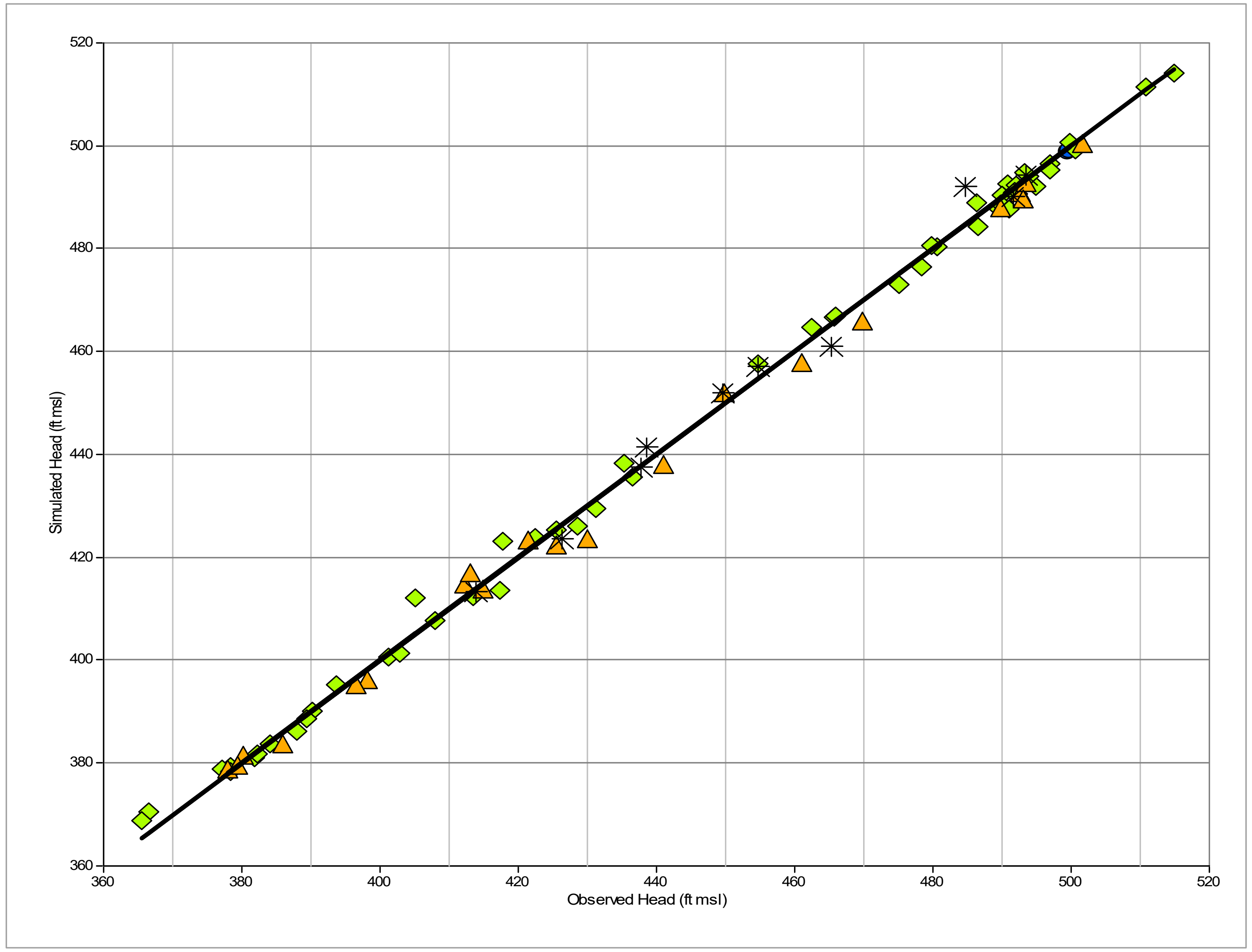
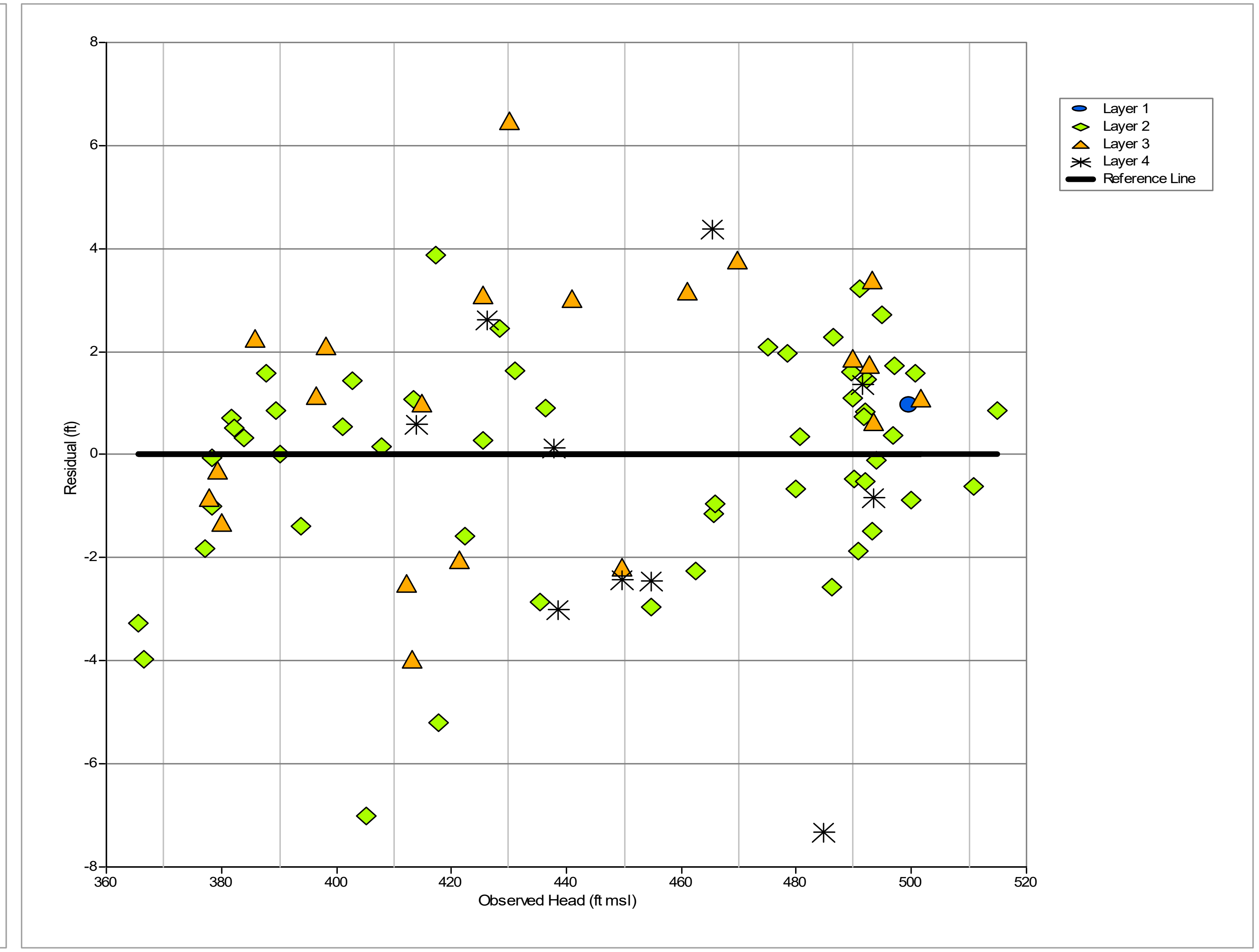
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:
PRE-CLOSURE FBR/LAYER 4
SIMULATED AND OBSERVED POTENTIOMETRIC SURFACE

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	**23**





Note:
Observed June 13, 2016 water levels provided by SCS/GPC.

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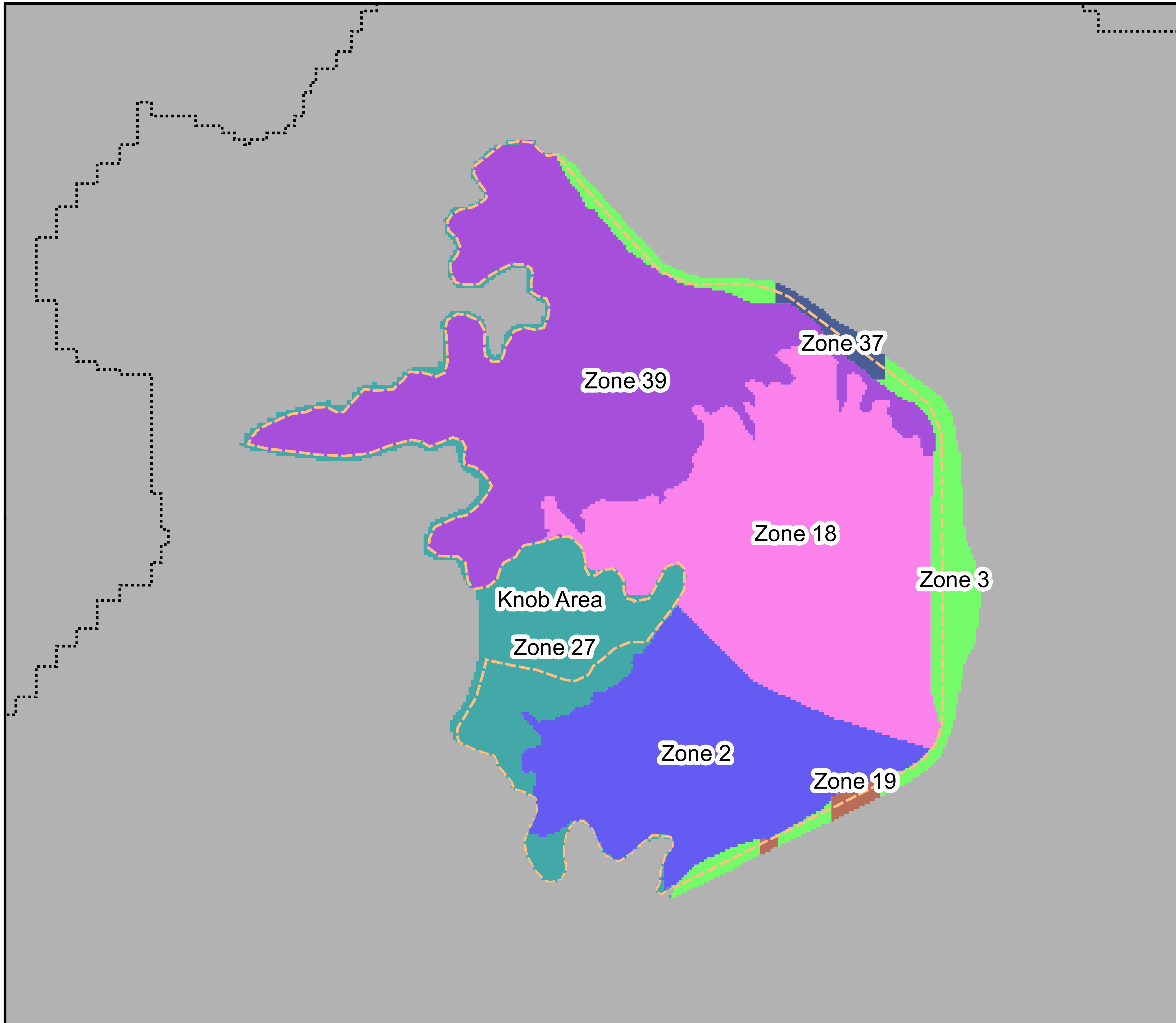
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

PLOTS OF OBSERVED VERSUS SIMULATED HEADS AND RESIDUALS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	**24**



Legend

- Active Model Domain
- Inactive Cells
- AP-1 Boundary

Hydraulic Conductivity Zone

Zone #	K_h (ft/d)	K_z (ft/d)
2	4.08E+00	4.08E-01
3	1.00E-02	5.00E-03
18	1.31E+00	1.31E-01
19	6.40E-03	1.28E-03
27	1.70E+01	1.70E+01
37	8.00E-03	8.00E-04
39	1.70E+01	1.70E+01

Note:
Horizontal hydraulic conductivity in feet/day.
Values are summarized in Table 9.

0 1,000 2,000 Feet

N

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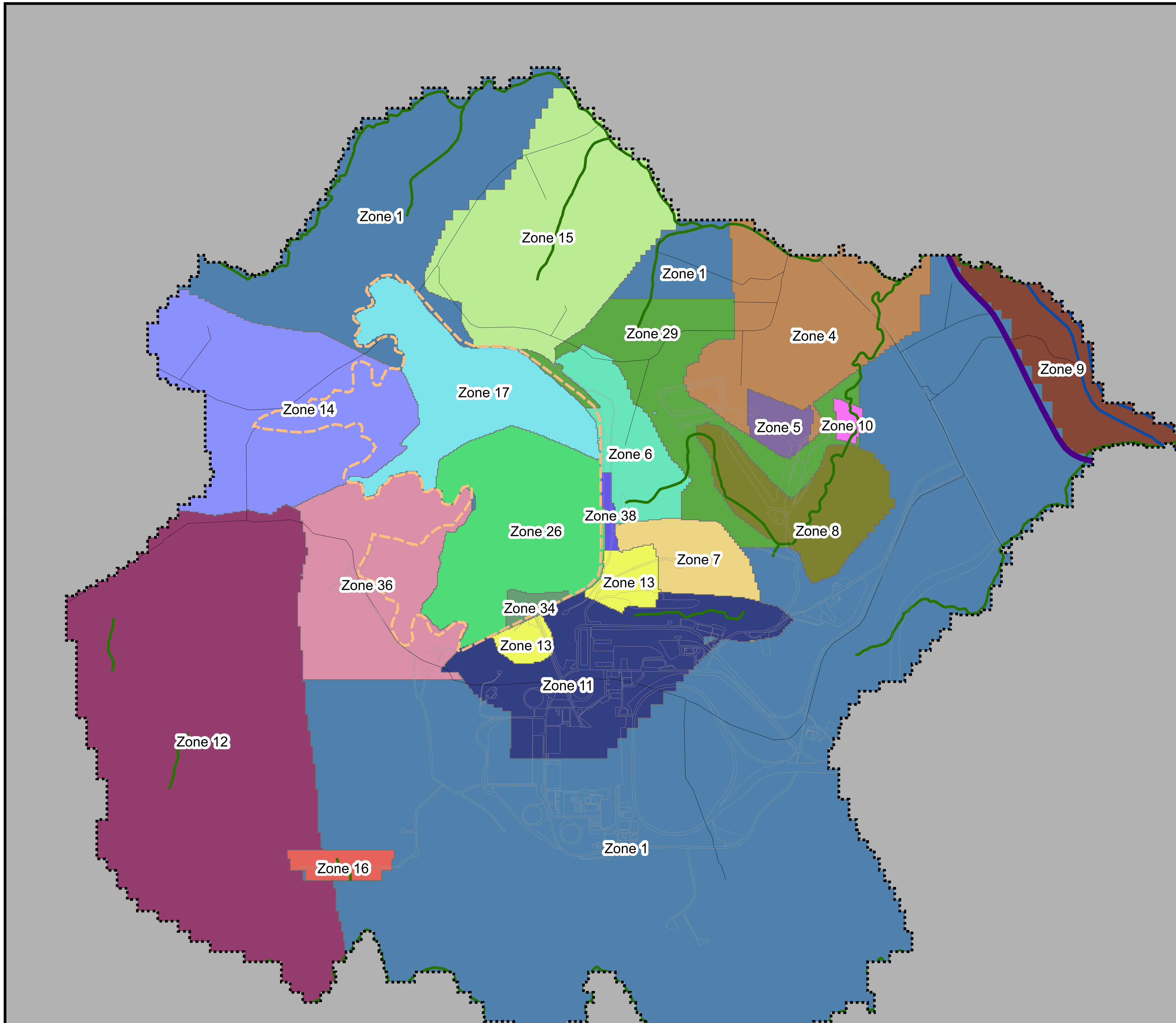
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE MODEL LAYER 1
HYDRAULIC CONDUCTIVITY VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	**25**



Legend

- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Hydraulic Conductivity Zone

Zone #	Kxy (ft/d)	Kz (ft/d)
1	3.85E-01	7.00E-02
4	3.20E-01	6.40E-02
5	1.00E-01	2.00E-02
6	3.00E+00	1.44E-01
7	4.99E-01	9.99E-02
8	3.04E+00	6.08E-01
9	9.00E+00	1.80E+00
10	5.00E+00	1.00E+00
11	1.04E+00	1.76E-01
12	2.35E+00	4.70E-01
13	1.06E-01	3.66E-03
14	8.00E-01	1.00E-01
15	7.20E-01	1.44E-01
16	1.60E-03	1.60E-03
17	1.54E-01	2.80E-02
26	3.07E-01	3.07E-02
29	7.68E-01	1.02E-01
34	3.00E-01	3.00E-02
36	6.50E-01	1.10E-01
38	2.00E-01	2.00E-02

Note:
Hydraulic conductivity in feet/day. Values are summarized in Table 9.

