

## PUBLIC DISCLOSURE

March 31, 2022

Ms. Sallie Tanner  
Executive Director  
Georgia Public Service Commission  
244 Washington Street, SW  
Atlanta, GA 30334-5701

**RE: Georgia Power Company's Semi-Annual Coal Combustion Residuals Asset Retirement Obligation (CCR ARO) Report; Docket No. 43083**

Dear Ms. Tanner:

Enclosed for filing in compliance with the Georgia Public Service Commission's ("Commission") July 29, 2019 Order Adopting Stipulation as Amended in Docket No. 42310 ("2019 IRP Final Order") is Georgia Power Company's (the "Company") Semi-Annual CCR ARO Report ("Report"). The Company files this Report to update the Commission on the Company CCR ARO compliance strategy activities through December 31, 2021 and other notable updates. Enclosed are the trade secret and public disclosure versions of the Report made in accordance with the Commission's Alternative Electronic Filing Procedures issued on March 17, 2020.

This filing contains certain information that is being filed under the Commission's trade secret rules as explained in the enclosed document regarding the basis for the assertion. If you have any questions, please call Cheryl Johnson at 404-506-6837.

Sincerely,

/s/ Kelley Balkcom  
Kelley Balkcom  
Director, Regulatory Affairs  
Georgia Power Company

Enclosure

**BEFORE THE GEORGIA PUBLIC SERVICE COMMISSION**

**SEMI-ANNUAL COAL COMBUSTION RESIDUALS  
ASSET RETIREMENT OBLIGATION REPORT  
DOCKET NO. 43083**

**GEORGIA POWER COMPANY**

**BASIS FOR THE ASSERTION THAT THE  
INFORMATION SUBMITTED IS A TRADE SECRET**

In accordance with the order of the Georgia Public Service Commission, Georgia Power Company ("Georgia Power" or the "Company") hereby submits the Coal Combustion Residuals Asset Retirement Obligation ("CCR ARO") Program Semi-Annual Program Status Report ("Report") in Docket No. 43083. In the Report, the Company has submitted details related to its environmental compliance strategies, including projected and current cost estimates for CCR ARO ash pond closures and landfill projects (the "Information"), that constitute trade secret information of the Southern Company, Georgia Power, and its affiliates and is therefore protected from public disclosure under Commission Rule 515-3-1-11.

The Information derives economic value from not being generally known to, and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use. Specifically, the trade secret portions of the Information contain competitively sensitive details on the site specific and CCR unit specific costs the Company is expected to incur to close its ash ponds and landfills, the timing and issuance of future contracts, as well as the Company's expected investment in beneficial reuse projects. Publicly disclosing these costs would allow bidders and vendors to tailor proposals according to the Company's expected costs, setting an artificial floor on bidding, to the detriment and harm of the Company and its customers by not allowing the Company to conduct a proper solicitation and obtain the best cost estimates for future work. Disclosure of the Information could harm the Company and its customers in its efforts to obtain optimal pricing in current or future negotiations. In addition, the Company's competitors are not generally required to disclose similar information, and to require the Company to do so would put it at an economic disadvantage.

The Information is subject to extensive efforts to maintain its confidentiality. Only select Georgia Power and Southern Company personnel and their legal counsel are granted access to the Information. Those personnel receive access only on a "need to know" basis. If a party outside of Georgia Power and Southern Company and their legal counsel are granted access to the Information, the party is required to sign a confidentiality agreement with respect to the Information.

Aaron Mitchell, first being duly sworn, deposes and states that he has reviewed the Report and that, to the best of his knowledge, the specific information designated as trade secret therein constitutes trade secrets pursuant to Article 27, Chapter 1, Title 10 of the Georgia Code.



Aaron Mitchell  
Environmental Affairs Director  
Georgia Power Company

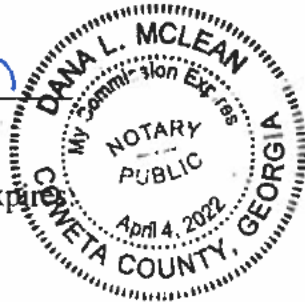
Subscribed and sworn to before me this 31st day of March, 2022.



Notary Public

My Commission expires

4/4/22



# **Coal Combustion Residuals Asset Retirement Obligation Program Semi-Annual Program Status Report**

Georgia Power Company

*March 31, 2022*

**FORWARD-LOOKING STATEMENT CAUTIONARY NOTE**

Certain information contained in this report is forward-looking information based on current expectations and plans that involve risks and uncertainties. Forward-looking information includes, among other things, statements concerning environmental regulations, related compliance plans, and estimated expenditures. Georgia Power cautions there are certain factors that can cause actual results to differ materially from the forward-looking information that has been provided. The reader is cautioned not to put undue reliance on this forward-looking information, which is not a guarantee of future performance and is subject to a number of uncertainties and other factors, many of which are not within the control of Georgia Power. Accordingly, there can be no assurance that such suggested results will be realized. The following factors, in addition to those discussed in Georgia Power's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 and subsequent securities filings, could cause actual results to differ materially from management expectations as suggested by such forward-looking information: the impact of recent and future federal and state regulatory changes, including tax, environmental, and other laws and regulations to which Georgia Power is subject, as well as changes in application of existing laws and regulations; the potential effects of the continued COVID-19 pandemic; the extent and timing of costs and legal requirements related to coal combustion residuals; current and future litigation or regulatory investigations, proceedings, or inquiries; the effects of inflation; the ability to control costs and avoid cost and schedule overruns during the development, construction and operation of facilities or other projects; the ability to construct facilities in accordance with the requirements of permits and licenses and to satisfy any environmental performance standards and the requirements of tax credits and other incentives; advances in technology; state and federal rate regulations and the impact of pending and future rate cases and negotiations, including rate actions relating to cost recovery mechanisms; the direct or indirect effect on the Company's business resulting from cyber intrusion or physical attack and the threat of physical attacks; catastrophic events such as fires, earthquakes, explosions, floods, tornadoes, hurricanes and other storms, droughts, pandemic health events, political unrest, or other similar occurrences; and the effect of accounting procurements issued periodically by standard-setting bodies. Georgia Power expressly disclaims any obligation to update any forward-looking information.

**Georgia Power Company**  
**Coal Combustion Residuals Asset Retirement Obligation Program**  
**Semi-Annual Program Status Report**  
**March 31, 2022**

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**Georgia Power Company**  
**Coal Combustion Residuals Asset Retirement Obligation Program**  
**Semi-Annual Program Status Report**  
**March 31, 2022**

In accordance with the Georgia Public Service Commission's ("PSC" or the "Commission") Final Order in the 2019 Integrated Resource Plan ("IRP") proceeding in Docket No. 42310, Georgia Power Company ("Georgia Power" or the "Company") provides this semi-annual report regarding the Asset Retirement Obligations ("ARO") for its Coal Combustion Residuals ("CCR") compliance strategy activities through December 31, 2021, and other notable updates occurring in 2022.

## I. EXECUTIVE SUMMARY

### Compliance with Federal and Georgia CCR Rules

Georgia Power has 29 ash ponds and 12 existing CCR landfills at 12 active or retired generating sites across the state. The Company is required to comply with both the Federal CCR Rule and Georgia's CCR Rule at these ash ponds and landfills. Georgia Power presented its strategy to comply with these rules to the Commission in the Company's 2019 Environmental Compliance Strategy ("ECS"), and this strategy was reviewed and approved by the PSC during the 2019 IRP (Docket No. 42310). Georgia Power filed annual updates to the ECS in March 2020 and March 2021 as directed in the Final Order of the 2019 IRP. Georgia Power submitted its 2022 ECS on January 31, 2022 as part of the Company's triennial IRP process in Docket No. 44160. The following table summarizes the Company's PSC-approved closure strategy for its ash ponds and CCR landfills.