0 1,000 2,000 Feet

N

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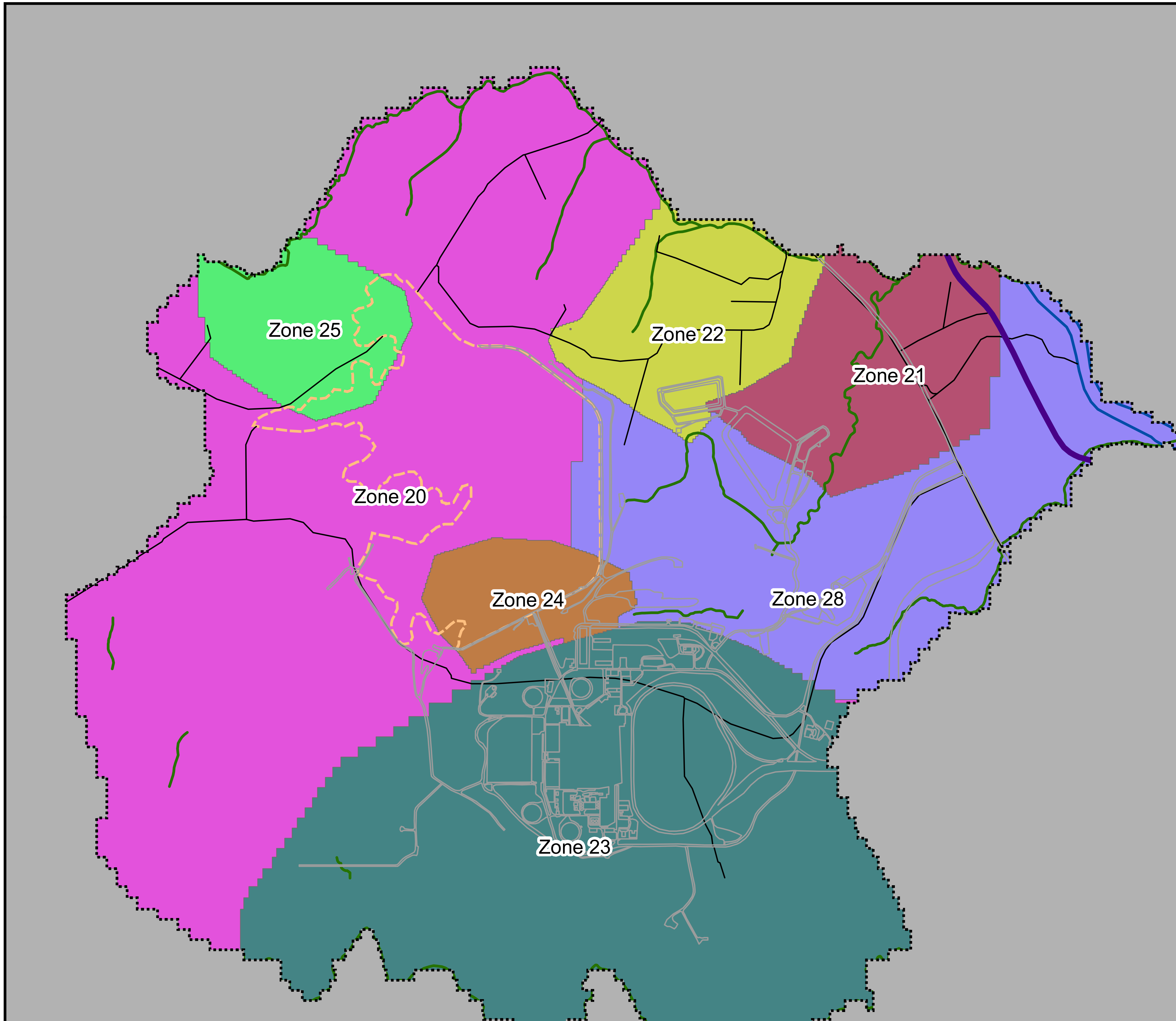
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE MODEL LAYER 2 HYDRAULIC CONDUCTIVITY VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	**26**



Legend

- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Hydraulic Conductivity Zone

Zone #	Kh (ft/d)	Kv (ft/d)
20	3.30E-01	3.30E-02
21	1.92E-01	3.84E-02
22	2.40E+00	4.80E-02
23	4.00E+00	8.00E-01
24	6.79E-01	1.36E-01
25	1.60E+00	3.20E-01
28	4.11E-01	8.21E-02

Note:
Hydraulic conductivity in feet/day.
Values are summarized in Table 9.

0 1,000 2,000 Feet

N

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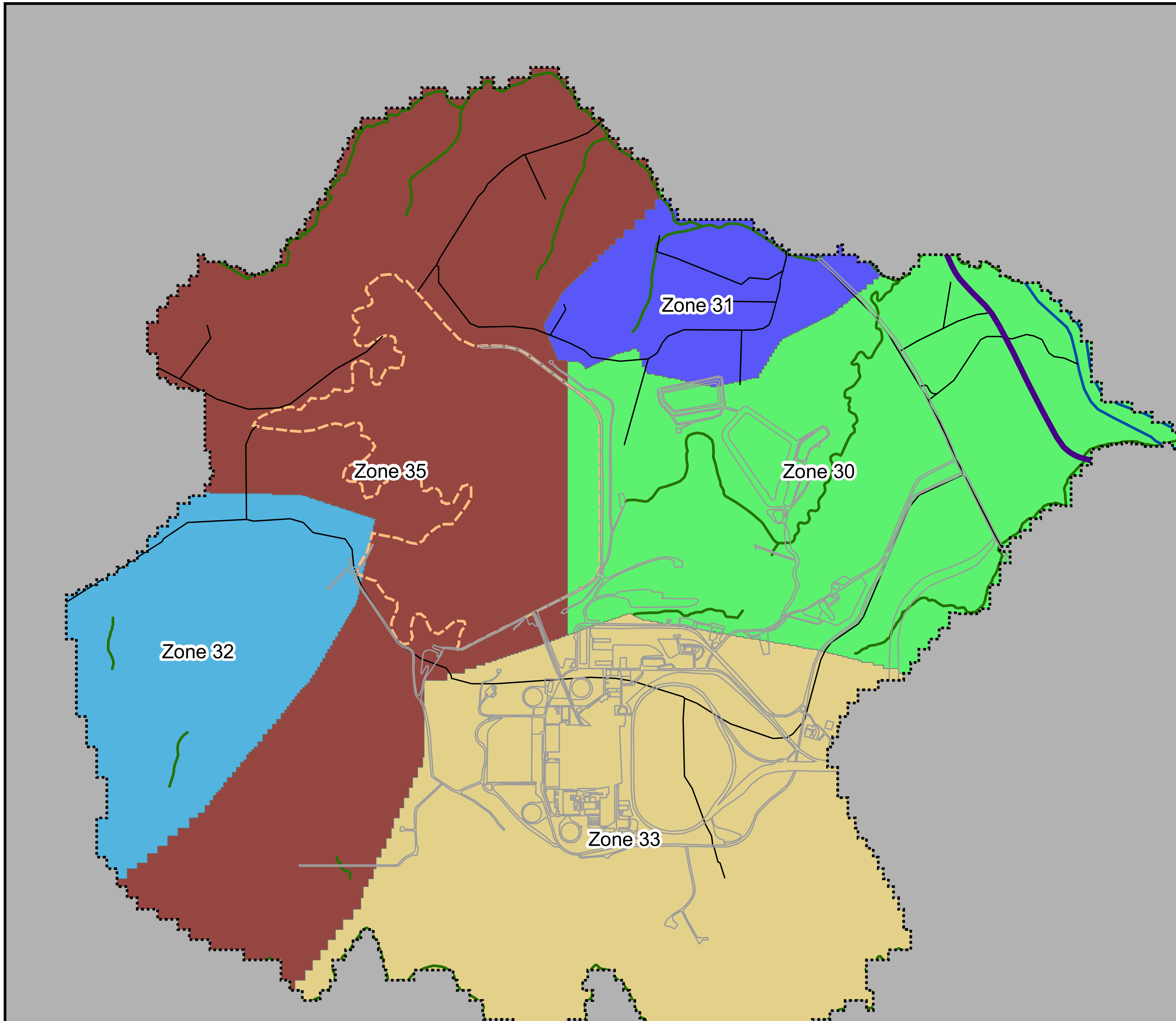
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE MODEL LAYER 3
HYDRAULIC CONDUCTIVITY VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	27



Legend

- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Hydraulic Conductivity Zone

Zone #	Kh (ft/d)	Kv (ft/d)
30	2.45E-01	1.23E-01
31	6.43E-01	2.05E-01
32	1.60E+00	1.60E+00
33	4.00E-01	1.60E-01
35	4.90E-01	2.50E-01

Note:
Hydraulic conductivity in feet/day.
Values are summarized in Table 9.

0 1,000 2,000 Feet

N

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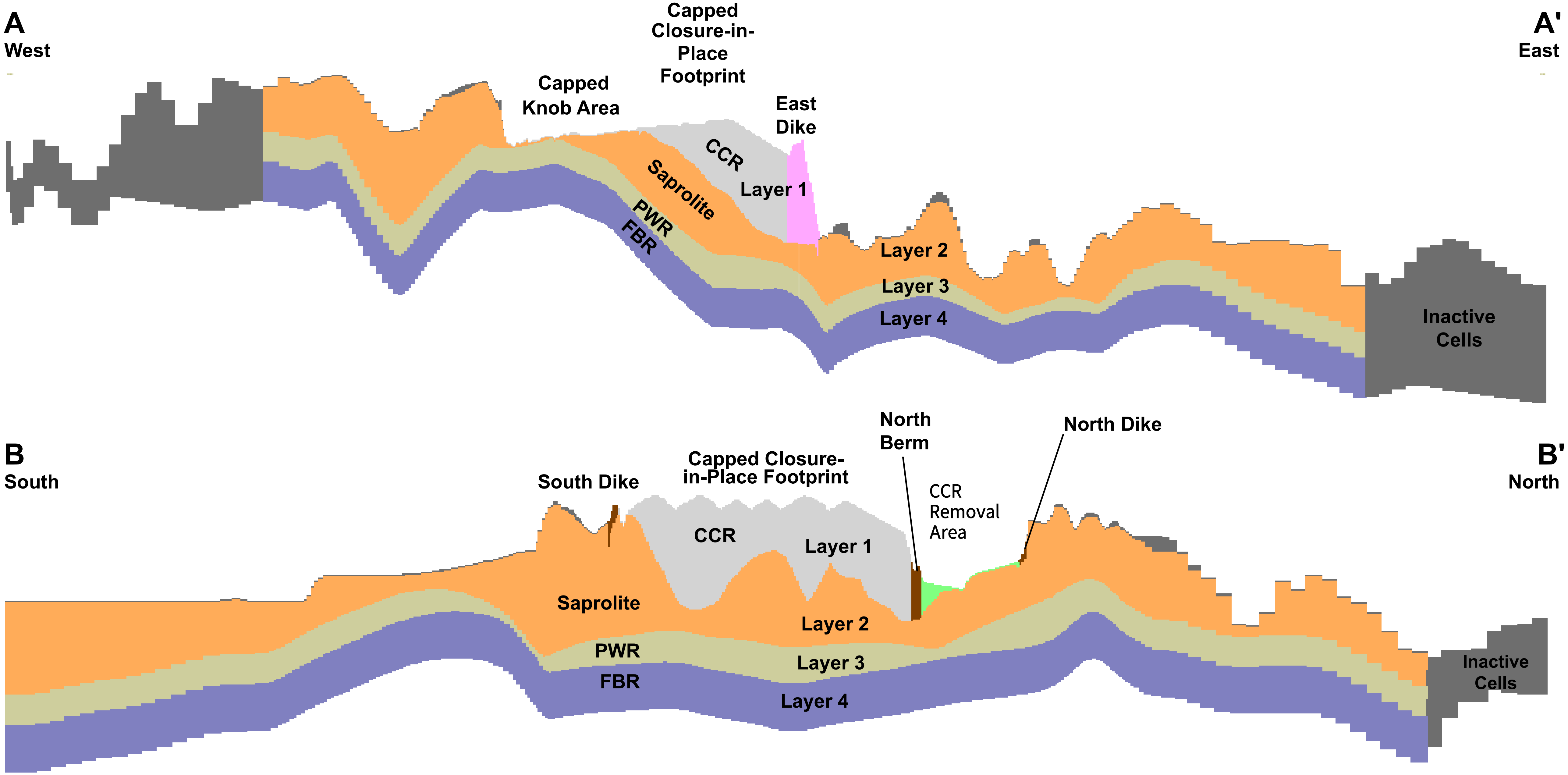
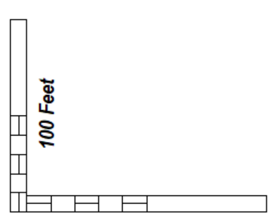
GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE-CLOSURE MODEL LAYER 4
HYDRAULIC CONDUCTIVITY VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	28





Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

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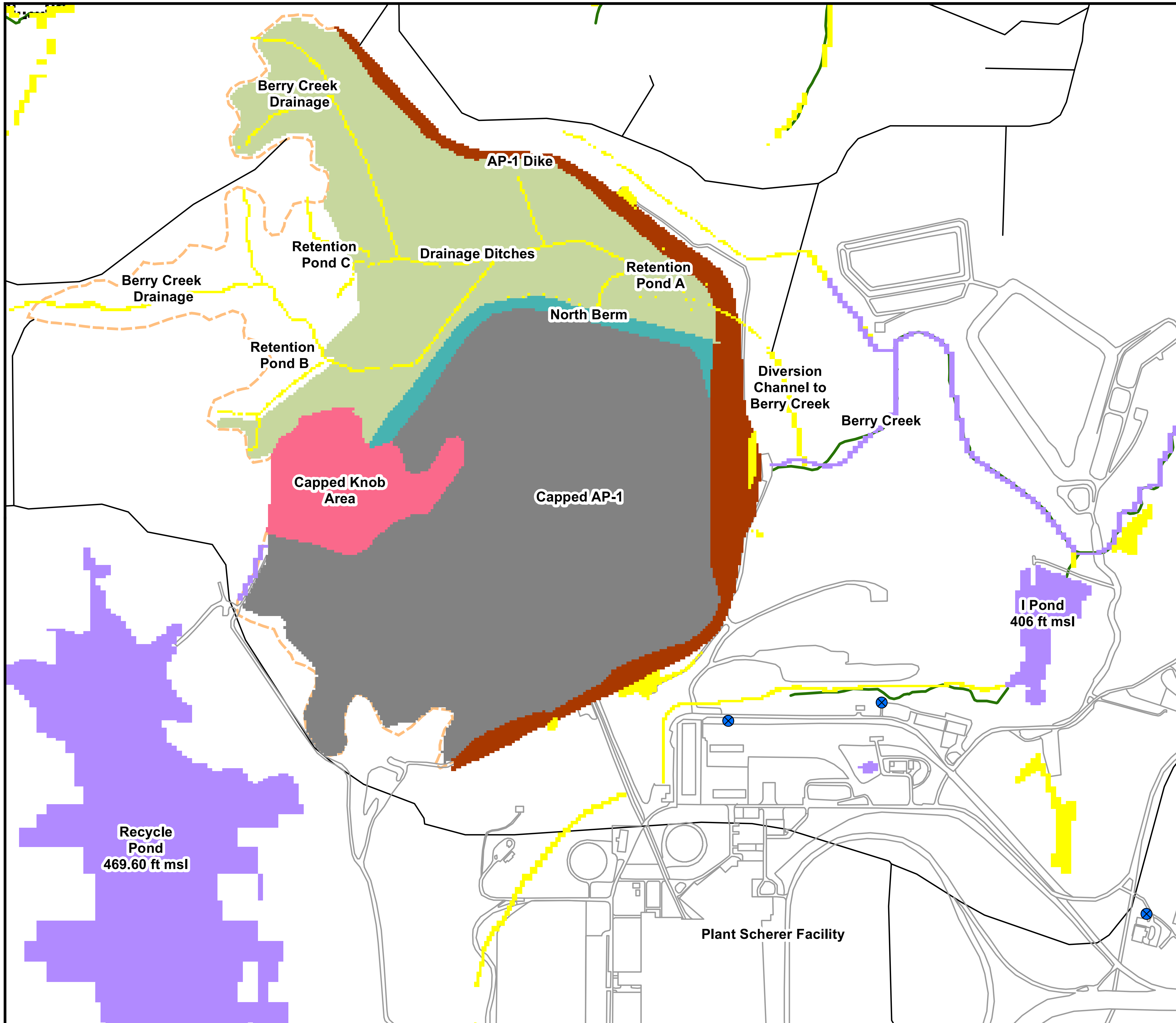
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME: **POST-CLOSURE CONCEPTUAL MODEL LAYERS**

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	29



Legend

- Road
- Streams
- AP-1 Boundary
- Plant Scherer Buildings and Roads
- Pumping Well
- Drain Cells
- River Cells
- AP-1 Dike
- Graded Fill
- Capped AP-1
- Capped Knob Area
- North Berm
- Active Model Domain