**Table 1. Georgia Power's Ash Ponds and Existing CCR Landfills ("CCR Units")**

	Ash Pond Closure Method			Existing CCR Landfills
	Closure by Removal	Closure in Place	Total	
Arkwright				3
Bowen		1	1	1
Branch	5		5	
Hammond	3	1	4	1
Kraft	1		1	1
McDonough	1	3	4	
McIntosh	1		1	2
McManus	1		1	
Mitchell	3		3	



<b>Scherer</b>		1	1	1
<b>Wansley*</b>		1	1	1
<b>Yates</b>	4	3	7	2
	19	10	29	12

*\*The Company's assessment of the Wansley ash pond closure strategy is included in the 2022 ECS in Georgia Power's 2022 IRP (Docket No. 44160).*

## Georgia Power's Environmental Compliance Strategy

As outlined in the ECS, Georgia Power's compliance strategy process is developed to respond to changing regulations. While the process itself will continue to necessarily evolve, the purpose of the process has always been to produce cost-effective compliance strategies, which will maximize the benefit to customers while achieving environmental objectives and ensuring compliance with all requirements. The Company provides transparent updates on its CCR ARO compliance strategy and activities to all stakeholders through its ECS updates, Semi-Annual CCR ARO Program Status Reports, ongoing regulatory permitting activities with the Georgia Environmental Protection Division ("EPD"), and ongoing compliance information routinely posted on the Company's external website.

As part of the ECS filed in the Company's 2022 IRP (Docket No. 44160), Georgia Power identified that it is investigating whether to modify the current ash pond closure plan for Plant Wansley's ash pond and move from a closure in place to a closure by removal strategy. If the retirement of Wansley Units 1 and 2 is approved, the on-site CCR landfill would be available for use in conjunction with the ash pond closure. A final decision regarding the alternative closure strategy is expected with the conclusion of the 2022 IRP. The Company will provide the Commission with further updates on the implementation of the outcome of this matter with the next CCR semi-annual update.

Georgia Power's ash pond and CCR landfill closure plans and compliance strategy are designed to comply with the Federal CCR Rule, as well as the more stringent requirements of the Georgia CCR Rule. The Georgia CCR Rule regulates all ash ponds and landfills in the state and establishes a comprehensive permitting program through which the EPD incorporates Federal and Georgia CCR Rule requirements, including aggressive compliance schedules. The EPD will review applications for all CCR units, issue permits, and oversee ash pond and CCR landfill closure activities to ensure they meet the requirements of the Georgia CCR Rule and are protective of human health and the environment. Georgia Power was required to submit CCR permit applications to the EPD for all ash ponds and CCR landfills in November 2018. These applications included active and previously closed CCR landfills and ash ponds.



Both the Federal CCR Rule and the Georgia CCR Rule, which adopts the Federal CCR Rule by reference, mandate strict regulatory deadlines to complete closure of ash ponds and the Company must comply with these compliance requirements. While the more stringent Georgia CCR Rule incorporates the regulatory deadlines outlined in the Federal CCR Rule, it creates additional compliance requirements through the state's permitting process for the Company's ash ponds and CCR landfills, however, it does not currently tie regulatory deadlines to permit issuance for units also regulated under the Federal CCR Rule. The Company, bound by applicable stringent regulatory deadlines regardless of permit issuance, must complete certain compliance requirements and proceed with work to meet these deadlines concurrently with the process of obtaining state CCR permits. The activities the Company is proceeding with include preparing ash pond and CCR landfill closure studies, developing detailed engineering designs, commencing construction activities, as well as developing and implementing customized and comprehensive ash pond dewatering processes.

Extensive construction activities are being or will be implemented at each site, such as dewatering, ash excavation, ash consolidation/placement, installation of closure cover systems, installation of engineering controls, and site restoration. The Company, relying significantly on the experience and knowledge of third-party experts, has evaluated the volume, complexity, and duration of these required activities on a site-specific basis and created comprehensive closure plans and construction execution plans necessary to comply with the CCR Rules. The closure plans for the CCR units are site-specific, and each project is progressing with design, dewatering, and construction based on site-specific project schedules and are at different stages of progress depending on individual project status.

Both Federal and Georgia CCR Rules specify post-closure care ("PCC") activities. In many cases, post-closure care spans for decades into the future and will include inspecting the closed ash ponds and CCR landfills to verify continued structural integrity, maintaining the integrity of the final cover system, and sampling and maintaining the groundwater monitoring network. The interim post-closure care ("IPCC") activities designate the time period following construction, while closure certification reports are being finalized and approved and permits are being issued, during which time the Company must conduct monitoring and maintenance, before the post-closure care period begins.

Georgia Power's overall program – including closure construction, IPCC, and PCC – is currently expected to span approximately 60 years, with a majority of spend projected over the next 15 years during closure construction.

## CCR Program Progress Summary

The Company continues to make progress on its CCR program. Construction and engineering activities have advanced, permitting activities continue, groundwater monitoring and reporting is ongoing, and dewatering activities have progressed as more sites move into active construction.

As closure construction has progressed, Georgia Power has instilled a culture of safety excellence on all sites. Over 710,000 safe work hours have been performed between January and December 2021, with a cumulative program total of 3.5 million safe work hours without significant injury, as defined by Edison Electric Institute. Construction activities have begun at each site for ash pond closures. This includes active closure construction at 22 ash ponds and preliminary sitework and final design at the remaining ponds to prepare the sites to enter closure construction activities in the near future. Construction activities are conducted by qualified contractors who are required to comply with regulatory and permit requirements, as well as robust design packages assembled by professional engineers.

Prior to issuing final permits and in order to gain public input, the EPD issues draft permits for public review and comment. The EPD addresses comments it receives prior to issuing permits as final. To date, the EPD has issued eight final permits, including the Company's first closure in place permit. The remaining seven permits are for closure by removal units. Additionally, a draft permit was issued by the EPD in July 2021 for another closure in place unit. Site-specific closure plans and detailed engineering drawings were included in the Company's permit applications previously submitted to the EPD. Quality assurance plans, which were also included in the Company's permit applications, are implemented through third-party engineering firms and ensure that closure activities are completed per approved permit drawings and in compliance with regulatory and permit requirements.

Georgia Power has installed comprehensive groundwater monitoring networks, including more than 600 wells, to actively monitor groundwater quality at ash ponds and CCR landfills and has continued to add supplemental wells to these networks. The Company has hired independent, third-party engineers and groundwater professionals to install and maintain the groundwater monitoring well networks for each site. Third-party, independent engineers and geologists sample wells in the monitoring network, statistically analyze and evaluate the data, and write reports interpreting and summarizing the results. Groundwater samples are analyzed by accredited, independent, third-party laboratories. In 2021, 37 additional groundwater wells and piezometers were installed, more than 3,000 groundwater samples were collected from all the wells, and the results were included in 78 routine groundwater reports submitted to the EPD and posted to Georgia Power's public website. Sampling, reporting and additional well installations, as necessary, will continue through 2022 and beyond to ensure compliance with the CCR Rules.

The EPD has approved dewatering plans for nine of the Company's sites, with two of those dewatering projects (Plant McManus and Plant McIntosh) now complete. The dewatering plans describe the water treatment system, controls, and monitoring that will be implemented during the dewatering process to ensure that the water discharged is in compliance with wastewater permits and protective of water quality standards. The dewatering activities occur under the direction of independent, third-party licensed wastewater treatment operators throughout the duration of each closure project. The Company has also engaged independent, third-party contractors for effluent and receiving stream sampling, and accredited, independent laboratories for analyses. In 2021, independent wastewater treatment contractors treated approximately 998 million gallons of water and independent sampling contractors conducted 643 sampling events for the effluent and receiving streams, bringing program totals to over 2.6 billion gallons of water treated and over 1,700 sampling events for the effluent and receiving streams. Water quality monitoring data is reported monthly to the EPD, and a monthly summary is also placed on Georgia Power's public website.

### **Georgia Power's CCR Asset Retirement Obligation**

Prior to January 1, 2003, the Company included estimated costs for the future closure of ash ponds and CCR landfills in the cost of removal component in depreciation rates. After mandatory adoption of the Financial Accounting Standards 143 — Asset Retirement Obligations in January 2003, now Accounting Standards Codification ("ASC") 410, the Company reclassified the costs to separate Federal Energy Regulatory Commission accounts, excluded the cost from depreciation rates, and began accounting for the cost as ARO. Such costs have consistently been included in rates established by the PSC since that time. From January 1, 2003 through December 31, 2021, the Company has spent \$944 million on CCR ARO activities.

Georgia Power consistently monitors and evaluates project assumptions, including, but not limited to, timing and schedule assumptions for permits and construction, project scope, post-closure activities, and estimated future escalation. Georgia Power's current forecast applicable to retail customers over the next approximately 60 years is \$8.99 billion, which includes the \$944 million in actual costs incurred to date. Georgia Power's retail estimate at completion ("EAC") for the CCR ARO program is materially consistent with the Company's last semi-annual progress report filed with the PSC in October 2021.

The Company will continue to refine cost and closure plans as these projects progress. The Company's current cost recovery methodology was approved by the PSC in Georgia Power's 2019 base rate case (Docket No. 42516) and, as directed in the Final Order for that proceeding, was addressed in the Company's 2020 and 2021 annual compliance

filings. Future rate adjustments will be considered through the Company's next base rate case, which is expected to be filed with the Commission in 2022.

Various factors could impact the Company's CCR ARO compliance efforts, construction schedules, permit approvals, and overall cost moving forward. These factors include, but are not limited to, regulatory deadlines, permit issuance and requirements, state and federal rule amendments, legislative action, material procurement, ash volumes, design and/or scope changes, availability of qualified contractors, contractor performance, weather, completion of competitive bids and contracts for pending projects, water treatment plans and technology, optimization of groundwater monitoring networks, corrective action requirements, long-term maintenance needs, potential to take advantage of beneficial use opportunities and achieve projected volumes of ash into the beneficial use market, the impact of emerging technologies throughout the life of the program, and other market and external factors.

In order to establish and implement appropriate mitigation efforts to reduce the probability and potential impacts of such risks, the Company is committed to actively managing the program and projects with continued focus on strategic project leadership and oversight, and risk and change control processes as a whole by enhancing work practices to improve consistency, accuracy, and visibility across the program.

## II. PROJECT UPDATES

### **Activity Overview**

Georgia Power's CCR compliance strategy includes site-specific closure plans for each ash pond ("AP") or CCR landfill project. In order to advance the program, and for the projects to comply with the deadlines in the CCR Rules, the Company has progressed design and engineering efforts, construction activities, permitting, groundwater monitoring and reporting, as well as dewatering activities.

### **Permitting**

In compliance with Georgia's CCR Rule, and as further discussed in detail in the Company's ECS filings since 2019, permit applications for all CCR units were submitted to the EPD in November 2018. The permit documents submitted to the EPD include voluminous amounts of compliance information, as it relates to inspections, design criteria, engineering calculations, operating criteria, groundwater monitoring, closure plans, post-closure plans, quality control, and other required information.

To date, final permits for Plant Bowen AP-1, Plant Hammond AP-1, Plant Hammond AP-2, Plant Hammond AP-4, Plant McIntosh AP-1, Plant McManus AP-1, Plant Yates Gypsum Landfill, and Plant Yates AP-1 have been issued by the EPD. During the course of the EPD's review, Georgia Power responded to multiple rounds of comments and data requests. The Company took steps to address EPD's comments, which included modifying groundwater monitoring networks, revising permit documents, and updating closure drawings and engineering calculations. However, while EPD required the Company to update its application and plans, the issuance of these final permits was largely consistent with the initial applications and did not significantly change the Company's closure plans. The issuance of a final permit for Plant Bowen AP-1 in February 2022 marked the Company's first closure in place final permit.

Additionally, to date, a draft permit for Plant Hammond AP-3 has been issued by the EPD. The EPD permitting activities for the remaining projects are currently expected to continue through 2023. The Company continues to respond to the EPD's requests for information and comments for the remaining permit applications currently under review.

Finally, through the permitting process, solar generation is also continuing to be evaluated on the closed CCR units. With the Commission's approval in the 2016 IRP (Docket No. 40161) for ash pond solar demonstration projects, options for future solar development are currently included in the Hammond AP-3 draft permit and McDonough AP-2, AP-3, AP-4 permit application for the combined AP-3/4 CCR unit. A solar pilot is currently underway at Plant McDonough AP-3/4, and other installations will be completed after approval by the EPD in the permitting process and closure of the CCR units has been

completed. The Company is also incorporating future solar development at McIntosh AP-1; a permit modification request to incorporate solar is planned to be submitted later this year.

### **Dewatering and Water Treatment**

The Company's process for dewatering during ash pond closure provides treatment for the water to meet the requirements of the plants' wastewater permits, as well as the associated dewatering plans approved by the EPD, to ensure compliance with water quality standards. As of December 2021, the Company is conducting dewatering operations at six plants in accordance with the EPD-approved dewatering plans. Dewatering is occurring at Plants Bowen, Branch, Hammond, McDonough, Mitchell, and Yates. Plant Wansley is scheduled to commence dewatering in early 2023 after the completion of construction and commissioning of their water treatment system and in accordance with their EPD-approved dewatering plan thereafter. Georgia Power will submit additional dewatering plans to the EPD for approval prior to commencement of dewatering at the remaining sites.

Ash pond dewatering has concluded at Plant McManus and Plant McIntosh, where all ash was removed from the former ash ponds and placed in permitted landfills. The final certifications of ash removal reports were submitted to the EPD in November 2019 and September 2021, respectively. The EPD acknowledged the ash had been removed and that dewatering activities had been completed. The dewatering treatment systems have been demobilized and removed from both Plant McManus and Plant McIntosh.

The dewatering activities occur under the direction of independent, third-party licensed wastewater treatment plant operators throughout the duration of each closure project. In some cases, water treatment may continue into the PCC period to manage ongoing water treatment requirements. This support will continue until the needs of the sites are addressed. In addition, the Company has engaged independent, third-party contractors for weekly effluent and bi-monthly receiving stream sampling throughout dewatering. Samples collected by independent contractors are analyzed by accredited independent laboratories.

The dewatering process is dynamic and complex. The treatment system demands are often impacted by rainfall and site-specific closure conditions. For these reasons, the required treatment technologies may be different at each site and may change during the closure process to support the needs of the site, which may cause labor resources, operating schedules, and associated costs to fluctuate. The Company will adjust the individual site dewatering infrastructure to align with site needs during closure, and post-closure as required, to ensure compliance with permits and to optimize performance.

**Groundwater**

Georgia Power continues to monitor groundwater at its ash ponds and CCR landfills and report the results to the EPD, as well as post regular updates to the Company's website. Georgia Power installed comprehensive groundwater monitoring networks, including more than 600 wells, at its facilities across the state to actively monitor groundwater quality at each site.