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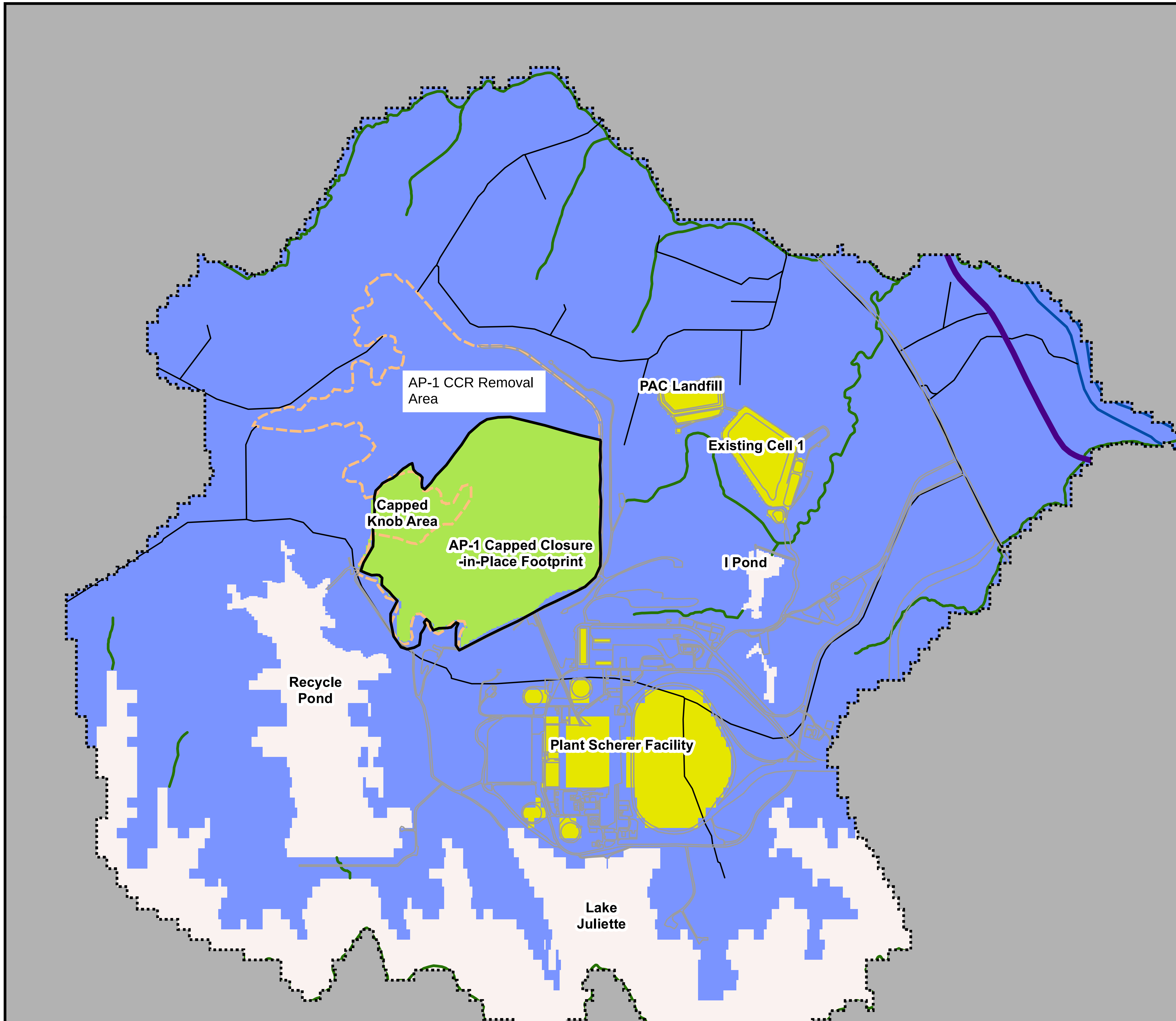
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
POST-CLOSURE MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	30



Legend

- Approximate AP-1 Cap Outline
- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Recharge Zone

zone

zone	Recharge
1	*0 ft/d*
2	*0 ft/d*
8	*0 ft/d*
9	*1.27E-3 ft/d*

Note:
Recharge values are shown in units of feet per day and are applied to the highest active model layer.

0 2,000 4,000 Feet

N

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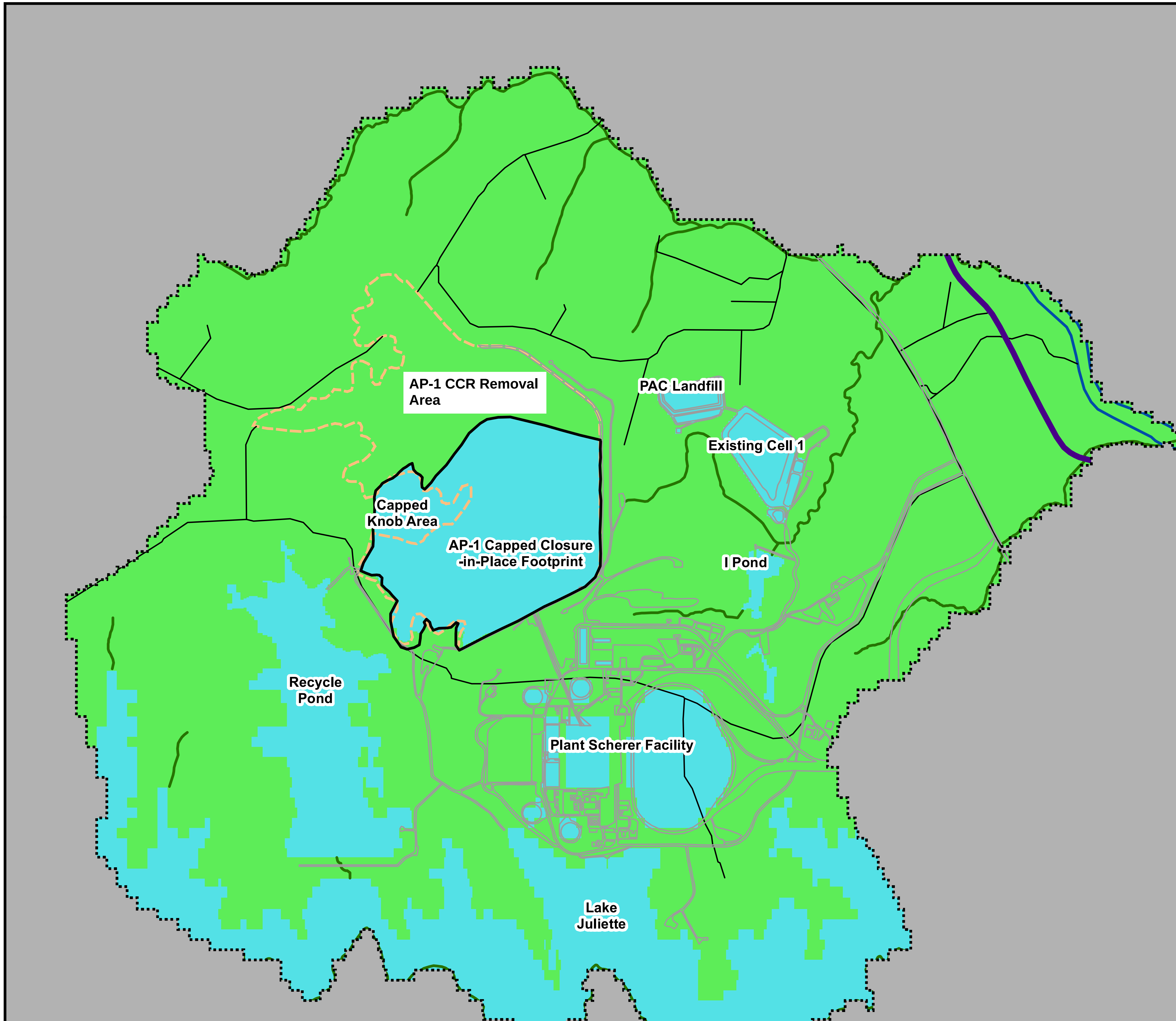
GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME:
POST-CLOSURE MODEL RECHARGE VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	**31**



Legend

- Approximate AP-1 Cap Outline
- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Evapotranspiration Zone

- 1 *Rate = 0 ft/d ExtDepth = 0 ft*
- 3 *Rate = 0.0077 ft/d ExtDepth = 4 ft*

Note:
Evapotranspiration rates are shown in units of feet per day and are applied to the highest active model layer.

N

0 2,000 4,000 Feet

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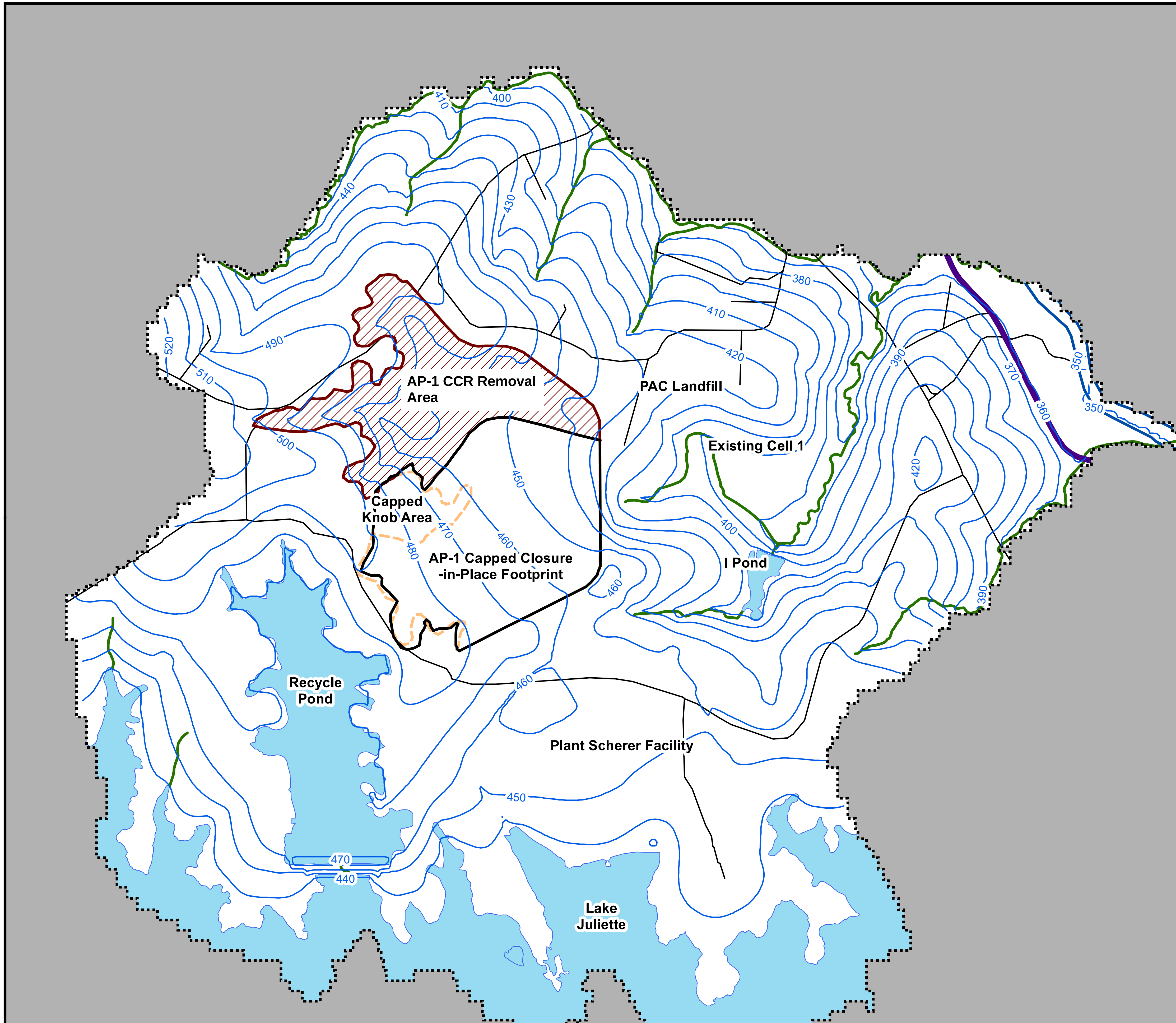
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:
POST-CLOSURE MODEL EVAPOTRANSPIRATON VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/22/2020	32



Legend

- Water Surface
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary
- 350 Simulated Potentiometric Surface (ft msl)
- Active Model Domain
- Inactive Cells
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint

Note:
Vertical Datum NAVD88

N

0 2,000 4,000 Feet

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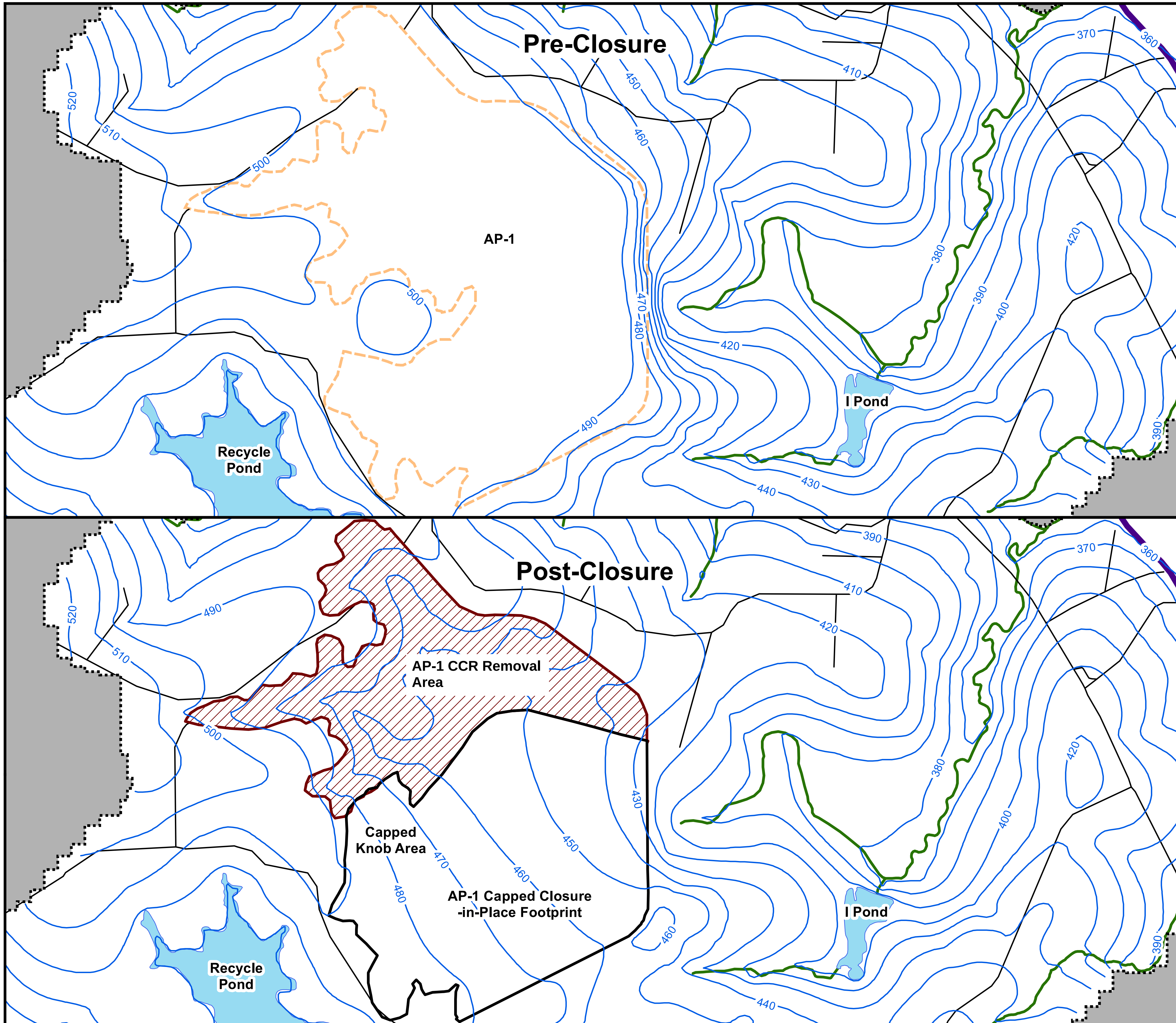
MONROE COUNTY, GEORGIA

GROUNDWATER MODELING SUMMARY REPORT FOR AP-1

FILENAME: **POST-CLOSURE SAPROLITE/LAYER 2 SIMULATED POTENTIOMETRIC SURFACE**

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/24/2020	**33**



Legend

- Water Surface
- US Highway 23
- Road
- Ocmulgee River
- Streams
- Active Model Domain
- Inactive Cells
- AP-1 Boundary
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- 400 Simulated Potentiometric Surface Contour (ft msl)

Note:
Vertical Datum NAVD88

N

0 1,500 3,000 Feet

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GROUNDWATER MODELING
SUMMARY REPORT FOR AP-1

FILENAME:

PRE- AND POST-CLOSURE SAPROLITE/LAYER 2
SIMULATED POTENTIOMETRIC SURFACES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	34

Appendix B
Groundwater Model AP-1 Closure Simulations, Advanced Engineering Methods Post-Closure Conditions

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Appendix B

Groundwater Model AP-1 Closure Simulations
Advanced Engineering Methods Post-Closure Conditions
Plant Scherer AP-1

Georgia Power Company

Project number: 60662731

SEPTEMBER 2024

Delivering a better world

Prepared for:

Georgia Power Company

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Table of Contents

Figures

1. Introduction

This Groundwater Modeling Closure Simulations Report presents numerical steady-state, groundwater flow modeling simulations of the various closure scenarios incorporating potential advanced engineering methods (AEMs) for closure of Plant Scherer Ash Pond 1 (i.e. AP-1, the site) coal combustion residuals (CCR) impoundment, located in Monroe County, Georgia.