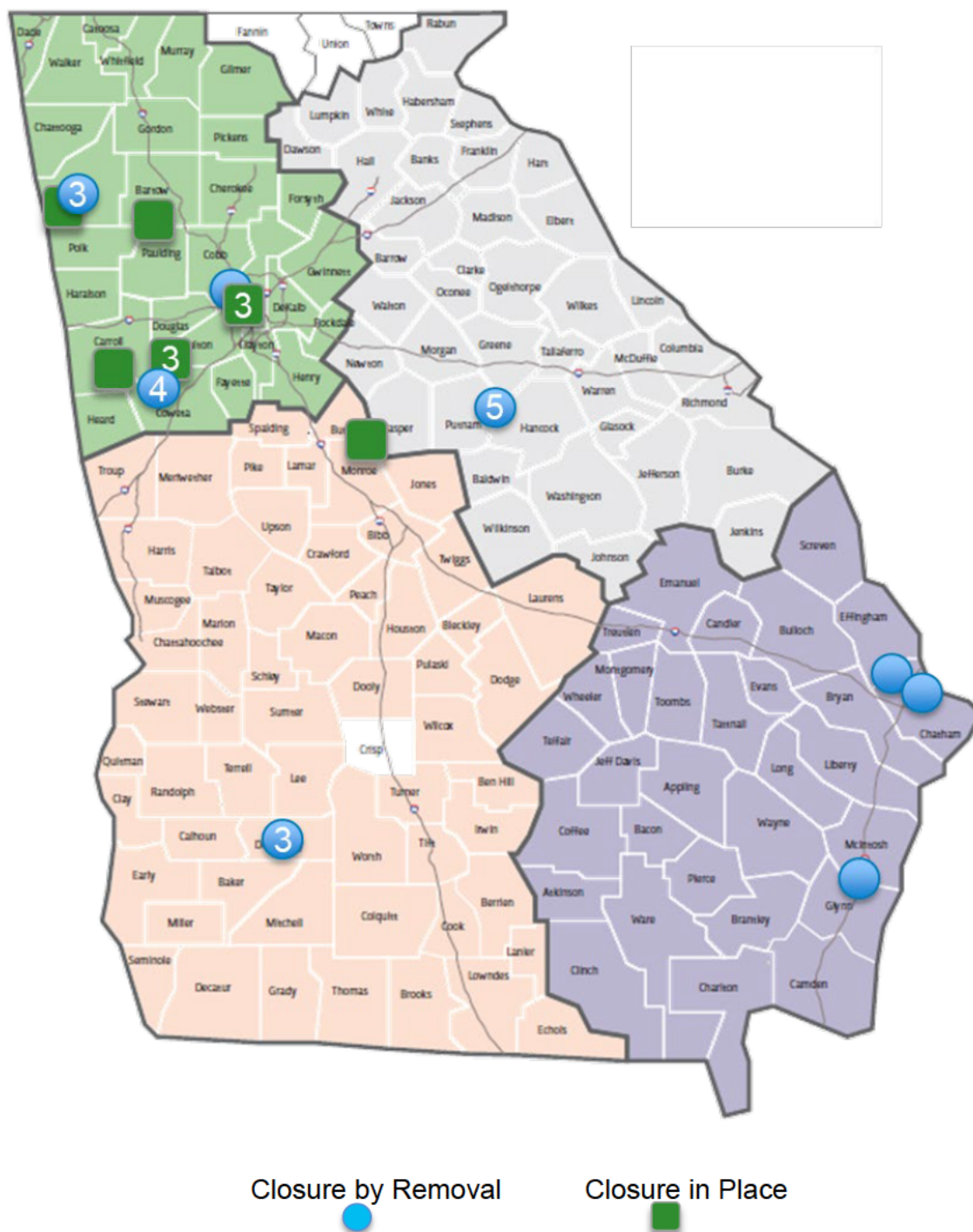
As required under the CCR Rules, the Company continues to perform routine sampling and reporting for the compliance parameters listed in the Rules. Where parameters have been observed at statistical levels above the groundwater protection standard, the Company entered into assessment of corrective measures ("ACM"). As required under the CCR Rules, the Company has installed additional monitoring wells to further characterize groundwater quality near CCR units in ACM. As the Company continues the ACM process, prior to implementing a corrective measure or remedy, additional activities will be occurring such as continued site characterization (including groundwater sampling, well and piezometer installation, and laboratory bench scale testing), remedy selection, and reporting to the EPD. Third-party, independent consultants will continue groundwater sampling, data evaluation, interpretation, and reporting while accredited independent laboratories will continue performing analyses following the appropriate methodology and protocols.

The Company will continue to comply with groundwater monitoring requirements in the Federal and Georgia CCR Rules by conducting semi-annual groundwater monitoring and reporting for the sites during the closure process and in post-closure.



## Ash Pond Locations

Georgia Power has 29 ash ponds at 11 sites.



## Ash Pond Estimated Closure Timeframes

Ash pond estimated closure construction timeframes vary by location and are site-specific. As discussed previously, schedule duration and timing of each activity for the projects can be influenced by numerous factors, including, but not limited to, state and federal regulatory actions and rule amendments, legislative action, necessary scope changes, weather, final ash quantities, beneficial use market trends, contractor productivity, and other market and external factors. The summary provided below represents the individual ash pond closure strategy along with the currently estimated closure construction timeframe by site. Estimated closure completion timelines are indicative of aggressive targets, and unscheduled risks or opportunities can cause these estimated timeframes to change in the future. Additional unit-specific cost and schedule information is provided in the Financial and Schedule Summary portion of this report. The Company will continue to update project schedules as each project progresses.

**Table 2. Ash Pond Estimated Closure Construction Timeframes**

	Closure by Removal	Closure in Place	Total	Estimated Closure Construction Completion*
<b>Bowen</b>		1	1	<b>2036</b>
<b>Branch</b>	5		5	<b>2036</b>
<b>Hammond</b>	3	1	4	<b>2031</b>
<b>Kraft</b>	1		1	<b>2016</b>
<b>McDonough</b>	1	3	4	<b>2023</b>
<b>McIntosh</b>	1		1	<b>2022</b>
<b>McManus</b>	1		1	<b>2020</b>
<b>Mitchell</b>	3		3	<b>2027</b>
<b>Scherer</b>		1	1	<b>2032</b>
<b>Wansley</b>		1	1	<b>2034**</b>
<b>Yates</b>	4	3	7	<b>2022</b>
	19	10	29	

\*For those sites with multiple ash ponds, the date above reflects the last pond construction completion date for the site in total. The "Estimated Closure Construction Completion" date reflects the estimated end of closure construction and estimated completion of restoration activities that may go beyond the submittal of the Closure Certification Report or the Certification of Removal Report.

\*\*The estimated closure construction completion date and associated cash flows for the Wansley ash pond are subject to adjustment based on the final Wansley ash pond closure strategy under review in the 2022 IRP Docket No. 44160.

## Ash Pond Closure Construction

The Company has made closure construction progress at 22 ash ponds at 9 facilities. These closure activities include dewatering, ash excavation, ash consolidation/ placement, installation of closure cover systems, installation of engineering controls, and site restoration. A summary of construction status for these ponds is listed in Table 3 below.

**Table 3. Ash Pond Construction Progress**

	Closure by Removal	Closure in Place	IPCC	PCC
<b><u>Construction Complete</u></b>				
<b>Branch AP-A</b>	●			
<ul style="list-style-type: none"> <li>CCR was removed from the 1-acre ash pond and consolidated with AP-E before the Georgia CCR Rule became effective. Site restoration has been completed.</li> </ul>				
<b>Hammond AP-3</b>		●	●	
<ul style="list-style-type: none"> <li>AP-3 has been closed in place by grading CCR within the 25-acre footprint and installing an impermeable cover system that includes a geomembrane. Consistent with the post-closure plan, and to enhance the effectiveness of closure, a TreeWell® system is planned outside and downgradient of the CCR footprint of AP-3. The system utilizes specialized lined planting units constructed with optimum planting media designed to promote downward root growth and focus groundwater extraction from a targeted depth interval. AP-3 is in IPCC, with PCC anticipated to begin in 2022.</li> </ul>				
<b>Kraft AP-1</b>	●		Managed by EPD Response and Remediation Program	Managed by EPD Response and Remediation Program
<ul style="list-style-type: none"> <li>CCR was removed from the 7-acre ash pond to off-site permitted landfills before the Georgia CCR Rule became effective. Additionally, the removal was part of an expanded plant retirement project and was regulated by the EPD's Response and Remediation Program. Georgia Power submitted a certification of removal for AP-1 to the EPD in 2018 as part of a site-wide Compliance Status Report. The EPD provided concurrence with the compliance status report in June 2020 and delisted the site from the EPD's Hazardous Site Inventory in 2021.</li> </ul>				