The site background, conceptual site modal (CSM), and groundwater model design, setup, and calibration are documented in the Groundwater Modeling Report Summary. A site location map is provided as **Figure 1**.

2. Post-Closure Groundwater Models

2.1 Project Description

A steady-state groundwater flow model of the site was calibrated to represent the June 2016 (pre-closure) subsurface hydrogeologic conditions observed at the site. The model is well calibrated and model projections for the pre-closure conditions based on 2016 model inputs are consistent with recent field measurements. For these reasons, this steady state model is well suited for this evaluation. The groundwater model was used to provide specific information which was used to compare the different post-closure scenarios. The calibrated, pre-closure model was modified to represent post-closure conditions for the baseline closure (consolidated with a smaller closure-in-place footprint) as well as incorporating the use of AEMs with three different scenarios for the AP-1 closure design:

- Scenario 0: Pre-Closure Conditions
- Scenario 1: Baseline Closure Design (no AEMs);
- Scenario 2: Baseline Closure with Downgradient Slurry Walls AEM;
- Scenario 3: Baseline Closure with Final Cover System Extended over the Knob Area AEM;
- Scenario 4: Baseline Closure with Downgradient Slurry Walls and Extension of the Final Cover System over the Knob Area AEM

Groundwater model featuring surface elevations and subsurface layers were constructed consistent with the CSM (WSP, 2024). However, the groundwater model further divides the overburden into three layers including saprolite, weathered bedrock and fractured bedrock to better reflect hydrogeologic parameters within each layer. The cross sections for the modeled site setting are provided as **Figure 2A** to **Figure 2E**.

Particle tracking was also performed. Particle tracking helps to visualize groundwater flow fields, yielding insights into transit time and flow pathways. Particles were placed at four locations with the thickest portion of CCR below the potentiometric surface (see Figures 6A through 6E in Appendix B), as follows:

- Particle A was positioned based on relic topography according to pre-development conditions south of the Knob Area. In the pre-closure scenario, this particle is modeled to flow the south, and in all modeled closure scenarios, this particle is modeled to flow to the east northeast as a result of the closure's modeled effects on groundwater gradients / flow direction.
- Particles B and C were positioned closer to the AP-1, northeast and southeast of the Knob Area, respectively.
- Particle D was positioned adjacent to the AP-1 dam.

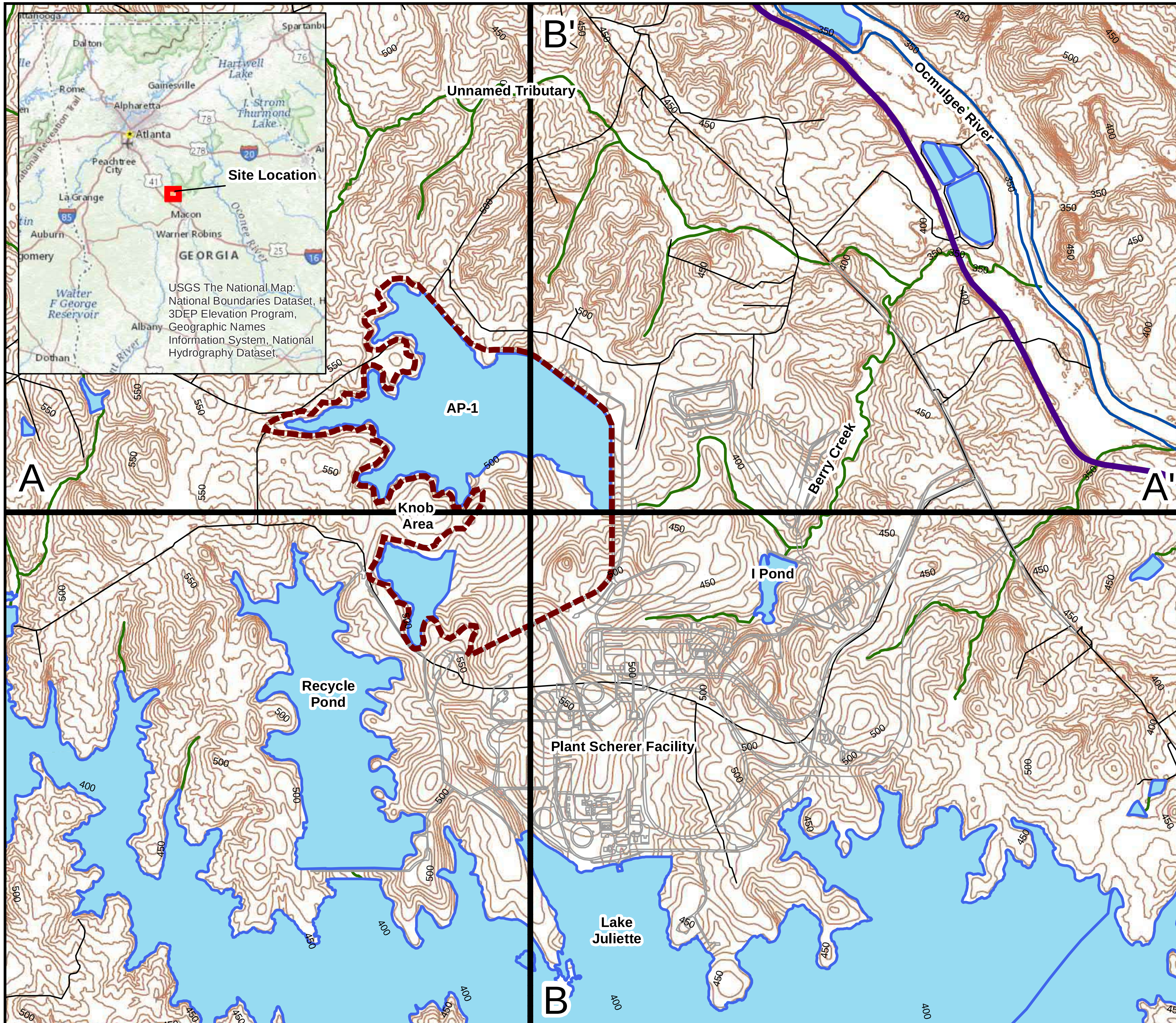
Particle A has a dual purpose to first show that in the pre-closure setting the groundwater flow gradient was to the south out of the AP-1 southern wall. Its second purpose was to show the groundwater head gradient in the post closure setting was to the east northeast in the direction of groundwater flow post closure.

2.2 Post-Closure Groundwater Model Parameters

Model parameters including hydraulic conductivity, recharge and evapotranspiration (ET) were modified to reflect the closure design in the post-closure model. Groundwater model setup for these parameters for Scenarios 1, 2, 3, and 4 are shown on Appendix B **Figure 3A** to **Figure 5B**. Figures showing the model parameter setup for Scenario 0 is provided in **Appendix A**, *Groundwater Model Summary Report – AP-1 Pre- and Post-Closure Conditions, Plant Scherer* (AECOM, August 2024).

2.3 Post-Closure Groundwater Model Simulation Results

Simulated potentiometric surface elevations for each scenario as discussed in the AEM report, are shown on **Figures 6A** to **Figure 6E**. Water particle tracks are shown for a water particle seeded at the locations of the greatest thickness of the CCR below the potentiometric surface within either the pre-closure condition or the closure-in-place footprint. **Figure 7** presents the thickness of CCR below the potentiometric surface for Scenario 3.



Legend

- Approximate AP-1 Boundary
- Water Surface
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- Topographic Contour (10 ft interval, ft msl)
- Cross Section Location

Note:
Vertical Datum NAVD 88
Topography Source:
USGS 7.5 Minute Quadrangle, East Juliette, 2011

N

0 2,000 4,000
Feet

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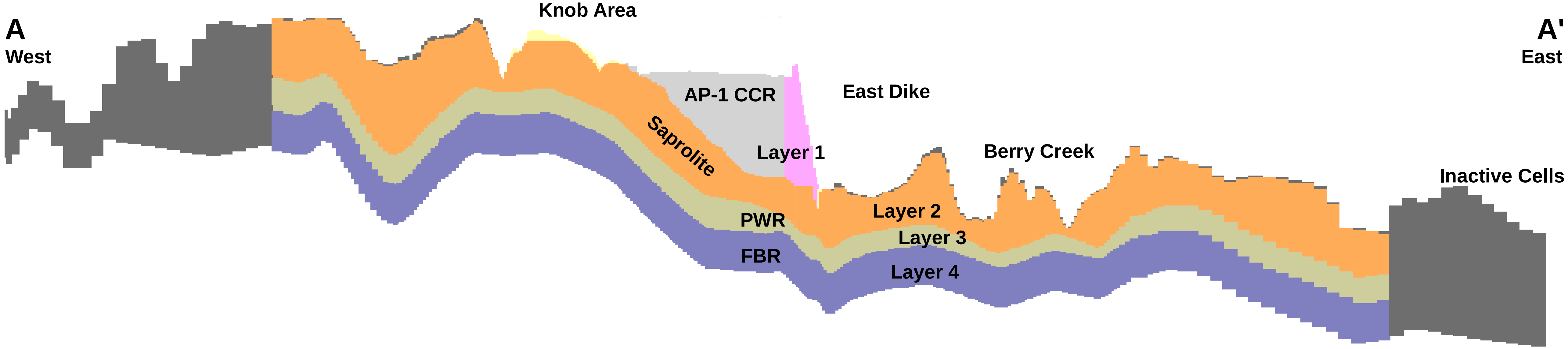
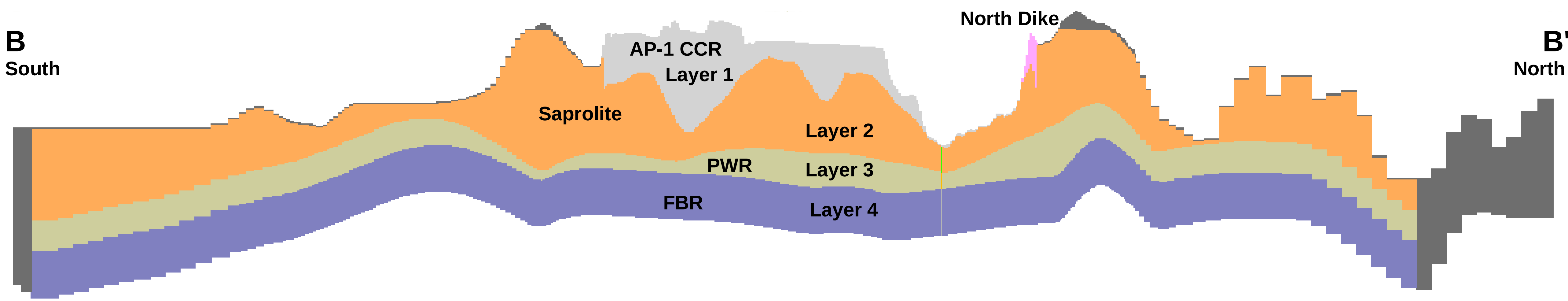
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

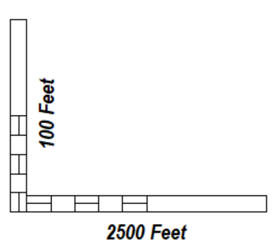
FILENAME:

SITE LOCATION AND TOPOGRAPHY

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/5/2021	1







Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

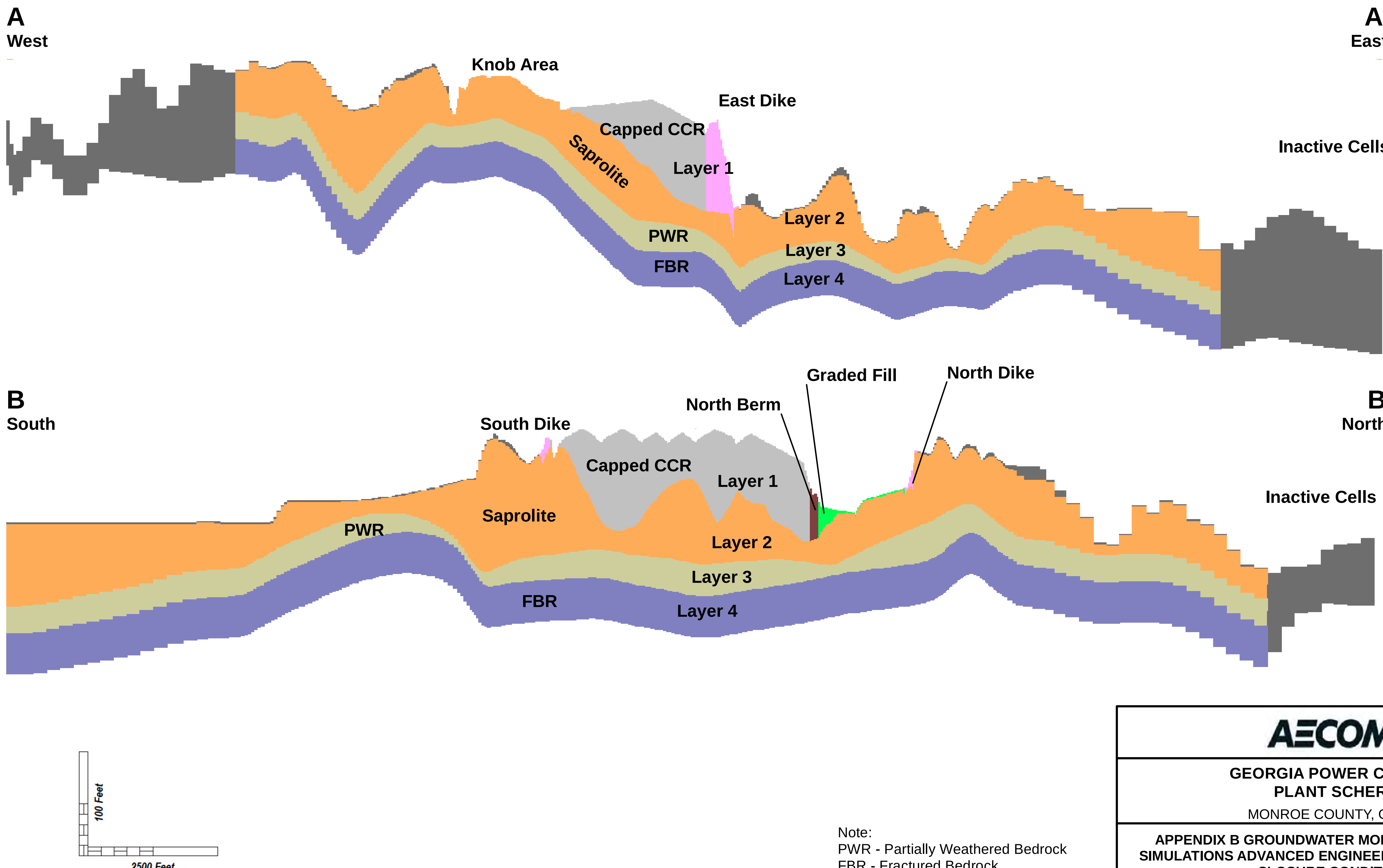
AECOM

GEORGIA POWER
COMPANY PLANT SCHERER
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 0 CONCEPTUAL MODEL LAYERS CROSS-SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	4/27/2020	2A



Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

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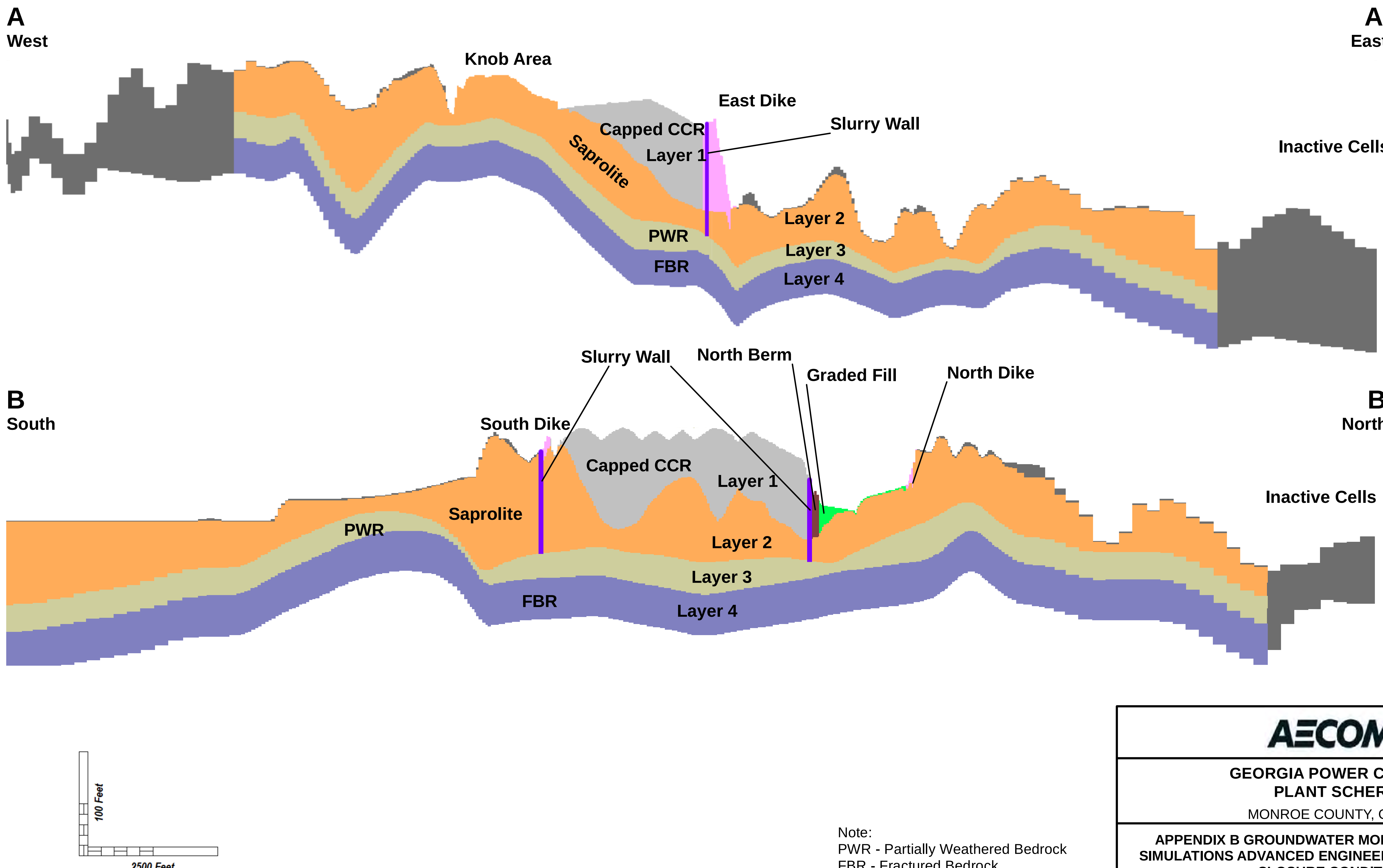
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 1 CONCEPTUAL MODEL LAYERS CROSS-SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	2B



Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

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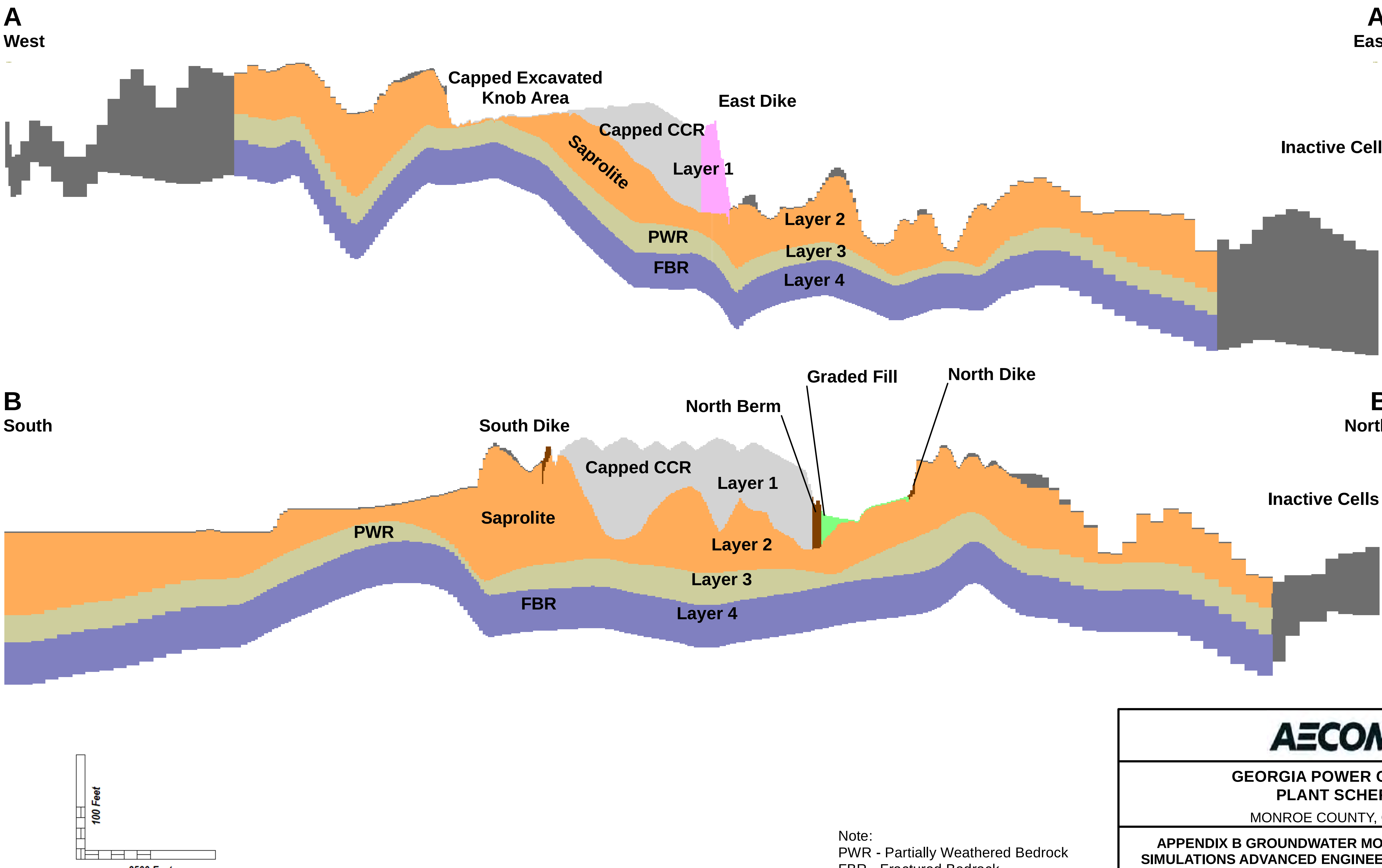
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 2 CONCEPTUAL MODEL LAYERS CROSS-SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/3/2021	2C



Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

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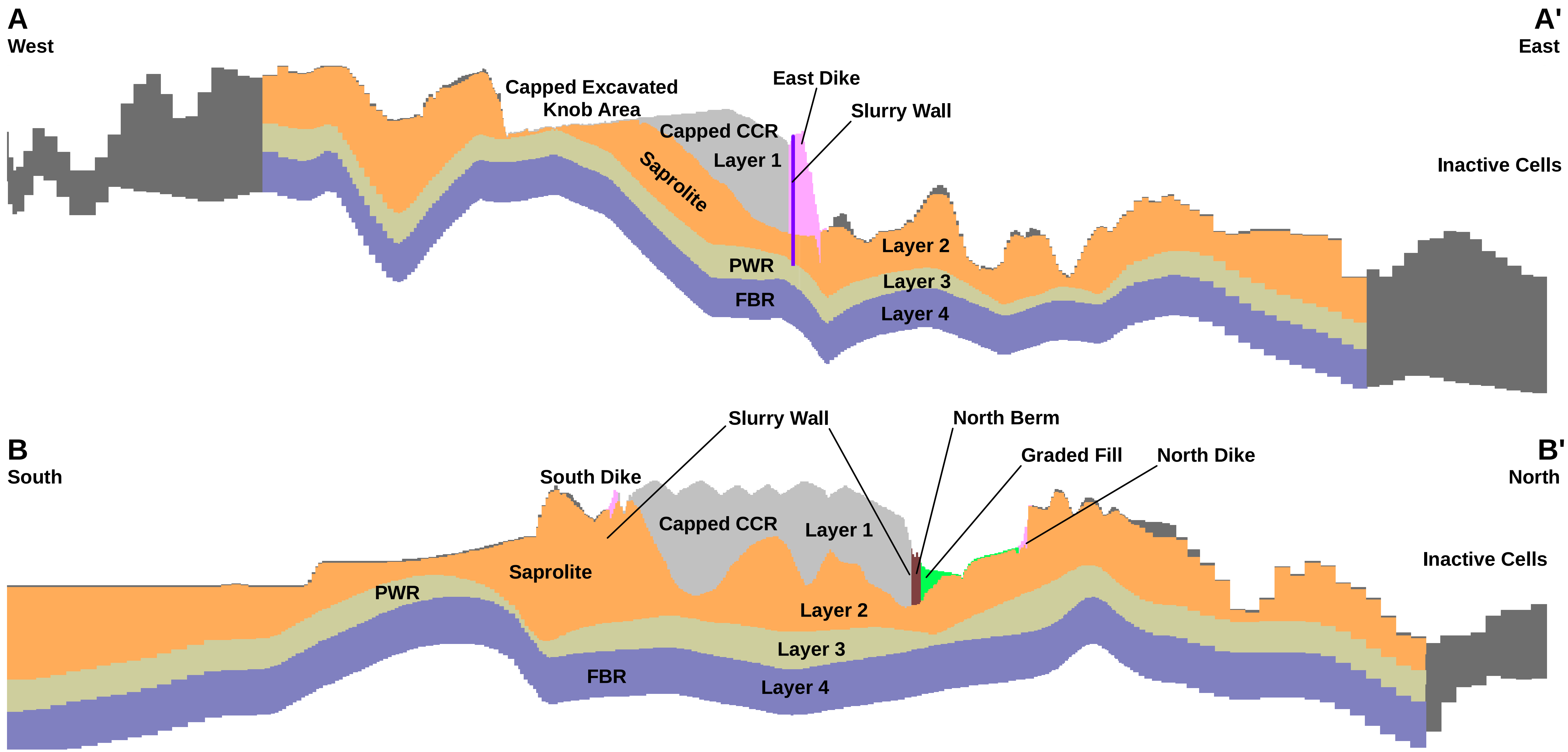
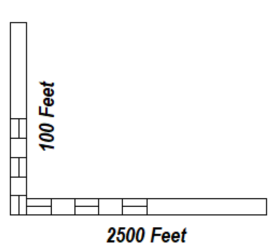
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 3 CONCEPTUAL MODEL LAYERS CROSS-SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	2D





Note:
PWR - Partially Weathered Bedrock
FBR - Fractured Bedrock
Vertical Exaggeration 20x
Cross sections were exported from Groundwater Vistas with color floods to represent model layers

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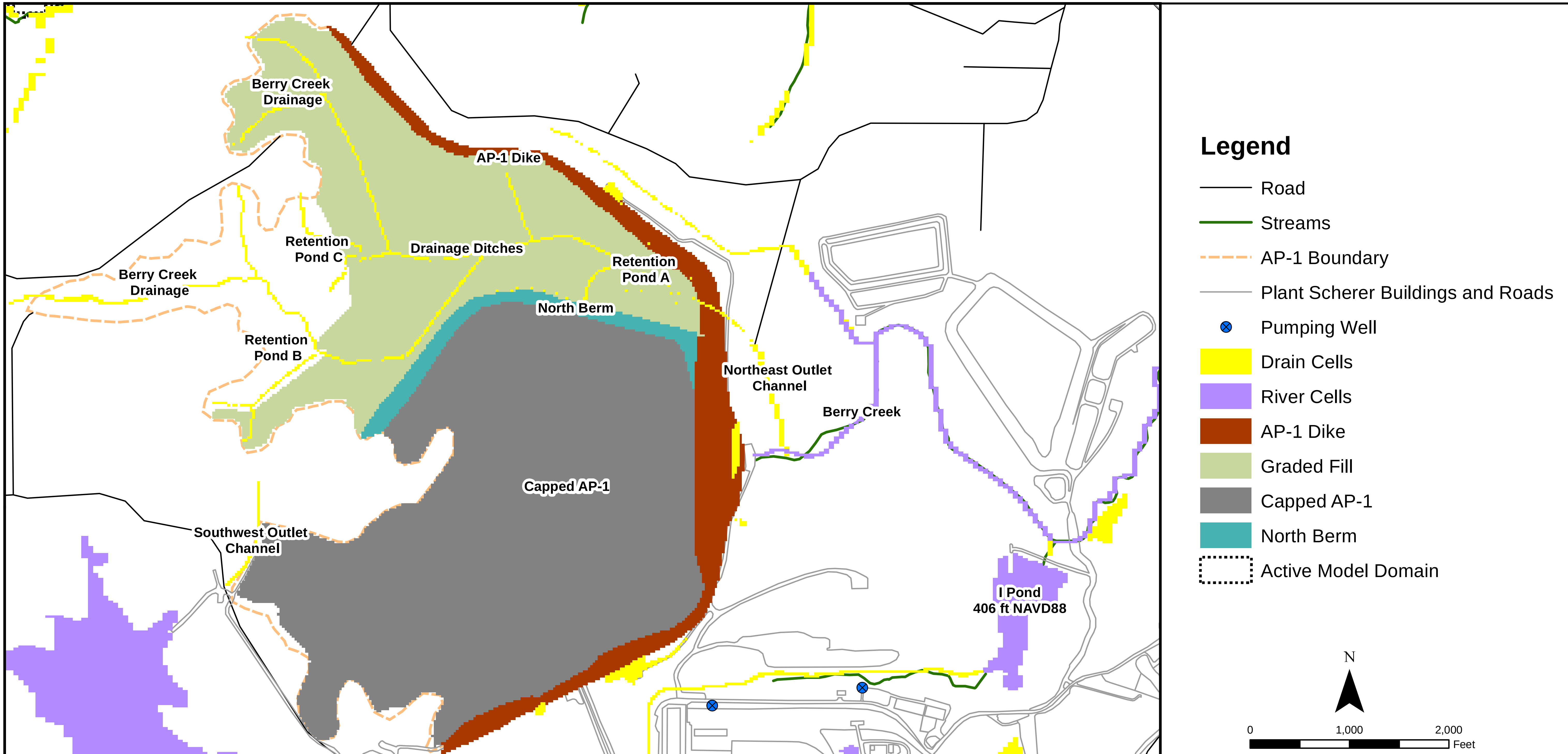
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 4 CONCEPTUAL MODEL LAYERS CROSS-SECTION

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	2E



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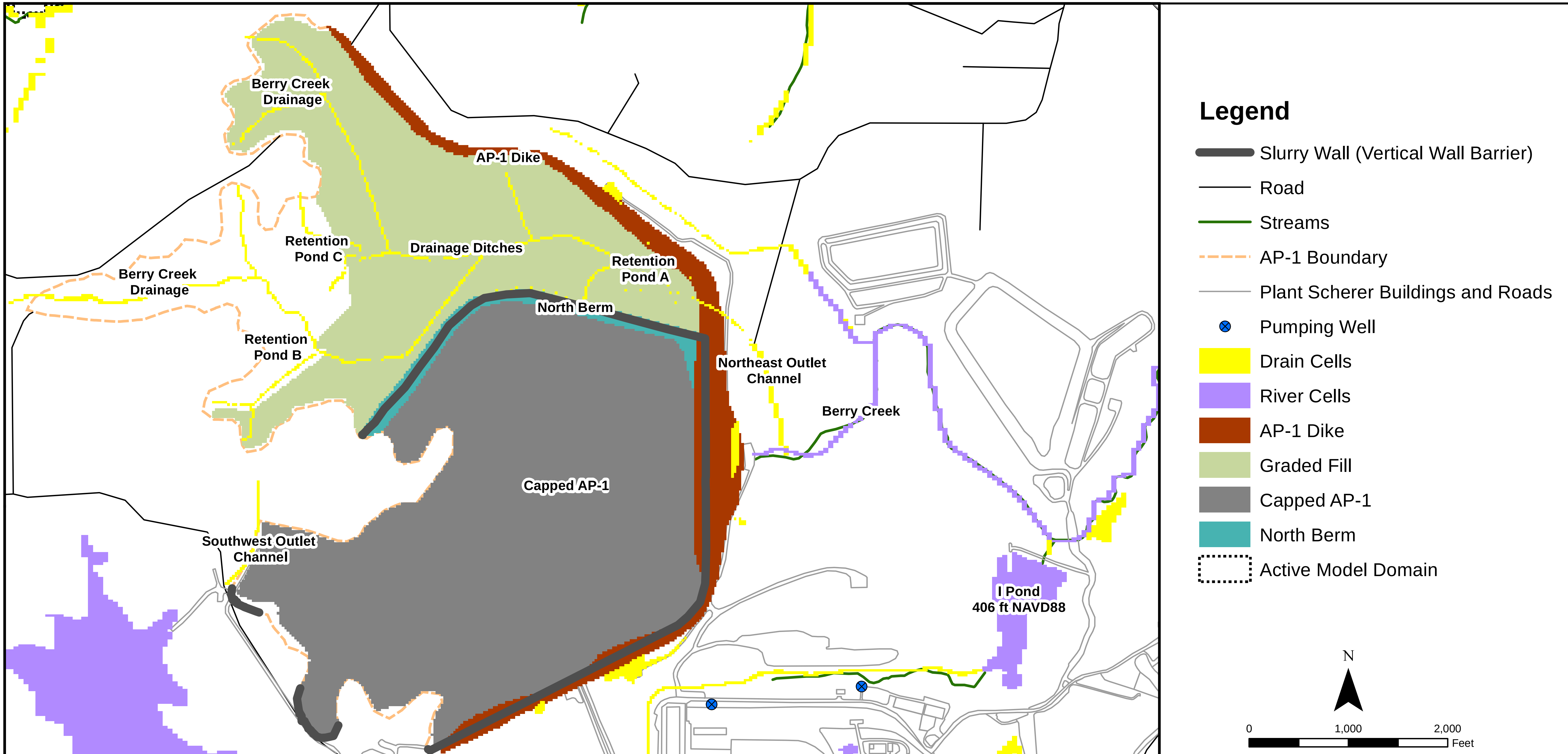
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:

SCENARIO 1 MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	3A



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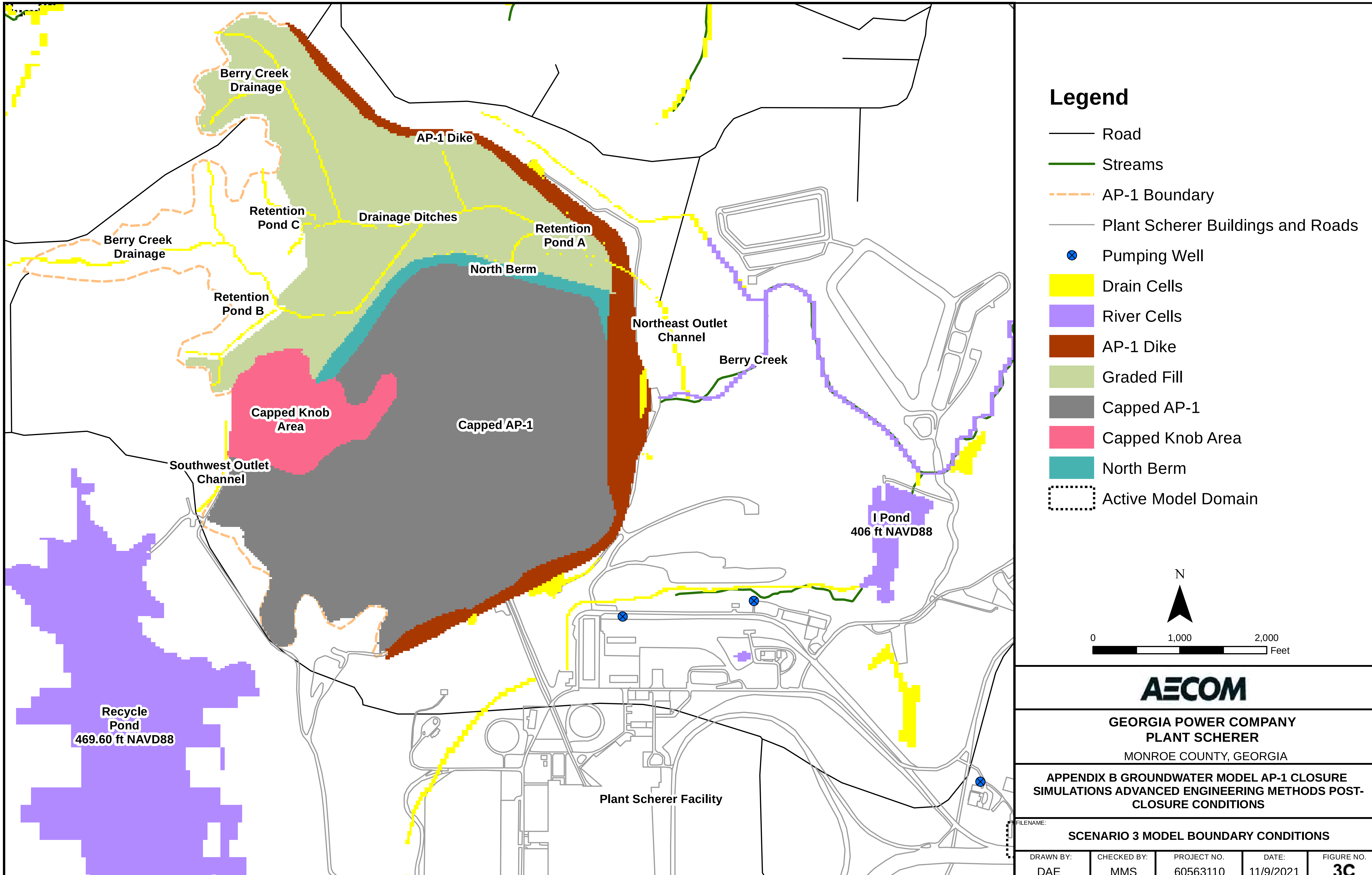
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 2 MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	**3B**



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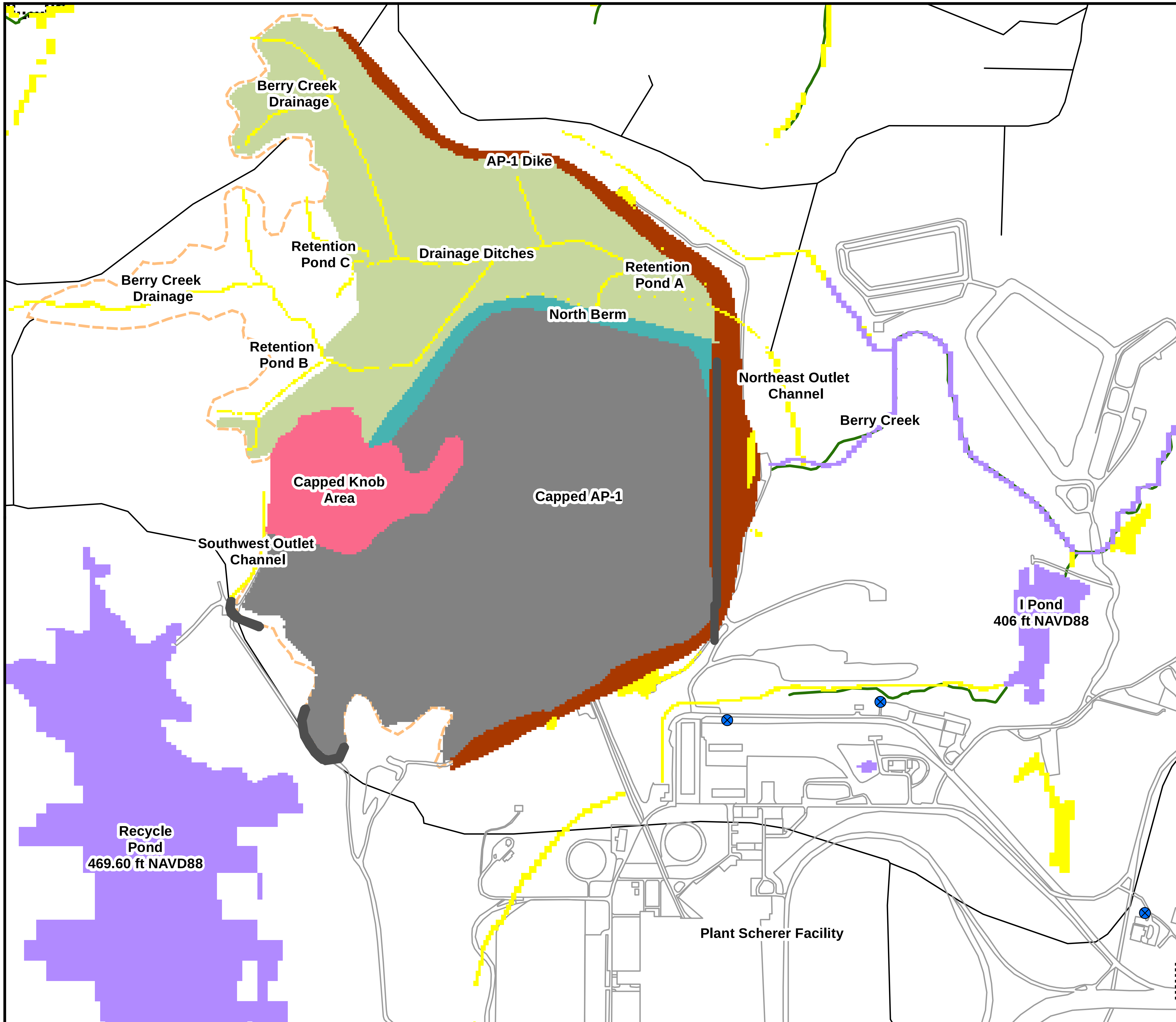
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:

SCENARIO 3 MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	3C



Legend

- Slurry Wall (Vertical Wall Barrier)
- Road
- Streams
- AP-1 Boundary
- Plant Scherer Buildings and Roads
- Pumping Well
- Drain Cells
- River Cells
- AP-1 Dike
- Graded Fill
- Capped AP-1
- Capped Knob Area
- North Berm
- Active Model Domain

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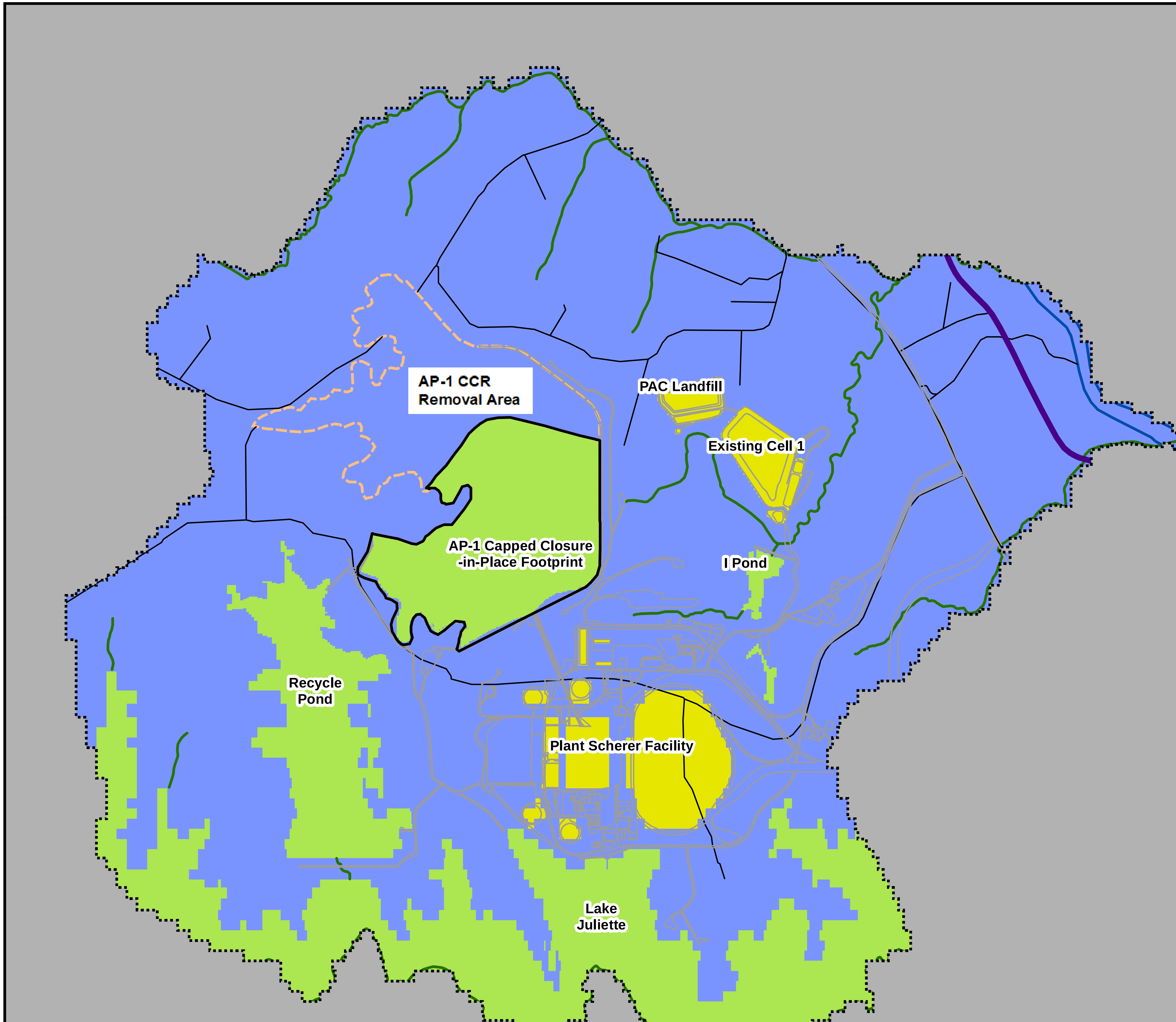
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 4 MODEL BOUNDARY CONDITIONS

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	11/9/2021	**3D**



Legend

- Approximate AP-1 Cap Outline
- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Recharge Zone

zone

- 1 *0 ft/d*
- 2 *0 ft/d*
- 9 *1.27E-3 ft/d*

Note:
Recharge values are shown in units of feet per day and are applied to the highest active model layer.

0 2,000 4,000 Feet

N

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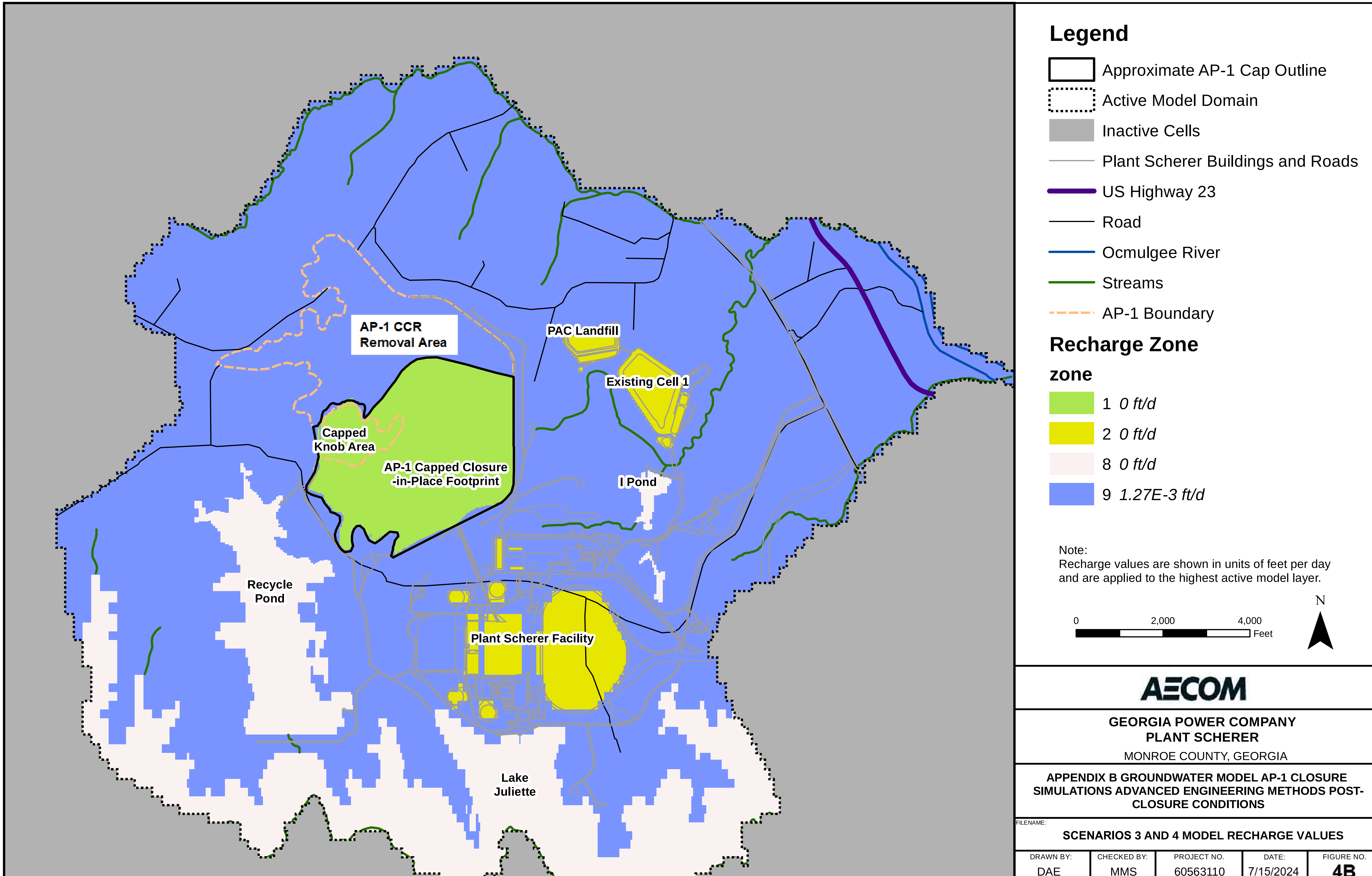
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:

SCENARIOS 1 AND 2 MODEL RECHARGE VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	7/15/2024	4A