GPC CCR ARO Semi-Annual Progress Report  
March 31, 2022

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	Closure by Removal	Closure in Place	IPCC	PCC
<b>McDonough AP-3 &amp; AP-4</b>		●		
<ul style="list-style-type: none"> <li>Consolidation of CCR from a combined ash pond area of 79-acres to a smaller footprint continues. A cap cover system that includes a geomembrane is being installed to cover the final footprint. Consistent with the closure plans, closure construction includes an underslope drainage system and the continued interim use of dewatering wells. Dewatering water treatment is ongoing, consistent with the EPD-approved Dewatering Plan.</li> </ul>				
<b>McIntosh AP-1</b>	●		●	
<ul style="list-style-type: none"> <li>CCR was removed from the 22-acre ash pond and placed in Landfill No. 4, an on-site permitted CCR landfill. Restoration activities are ongoing and expected to be completed in 2022. AP-1 is in IPCC.</li> </ul>				
<b>Mitchell AP-1, AP-2, AP-A</b>	●			
<ul style="list-style-type: none"> <li>CCR removal from the combined ash pond area of 104-acres is ongoing. CCR is continuing to be transported off-site for beneficial use. Dewatering water treatment is ongoing consistent with the EPD-approved Dewatering Plan.</li> </ul>				
<b>Yates AP-A</b>	●			
<ul style="list-style-type: none"> <li>CCR has been removed from the 24-acre ash pond and consolidated within the AP-3 and AP-B' footprint, which is being closed in place. Restoration activities at AP-A are ongoing.</li> </ul>				
<b>Yates AP-B</b>	●			
<ul style="list-style-type: none"> <li>CCR has been removed from the 6-acre ash pond and consolidated within the AP-3 and AP-B' footprint, which is being closed in place. A certification of CCR removal is currently scheduled to be completed and submitted in 2022.</li> </ul>				
<b>Yates AP-2</b>	●			
<ul style="list-style-type: none"> <li>CCR is being removed from the 60-acre ash pond and consolidated within the AP-3 and AP-B' footprint, which is being closed in place. Dewatering water treatment is ongoing for the site, and all CCR contact water from AP-2 and the other ponds is managed as required by the EPD-approved Dewatering Plan.</li> </ul>				

	Closure by Removal	Closure in Place	IPCC	PCC
<b>Yates AP-3, AP-B'</b>		●		
<ul style="list-style-type: none"> <li>CCR from other ponds at Plant Yates has been and is continuing to be consolidated within the footprint of the combined AP-3 and AP-B' pond. Installation of a cap cover system (which includes a geomembrane) is underway and will ultimately cover the entire consolidated footprint of 88.5-acres upon completion. Consistent with the closure plans, a subsurface hydraulic conveyance system has been incorporated into the closure construction plans.</li> </ul>				
<b>Yates AP-C</b>		●		
<ul style="list-style-type: none"> <li>The former ash pond was previously incorporated into the on-site permitted CCR landfill, R6, and is being closed in place in accordance with the current landfill permit requirements.</li> </ul>				

Final closure certifications have been filed with the EPD for Branch AP-A, Hammond AP-3, and Kraft AP-1. Additionally, certification of ash removal documents for McDonough AP-2, McIntosh AP-1, McManus AP-1, Yates AP-1 and Yates AP-A have been submitted to the EPD. The EPD issued CCR removal acknowledgement letters for McDonough AP-2, McIntosh AP-1, McManus AP-1, Yates AP-1, and Yates AP-A. The Company will continue to work to meet all regulatory compliance requirements for these CCR units.

### Pre-Construction Activities

A summary of progress for the remaining seven ash ponds is listed in Table 4 below. The Company has made significant progress with ongoing work including engineering studies, design, closure evaluations, constructability reviews, and other early site work and pre-construction activities for these sites. The ongoing pre-construction activities help ensure the closure activities can be completed effectively, taking into account site-specific conditions and regulatory closure requirements. In addition, the Company is making necessary preparations and taking actions related to contracting for the various stages of work associated with the closure of these ponds. All of the following ash ponds are in various stages of design, permitting, contracting, and/or early site preparation work.

**Table 4. Ash Pond Pre-Construction Activities**

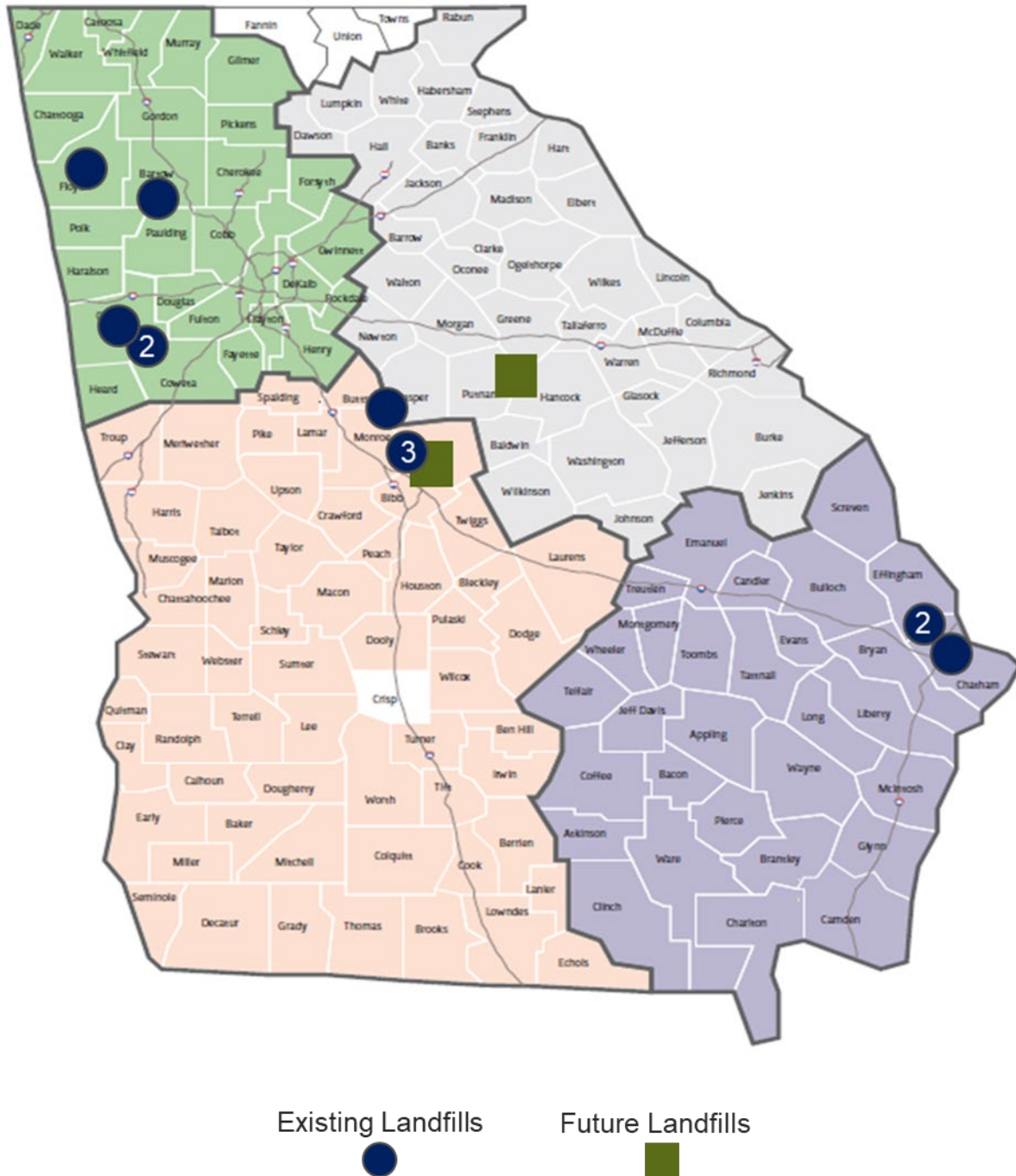
	Detailed Design	Active Dewatering	Bid Process	Early Site Preparation*
<b>Branch AP-B, AP-C, AP-D, AP-E</b>	Design at 90%	●	Underway	●
<ul style="list-style-type: none"> <li>Dewatering water treatment consistent with the EPD-approved Dewatering Plan is ongoing. Early site preparation activities are underway, such as construction of stormwater diversion features and further site development to support dewatering. Permitting is underway for a new landfill to accept CCR from the ash pond closures. In support of the CCR permit application, the permit design for the new CCR landfill is currently under review by the EPD.</li> </ul>				
<b>Hammond AP-4</b>	In progress	●		
<ul style="list-style-type: none"> <li>Dewatering water treatment consistent with the EPD-approved Dewatering Plan is ongoing. The Company is progressing the detailed design package. Upon finalizing a detailed design, a request for proposal ("RFP") is planned to be initiated for the prime contractor. AP-4 will be closed by removal to a Company-owned off-site permitted CCR landfill (Huffaker Road) or another off-site permitted landfill. Site restoration will be completed following CCR removal.</li> </ul>				
<b>Scherer AP-1</b>	Design at 90%		Underway	●
<ul style="list-style-type: none"> <li>Design has been finalized and the constructability review is complete. Early site preparation work began in 2021 and dewatering water treatment is expected to commence in 2023. Consistent with the closure plans, the closure construction includes consolidation of the current footprint and closure of the pond with an extension of the final cover system over non-CCR containing areas to minimize stormwater infiltration.</li> </ul>				
<b>Wansley AP-1</b>	Design at 90%			●
<ul style="list-style-type: none"> <li>The closure in place design has progressed and a constructability review of the closure in place design is complete. Early site preparation activities are complete. Dewatering water treatment consistent with the EPD-approved Dewatering Plan is expected to commence in 2022. The closure plan includes consolidation of the current footprint inside a deep soil mix containment structure with a concrete façade.</li> <li>As discussed in the Company's 2022 IRP (Docket No. 44160), Georgia Power identified that it is investigating whether to modify the current ash pond closure plan for Wansley AP-1 from a closure in place to a closure by removal strategy. Ultimately, if the retirement of Plant Wansley Units 1 and 2 is approved, the on-site CCR landfill would be available for use in conjunction with the ash pond closure.</li> </ul>				