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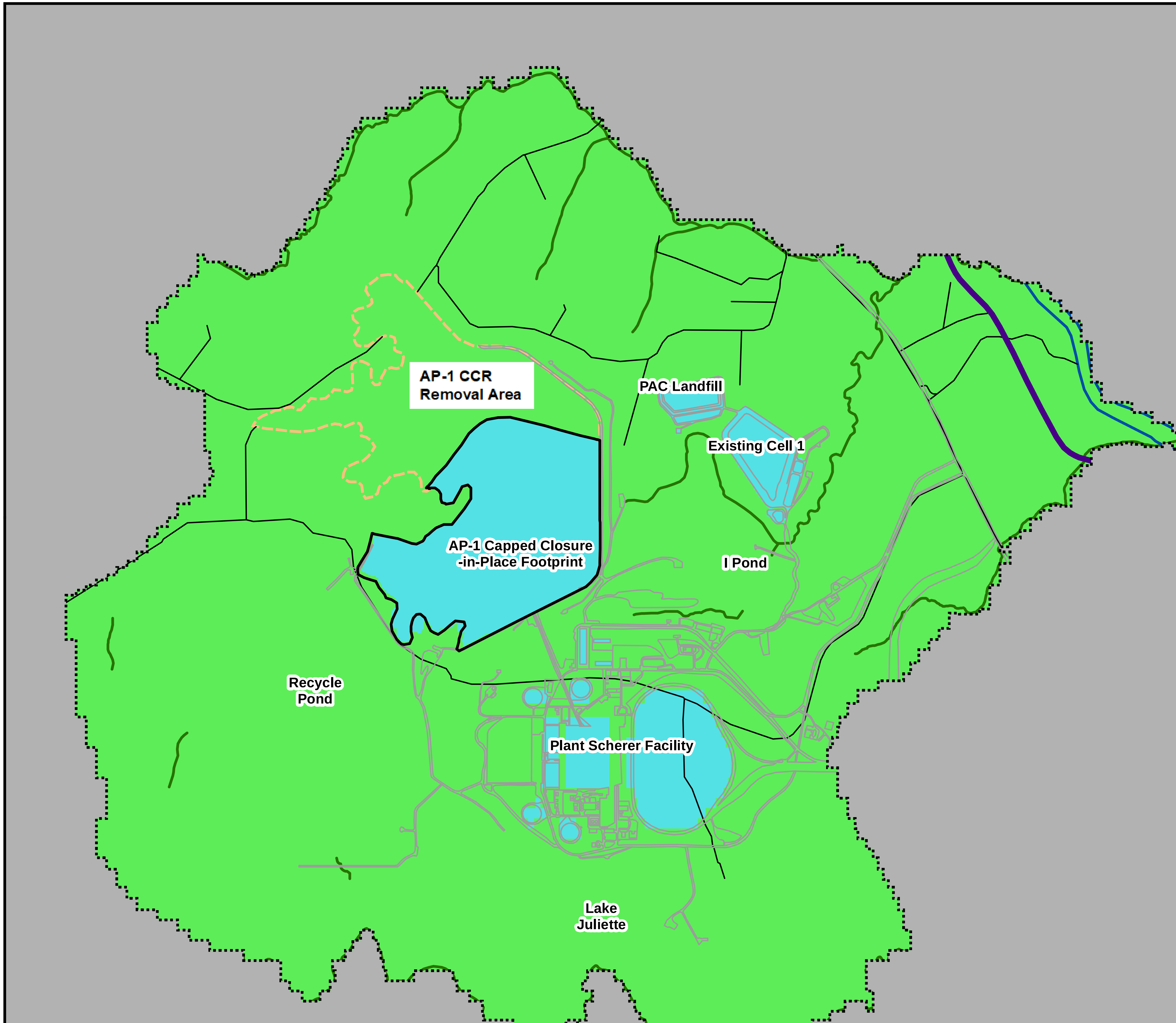
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:

SCENARIOS 3 AND 4 MODEL RECHARGE VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	7/15/2024	4B



Legend

- Approximate AP-1 Cap Outline
- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Evapotranspiration Zone

- 1 *Rate = 0 ft/d ExtDepth = 0 ft*
- 3 *Rate = 0.0077 ft/d ExtDepth = 4 ft*

Note:
Evapotranspiration rates are shown in units of feet per day and are applied to the highest active model layer.

N

0 2,000 4,000 Feet

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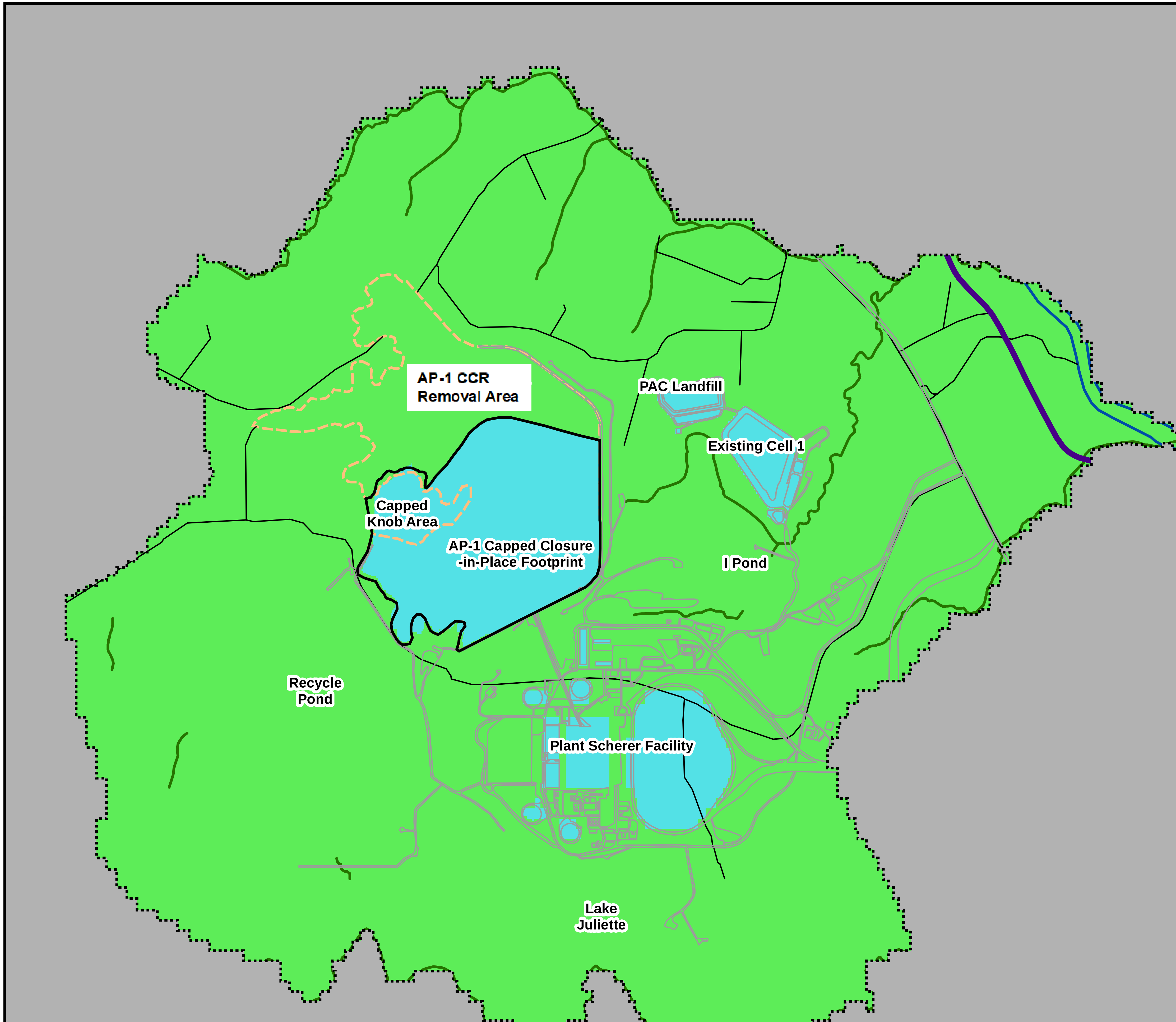
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIOS 1 AND 2 MODEL EVAPOTRANSPIRATON VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	7/15/2024	5A



Legend

- Approximate AP-1 Cap Outline
- Active Model Domain
- Inactive Cells
- Plant Scherer Buildings and Roads
- US Highway 23
- Road
- Ocmulgee River
- Streams
- AP-1 Boundary

Evapotranspiration Zone

- 1 *Rate = 0 ft/d ExtDepth = 0 ft*
- 3 *Rate = 0.0077 ft/d ExtDepth = 4 ft*

Note:
Evapotranspiration rates are shown in units of feet per day and are applied to the highest active model layer.

N

0 2,000 4,000 Feet

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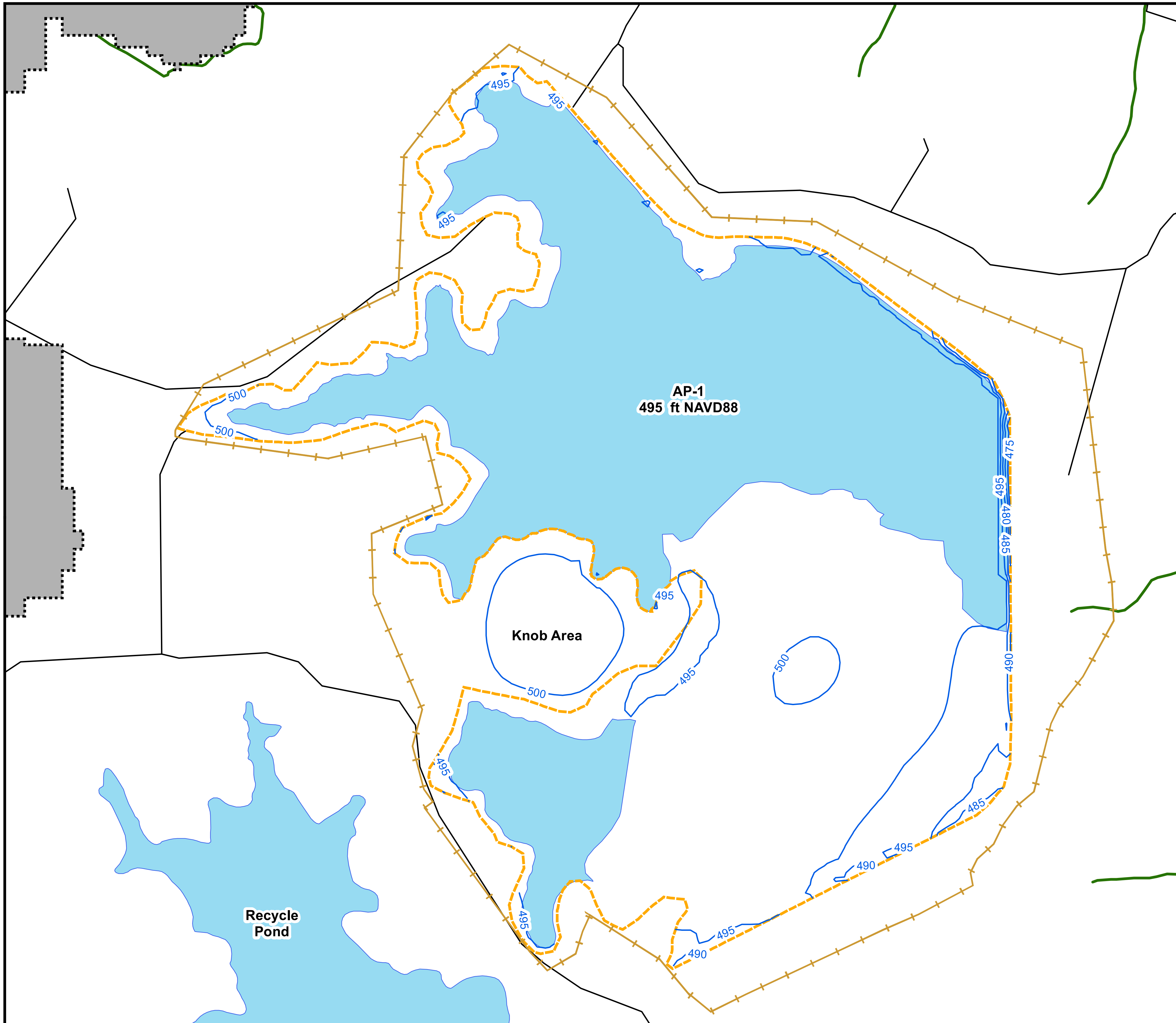
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIOS 3 AND 4 MODEL EVAPOTRANSPIRATON VALUES

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
DAE	MMS	60563110	7/15/2024	5B



Legend

- 400 Simulated Potentiometric Surface (ft NAVD88)
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- AP-1 Boundary
- Permit Boundary

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

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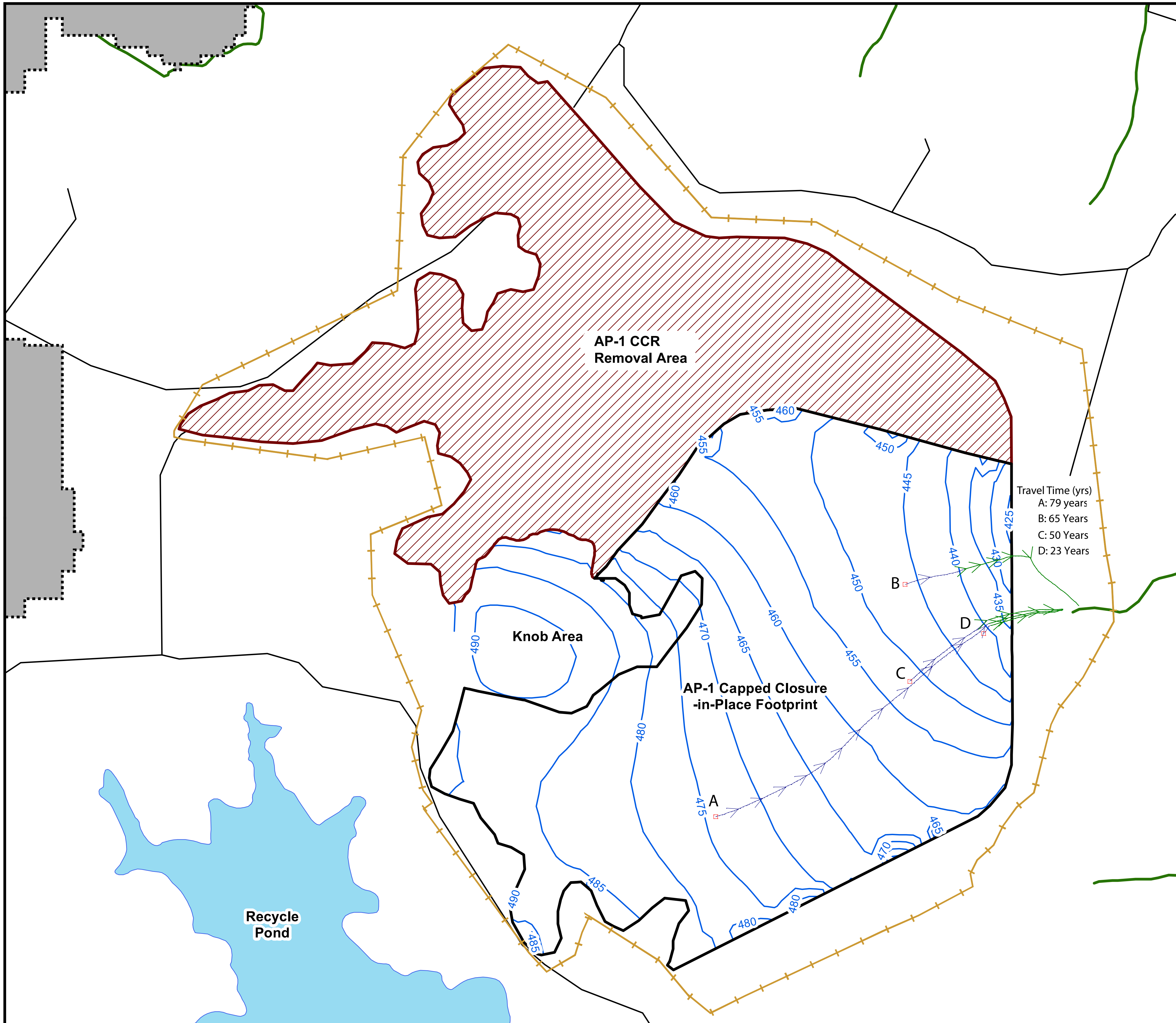
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 0 SIMULATED POTENTIOMETRIC SURFACE CONTOUR MAP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60662731	8/22/2024	6A



Legend

- -400- Simulated Post-Closure Potentiometric Surface (ft NAVD88)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- Permit Boundary