\*Early site preparation includes activities such as contractor mobilization, setup of temporary facilities, laydown area construction, stormwater controls installation, etc.



## CCR Landfill Locations

Georgia Power has 12 existing CCR landfills and 2 future CCR landfills planned, which will be permitted to support closures into the future.



## CCR Landfill Estimated Closure Timeframes

CCR landfill estimated closure construction timeframes vary by location, are site-specific, and may differ based on various factors. These factors include status of plant operations, unit capacity factors, available landfill capacity, and whether the landfill is designated to support ash pond closure activities. Landfill closure dates at coal generating plants are significantly influenced by generation output and how much operational ash is sold for beneficial use and not disposed of in the on-site landfill. The Company will continue to update landfill closure construction timeframes as appropriate based on the factors described above.

**Table 5. Landfill Estimated Closure Construction Timeframes**

	Existing CCR Landfills	Future, New Permitted Landfills	Total	Estimated Closure Construction Completion*
<b>Arkwright</b>	3	1	4	2030
<b>Bowen</b>	1		1	2043
<b>Branch</b>		1	1	2037
<b>Hammond</b>	1		1	2031
<b>Kraft</b>	1		1	2020
<b>McIntosh</b>	2		2	2022
<b>Scherer</b>	1		1	2043
<b>Wansley</b>	1		1	2051**
<b>Yates</b>	2		2	2022
	12	2	14	

\*For those sites with multiple landfills or cells, the date above reflects the last cell closure completion date.

\*\*The estimated closure construction completion date and associated cash flows for the Wansley landfill are subject to adjustments based on the Company's 2022 IRP filing and subsequent PSC order.

## Landfill Activities

Georgia Power is complying with federal and state requirements at its 12 existing CCR landfills. Five of the 12 landfills either support current plant operations or ash pond closure projects and are actively operated under existing Solid Waste Permits. The remaining seven landfills are closed or undergoing closure under their existing Solid Waste Permits.

All landfill permits are in the process of being updated in compliance with the Georgia CCR Rule to include additional regulatory requirements.

- **Arkwright**: 3 CCR units closed in 2010 under Solid Waste Regulations applicable at the time of closure. Under the new Georgia CCR Rule, the CCR units will be closed by removal and consolidated into a future permitted on-site CCR landfill. Site restoration will be completed following CCR removal.
- **Bowen**: CCR landfill is to remain active as part of ongoing plant operations. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed.
- **Hammond Huffaker**: CCR landfill is to be closed following placement of CCR from certain ash ponds at Plant Hammond.
- **Kraft Grumman Road**: CCR landfill is closed and in IPCC. A final construction certification report was submitted to the EPD in 2019. Additional restoration activities have been completed and the Company is conducting additional groundwater studies to support the ACM process and remedy selection.
- **McIntosh**: CCR Landfill 3 is closed and in PCC. CCR Landfill 4 Cell 1 is currently in IPCC. Additionally, CCR Landfill 4 Cell 2A is currently undergoing closure construction commensurate with completion of the ash pond closure activities. A request for a minor permit modification has been conditionally approved by EPD to allow for episodic disposal of CCR. This modification would allow Cell 2A to remain operational for up to 2 years without receiving CCR.
- **Scherer**: CCR landfill to remain active as part of ongoing plant operations. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed.
- **Wansley**: CCR landfill to remain active as part of ongoing plant operations, subject to any adjustments based on the Company's request in the 2022 IRP filing concerning the retirement of Plant Wansley Units 1 and 2. As discussed in Georgia Power's 2022 ECS, if the retirement of Plant Wansley Units 1 and 2 is approved, the on-site CCR landfill would now be available for consideration for use in conjunction with the ash pond closure. The Company is evaluating current landfill capacity, the potential to increase or establish additional landfill capacity, CCR material movement/placement, and long-term considerations associated with post closure care. The landfill will undergo closure when permitted capacity is reached or when CCR disposal is no longer needed.
- **Yates**: The Gypsum landfill has been removed and is currently in PCC, as of February 2022. Additionally, the CCR landfill, R6, is currently being closed.

As part of its overall scope of the closure projects, Georgia Power will also permit two future on-site CCR landfills to support closures at the following facilities:

- **Arkwright**: Future CCR landfill will receive CCR from other on-site landfills. Permitting activities are ongoing.
- **Branch**: Future CCR landfill will receive CCR from the removal of on-site ash ponds. Permitting activities are ongoing. The letter of Site Acceptability for the new CCR landfill was received from the EPD in June 2020.

Final construction certification documents for the Yates Gypsum Landfill and the Kraft Grumman Road Landfill have been filed with the EPD. The EPD sent a CCR removal acknowledgement letter for Plant Yates Gypsum Landfill in October 2020.

### III. BENEFICIAL USE

Georgia Power's ECS describes the Company's beneficial use efforts focused on the following categories: beneficial use of production ash; new research and technology associated with beneficial use; and beneficial use of stored ash at The Company's ash ponds and CCR landfills. Additional discussion is included below.

#### **Beneficial Use of Production Ash**

Georgia Power currently markets more than 85 percent of the CCR generated from plant operations for beneficial use, which helps to minimize or offset costs related to CCR storage, landfill construction, and associated operation and maintenance costs.

#### **Ash Beneficial Use Center/New Research and Technology**

The Company, in partnership with Electric Power Research institute ("EPRI") and other utilities across the industry, has developed a center for beneficial use of harvested CCR, located at Plant Bowen. The Ash Beneficial Use Center ("ABUC") will strive to develop additional beneficial uses and better technologies to process the ash for beneficial use, with an aim to reduce future costs to CCR closure projects and further open opportunities to reuse this byproduct.

The Center aims to develop new technologies or processes that drive downward cost pressure associated with beneficial use and expand current and potential markets. This downward cost pressure would create an adjustable mechanism to obtain market equilibrium such that beneficial use from operating power plants is preserved. In addition, technology developments or enhancements to beneficially use CCR could ultimately allow Georgia Power to reduce the amount of CCR that is stored in landfills or reclaim CCR already stored in landfills and ash ponds. This may result in reduced capital and operation and maintenance costs for CCR management. The strategy associated with introducing additional beneficiated ash into the market, as well as limiting the quantity of CCR in landfills, benefits both current and future customers.

The core capability of the center is pre-processing harvested ash for use in technology demonstrations. Pre-processing includes drying, classifying, storing and delivering the ash for beneficial use. The major mechanical components of the center were completed in February 2021, and full commissioning and acceptance testing were completed in July 2021.

In 2021, the ABUC was used for a project extracting rare earth elements from coal ash that was funded by the U.S. Department of Defense. Ash from a Southern Company ash pond was delivered to ABUC. The ash was dried and screened using core ABUC

equipment, and carbon was removed from the ash using a rented electrostatic separator. The processed ash was shipped off-site for further processing to produce a mixed rare earth oxide powder. This project demonstrated the potential for Georgia Power coal ash to be used as feedstock for the production of critical materials that are essential for national defense and for renewable energy production.

A second project, involving the processing and characterization of different harvested ashes from multiple ponds, is currently under development. This project will provide baseline information about the performance and energy requirements of the center components as well as providing a comparison of the relative beneficiation potential of the different ashes. Additionally, the first round of emerging technologies for development and demonstration is under evaluation, and projects involving the production of lightweight aggregate from ash and the extraction of valuable minerals are being considered.

EPRI is also pursuing external funding opportunities through grant proposals submitted to the U.S. Department of Energy (“DOE”). The Company will continue to be engaged in these various efforts as appropriate.

Additionally, Georgia Power and Southern Company are involved as participants with several DOE-supported projects, which are working to evaluate coal ash as a domestic source for rare earth elements and critical minerals. One project supported and managed by the National Energy Technology Laboratory aims to develop a framework and conceptual design for a facility that would extract rare earth elements and critical minerals from coal ash at a commercial scale, leveraging existing coal ash located throughout the southeastern U.S. Georgia Power is also participating through Southern Company on two project teams as part of DOE’s Carbon Ore, Rare Earths and Critical Minerals Initiative with the goal of driving regional economic development to establish a domestic supply chain, using coal ash as an important resource.

### **Beneficial Use of Stored Ash at the Facility Level**

Georgia Power is seeking to identify opportunities and maximize the value for the beneficial use of stored coal ash at its active and retired plants across the state. The costs of and benefits from beneficial reuse of stored coal ash at these sites will be applied to the CCR ARO liability. Relevant updates are included below.

#### **Plant Mitchell**

The Company is continuing with plans to remove the stored coal ash at Plant Mitchell’s three ash ponds for beneficial use. Over the next several years, up to two million tons of ash are planned to be removed from the site to help create



Portland cement, which is used to make concrete. These beneficial use plans will reduce the amount of ash required to be removed to an off-site landfill and ultimately serve to produce a valuable product. Through February 2022, approximately 168,500 tons of ash have been removed from the site for this purpose. Progress thus far has been moderated by transportation logistics and the ability of end users to receive and process the ash for beneficial use. Additional challenges include establishing long-term contracts with the end users, disruptions from the COVID-19 pandemic, and interruptions in the supply chain and transportation sectors. The Company is continuing to work with the on-site contractor to pursue additional end users of the ash.

### **Request for Proposals**

In December 2019, Georgia Power announced an RFP for the beneficial use of stored coal ash at Georgia Power facilities. Interested bidders were asked to submit information and complete pre-qualification questionnaires in January 2020. In July 2020, a pre-bid meeting was held with the pre-qualified bidders and submissions of initial proposals were completed in the fourth quarter of 2020. Bidders were then given the opportunity to provide additional information in early 2021. In the third quarter of 2021, the Company progressed into negotiations with the top bidders for proposals that indicated the ability to beneficially use ash and provide value to customers. Negotiations with top bidders are ongoing. Georgia Power expects to complete the RFP process in 2022.

The aforementioned proposals provided numerous options for consideration. A third-party engineering consultant supported the Company in reviewing and evaluating which proposals offered the most value to customers. The Company's in-depth evaluation included, without limitation, the effects of the various beneficial use proposals on closure plans, project timelines, project costs, project sequencing, and project infrastructure requirements. The results of the assessment indicated that not all proposals were expected to add value to customers; however, some proposals did show the potential for overall net benefits.

Georgia Power is seeking to identify opportunities from the proposals that bring value to the CCR program, that can be incorporated into the CCR strategy, and will ultimately allow for more ash to be beneficially used from ash ponds and landfills. Based upon the information received through the RFP, for certain facilities, there is an opportunity to incorporate ash beneficial use throughout the multi-year closure timeframe in an effort to return an expected net positive benefit for customers.



The Company will continue to collaborate and work with the Commission on providing timely updates and key insights throughout the process.

1. *Journal of the American Medical Association*, 1997; 277: 1001-1005.

- [illegible]

1. **Introduction**

October 1, 2020, and which were aligned with the Company's October 2020 CCR ARO semi-annual progress report. This actual variance is primarily due to activity at five sites as described in Table 9 below. Activities associated with the 2021 year-to-date variance have been re-forecasted into future periods as appropriate.

Tables 6, 7, and 8 below contain the latest projected estimates for Georgia Power's CCR ARO ash pond closure and landfill projects. These estimates incorporate the assumptions discussed in the preceding paragraphs, as well as the longer-term assumptions referenced in Section V of this report.

**Table 6. Current Cost Estimates for CCR ARO Ash Pond Closure Projects****Ash Ponds**

(\$ in Millions)

Facility	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Bowen	\$ 134.3	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Branch	\$ 88.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Hammond	\$ 83.3	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Kraft	\$ 8.4	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
McDonough	\$ 111.7	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
McIntosh	\$ 15.9	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
McManus	\$ 103.3	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Mitchell	\$ 64.9	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Scherer	\$ 8.5	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Wansley	\$ 18.8	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Yates	\$ 219.7	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
<b>Ash Pond Subtotal</b>	<b>\$ 856.9</b>	<b>\$ 299.2</b>	<b>\$ 283.5</b>	<b>\$ 308.0</b>	<b>\$ 390.8</b>	<b>\$ 1,363.6</b>	<b>\$ 3,638.8</b>	<b>\$ 7,140.7</b>
<i>Escalation included in Forecast above**</i>	<i>N/A</i>	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	\$ 1,569.3

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021.

\*\*Forecasted escalation is applied based on ARO accounting standards under ASC 410.

Note: Details may not add to totals due to rounding.

Table 7. Current Cost Estimates for CCR ARO Landfill Projects

## Landfills

(\$ in Millions)

Facility	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Arkwright	\$ 29.5	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Bowen	\$ 0.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Branch	\$ 0.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Hammond	\$ 1.5	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Kraft	\$ 14.2	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
McIntosh	\$ 9.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Scherer	\$ 0.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Wansley	\$ 0.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Yates	\$ 33.0	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Landfill Subtotal	\$ 87.3	\$ 30.8	\$ 36.3	\$ 59.0	\$ 96.9	\$ 274.8	\$ 1,259.3	\$ 1,844.5
Escalation included in Forecast above**	N/A	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	\$ 791.7

## Retail Cost Estimates

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021.

\*\*Forecasted escalation is applied based on ARO accounting standards under ASC 410.

Note: Details may not add to totals due to rounding.