Particle Tracking Pathline

- Layer 1
- Layer 2
- Layer 3
- Layer 4

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

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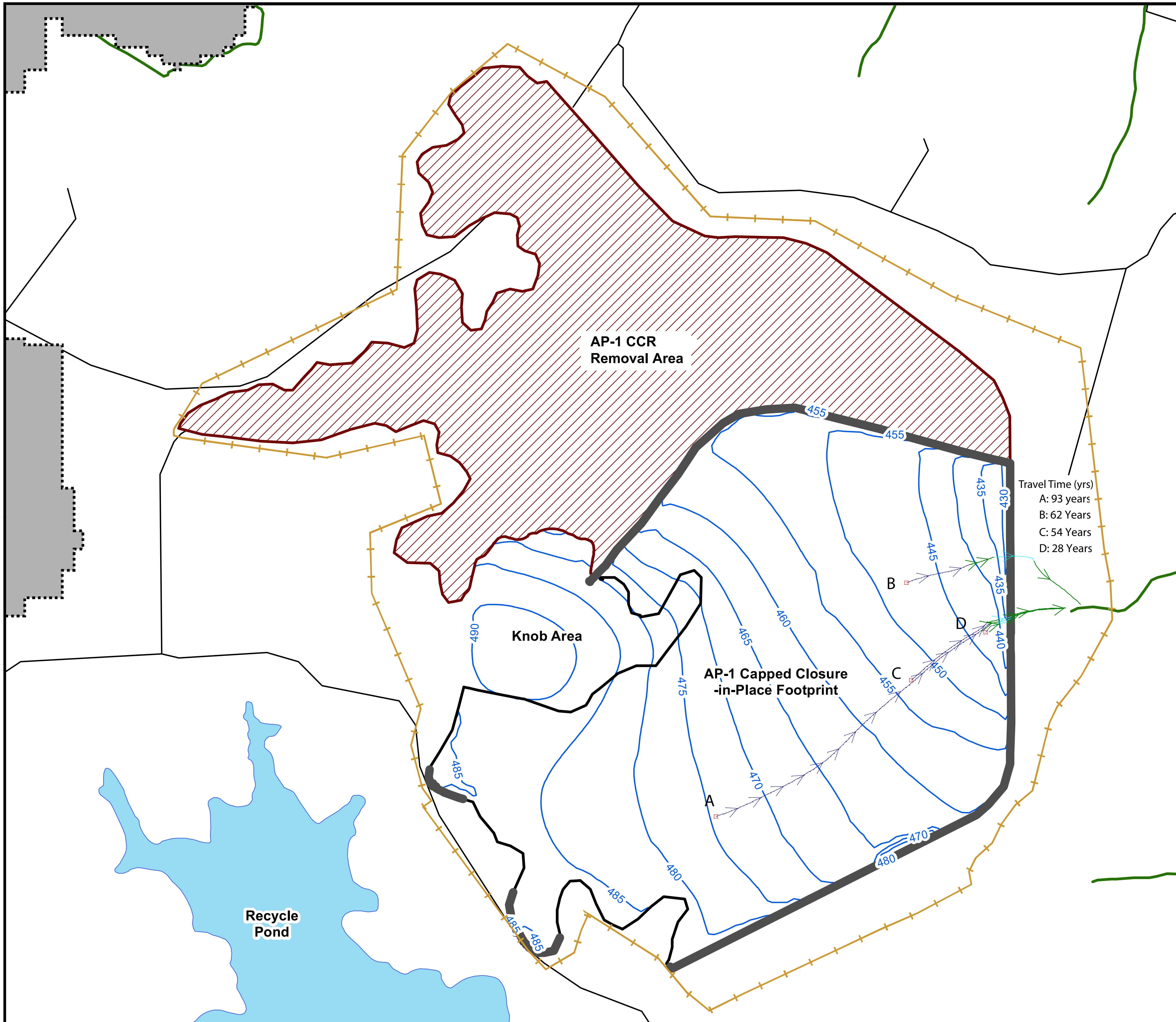
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 1 SIMULATED POTENTIOMETRIC SURFACE CONTOUR MAP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60662731	8/22/2024	6B



Legend

- Slurry Wall (Vertical Wall Barrier)
- 400 Simulated Post-Closure Potentiometric Surface (ft NAVD88)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- Permit Boundary

Particle Tracking Pathline

- Layer 1
- Layer 2
- Layer 3
- Layer 4

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

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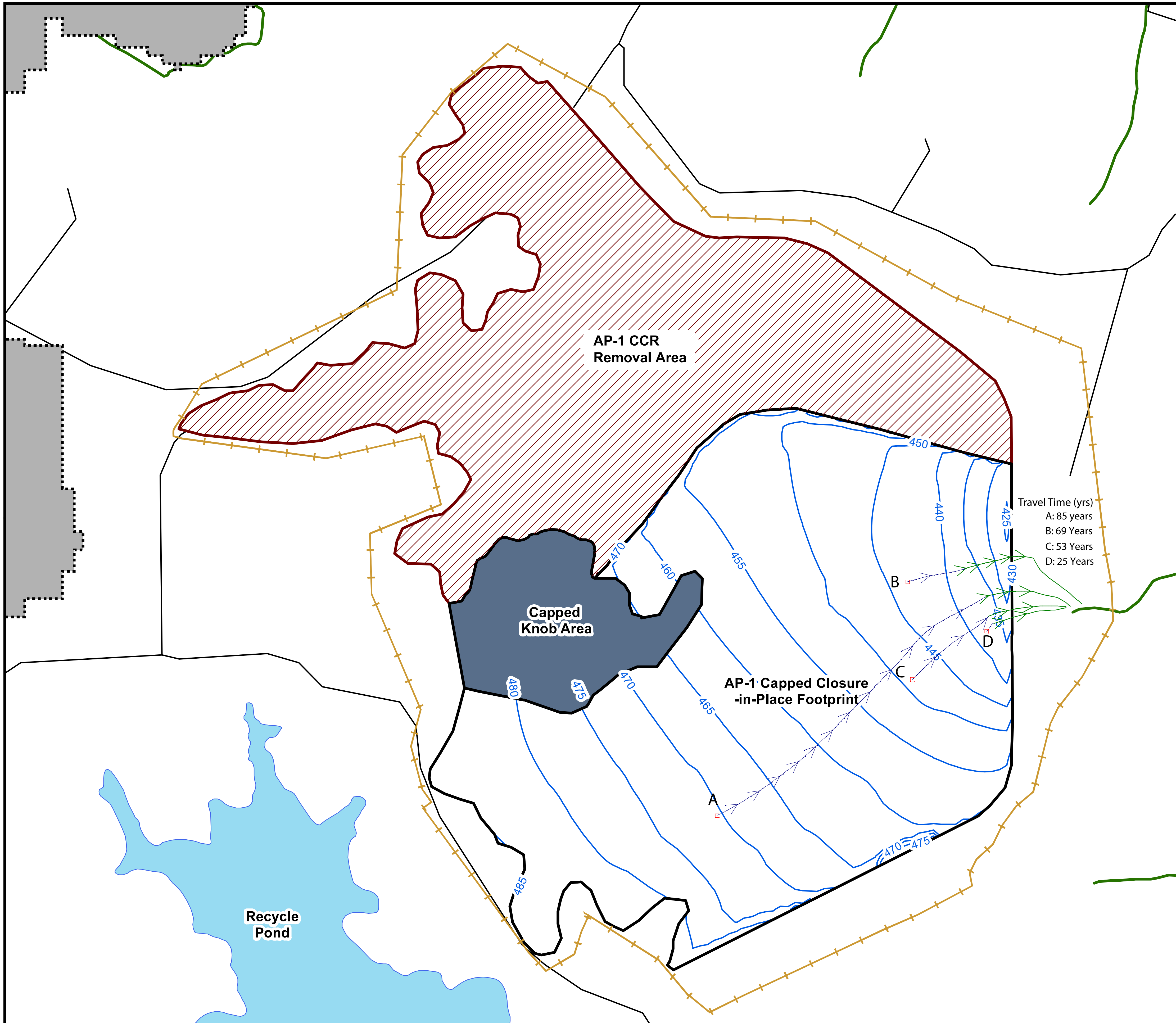
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 2 SIMULATED POTENTIOMETRIC SURFACE CONTOUR MAP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60662731	8/22/2024	**6C**



Legend

- -400- Simulated Post-Closure Potentiometric Surface (ft NAVD88)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Capped Knob Area
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- Permit Boundary

Particle Tracking Pathline

- Layer 1
- Layer 2
- Layer 3
- Layer 4

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000 Feet

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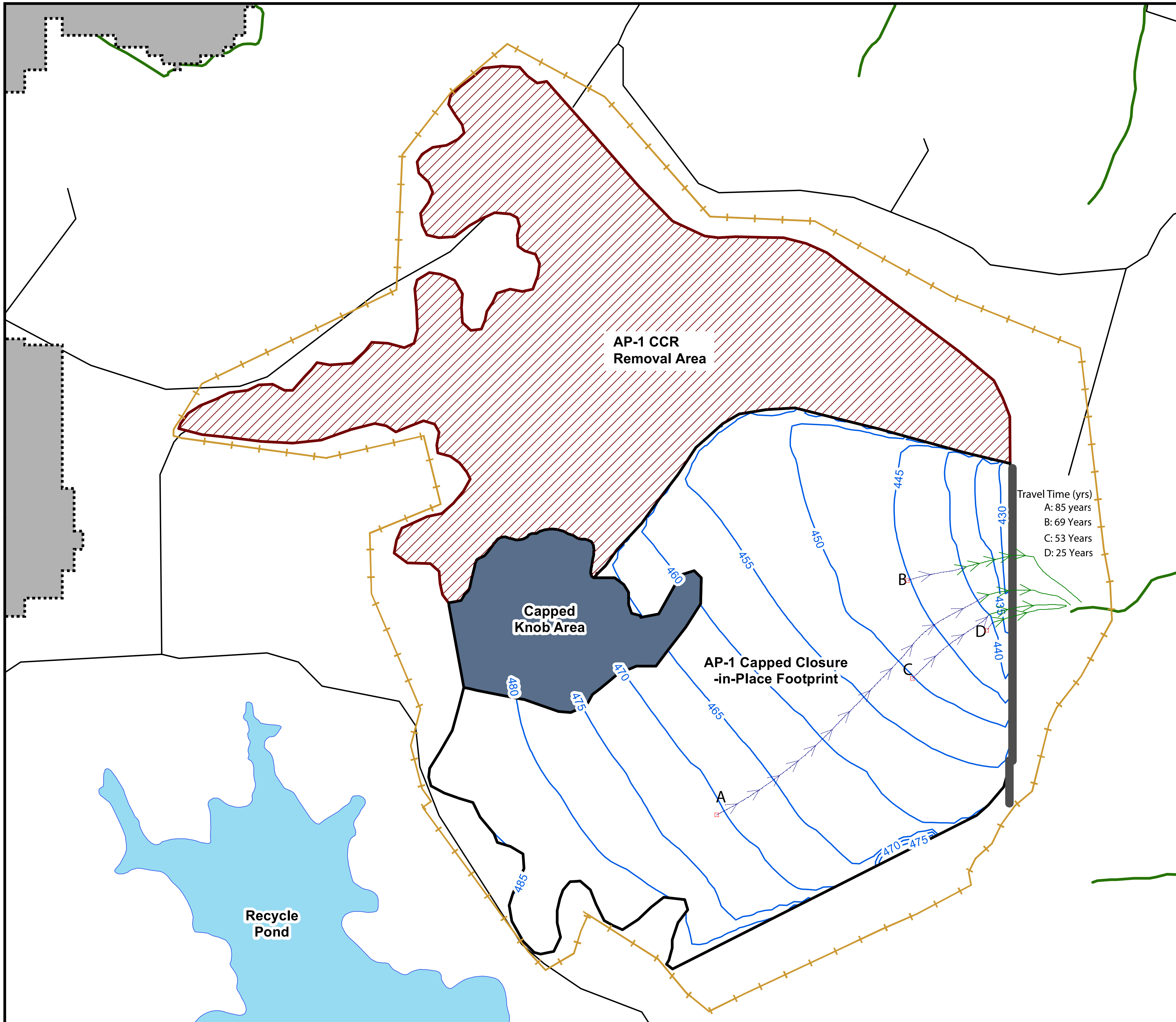
MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 3 SIMULATED POTENTIOMETRIC SURFACE CONTOUR MAP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60662731	8/22/2024	6D



Legend

- Slurry Wall (Vertical Wall Barrier)
- 400 Simulated Post-Closure Potentiometric Surface (ft NAVD88)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Capped Knob Area
- Active Model Domain
- Inactive Cells
- Water Surface
- Road
- Streams
- Permit Boundary

Particle Tracking Pathline

- Layer 1
- Layer 2
- Layer 3
- Layer 4

Note:
Vertical Datum feet NAVD88
Groundwater model simulations performed with MODFLOW-NWT and Groundwater Vistas

N

0 1,000 2,000

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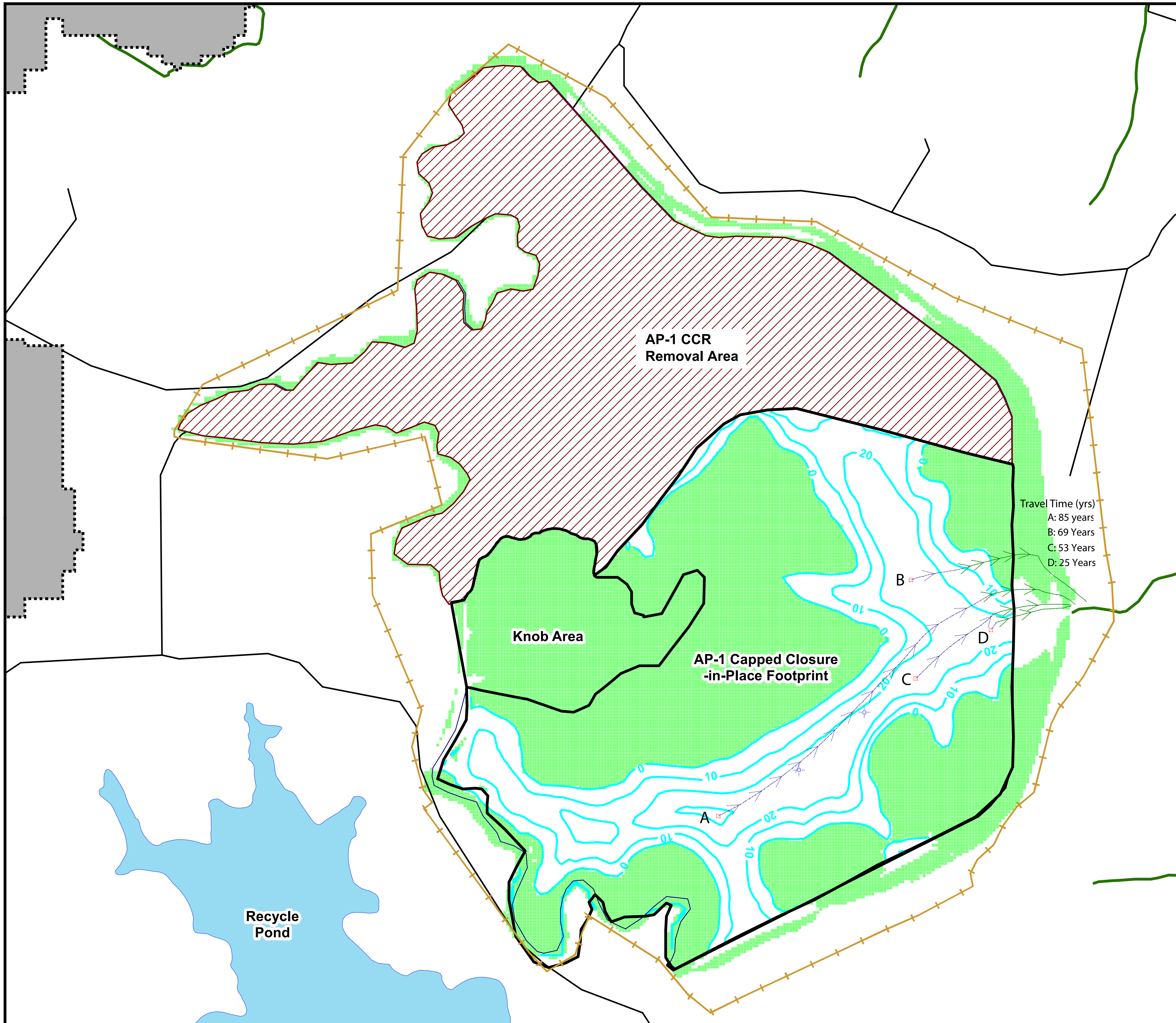
APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:
SCENARIO 4 SIMULATED POTENTIOMETRIC SURFACE CONTOUR MAP

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60662731	8/22/2024	**6E**



Legend

- CCR Below Potentiometric Surface (ft)
- Approximate CCR Removal Area
- Approximate Closure-in-Place Footprint
- Active Model Domain

Particle Tracking Pathline

- Layer 1
- Layer 2
- Layer 3
- Layer 4
- Area Above the Potentiometric Surface
- Inactive Cells
- Water Surface
- US Highway 23
- Road
- Ocmulgee River
- Streams
- Permit Boundary

Note:
Vertical Datum NAVD88

N

0 1,000 2,000

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MONROE COUNTY, GEORGIA

APPENDIX B GROUNDWATER MODEL AP-1 CLOSURE SIMULATIONS ADVANCED ENGINEERING METHODS POST-CLOSURE CONDITIONS

FILENAME:

SCENARIO 3 WATER PARTICLE TRACKING

DRAWN BY:	CHECKED BY:	PROJECT NO.	DATE:	FIGURE NO.
JWW	JAH	60563110	8/22/2024	7