**Table 8. Current Cost Estimates for CCR ARO Ash Pond Closure and Landfill Projects**

Category	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Ash Pond Subtotal	\$ 856.9	\$ 299.2	\$ 283.5	\$ 308.0	\$ 390.8	\$ 1,363.6	\$ 3,638.8	\$ 7,140.7
Landfill Subtotal	\$ 87.3	\$ 30.8	\$ 36.3	\$ 59.0	\$ 96.9	\$ 274.8	\$ 1,259.3	\$ 1,844.5
Total	\$ 944.2	\$ 330.0	\$ 319.8	\$ 367.1	\$ 487.6	\$ 1,638.4	\$ 4,898.1	\$ 8,985.2

Escalation included  
in Forecast above\*\*

N/A REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED \$ 2,361.0

#### Retail Cost Estimates

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021.

\*\*Forecasted escalation is applied based on ARO accounting standards under ASC 410.

Note: Details may not add to totals due to rounding.

**Table 9. 2021 Year-to-Date Actual versus Budget Comparison**

	January - December 2021 Actuals	January - December 2021 Budget*	January - December 2021 Variance
Arkwright	\$ 5.0	REDACTED	REDACTED
Bowen	\$ 37.7	REDACTED	REDACTED
Branch	\$ 27.0	REDACTED	REDACTED
Hammond	\$ 18.7	REDACTED	REDACTED
Kraft	\$ 1.4	REDACTED	REDACTED
McDonough	\$ 23.2	REDACTED	REDACTED
McIntosh	\$ 9.0	REDACTED	REDACTED
McManus	\$ 4.2	REDACTED	REDACTED
Mitchell	\$ 23.6	REDACTED	REDACTED
Scherer	\$ 4.8	REDACTED	REDACTED
Wansley	\$ 8.3	REDACTED	REDACTED
Yates	\$ 40.6	REDACTED	REDACTED
<b>Total</b>	<b>\$ 203.4</b>	<b>\$ 310.8</b>	<b>\$ (107.3)</b>

**Retail Cost Estimates**

\*Budget associated with the 2021 compliance filing submitted to the PSC in Docket No. 42516 on October 1, 2020.

Note: Details may not add to totals due to rounding.

**2021 Year-to-Date Actual versus Budget Summary**

Table 9 summarizes 2021 year-to-date actual costs for CCR ARO activities at all sites compared to the budget associated with the 2021 compliance filing for the same time period. The variance to the forecast for the portfolio is primarily driven by the following:

- **Bowen:** REDACTED REDACTED REDACTED REDACTED REDACTED for the ash pond closure have been incorporated into the project's forecast and REDACTED near term cash flows for the site. Bowen AP-1 ash movement and dewatering is underway but proceeding slower than planned primarily due to water management activities. Additionally, forecasted contingency dollars have been shifted to future years to align with the updated schedule and risk assumptions for the project.
- **Hammond:** REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED have been incorporated into the Company's updated forecast and REDACTED near term cash flows for the site. The transition to the prime contractor for the Phase 1 work also resulted in under-runs compared to the previous forecast as the competitive bid process was finalized, and prime contract awarded.



- **McDonough**: The variance to forecast is primarily associated with the timing of cash flows associated with McDonough AP-3 and AP-4 cap and cover work based on weather impacts at the site and a resequencing of closure activities. Additionally, forecasted contingency dollars have been shifted to future years to align with the updated schedule and risk assumptions for the project.
- **Mitchell**: The site has realized delays in ash sales associated with its beneficial use forecast. Progress has been moderated by transportation logistics and the ability of end users to receive and process the ash for beneficial use. Additional challenges include establishing long-term contracts with the end users, disruptions from the COVID-19 pandemic, and interruptions in the supply chain and transportation sectors. The Company is continuing to work with the on-site contractor to pursue additional end users of the ash. Additionally, forecasted contingency dollars have been shifted to future years to align with the updated schedule and risk assumptions for the project.
- **Yates**: The Company expects to complete closure in 2022 and as the site nears its expected completion, a reduction in risk-associated dollars has been incorporated into the forecast.

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## V. FINANCIAL AND SCHEDULE SUMMARY – CCR UNIT LEVEL

The Company maintains cost and schedule information for each of its CCR units. Site-specific cost and schedule information for each of its CCR units is detailed further below.

The Company, with input from third-party experts, has developed forecasts for these long-term projects, some of which span more than 60 years, based on a combination of factors including, but not limited to, regulatory considerations, engineering studies, detailed closure design, constructability reviews, construction progress, water treatment considerations, operational needs, and post-closure requirements for its sites.

The Company is actively managing these long-term projects and will continue to make updates to reflect upward and downward pressures on cost and schedules for each project. There are several activities or factors in the near term that could impact costs and schedule, which will be closely monitored as the portfolio of projects mature: these include the completion of detailed design for all sites, active construction progress, contractor performance, completion of competitive bids and contracting for pending projects, approval and implementation of remaining dewatering plans, the potential to take advantage of beneficial use opportunities during closure, actions pertaining to ongoing ACMs, and additional environmental regulatory actions and requirements. Similarly, there are factors that could impact the projects in the long-term as construction activities are completed and sites enter post-closure. These factors include the development of future beneficial use opportunities as the ash market matures, refinement of labor assumptions, optimization of groundwater monitoring networks, advancement of water treatment technologies, refinement of long-term maintenance assumptions for grass and closure turf, and realization of the overall impact of emerging technologies on the program.

The fourth quarter 2021 review reflects the Company's latest information and, in addition to near term cash flow trends discussed in Section IV of this report, includes upward and downward pressures on the program's total EAC. For example, the inclusion of 90% detailed design in the closure estimate for Plant Branch resulted in upward cost pressure associated with additional dewatering scope, engineering and CQA support, updated fuel quantity, and updated schedule durations. Additionally, upward cost pressure was realized at Plant Wansley based on the final design of a deep soil mix containment structure with a concrete façade into the project's estimate. The Plant Scherer ash pond closure estimate also experienced upward cost pressure due to refined water management assumptions based on input from third-party experts. Finally, the Company reviewed its operational landfill estimates at Plants Bowen, Wansley, and Scherer for relevant updates on quantities, unit pricing, and post closure timing which also resulted in slight upward pressure on costs.

Contingency estimates were appropriately assessed as part of the estimating process for these projects (Plant Branch, Plant Wansley ash pond, Plant Scherer ash pond, and the operational landfills at Plants Bowen, Wansley and Scherer). The contingency estimate was reduced at Plant Yates based on an updated quantitative risk analysis assessment for the project as it nears its expected closure completion. The net upward cost pressure for the program, based on the culmination of all of these factors during the fourth quarter 2021 review process, was mitigated by draws from the program's management reserve. Therefore, the program's nominal estimate at completion ("EAC") is consistent with the Company's October 1, 2021 Semi-Annual Progress Report. Escalation was reassessed based on required accounting standards, and the program's total retail EAC is materially consistent with the Company's October 1, 2021 Semi-Annual Progress Report.

As design, engineering, and contracting activities advance, sites will continue to update cost estimates and cash flow projections. Estimating and forecasting activities, as well as contracting activities for future work, are expected to be performed during future years of the program. As discussed previously in this report, the ultimate outcome of the pending decision pertaining to the Plant Wansley ash pond closure strategy and closure method may impact cost and schedule forecasts and will be updated with future CCR Semi-Annual Program Status Reports.

**Financial Summary- CCR Unit Level**

The cost summaries include project-to-date actuals through December 31, 2021, and current estimated cost forecasts for each site, including each ash pond and CCR landfill ("LF"). Additionally, costs by activity are grouped into the categories listed below.

- **Previous Closure Costs**: Actual costs incurred prior to January 1, 2014.
- **Program Management**: Compliance activities including, but not limited to, permitting, groundwater monitoring, corrective action, and program oversight, as well as management reserve which is cash flowed in years 2026 and beyond.
- **Front-End Planning**: Activities including design to 90-percent, third-party constructability reviews, and other technical and engineering costs.
- **Detailed Engineering Costs**: Activities associated with the detailed engineering design and engineering support during construction.
- **Construction**: Construction activities for the CCR unit-specific closure plans. Construction activities include, but are not limited to, procurement, water treatment, site preparation, transportation improvements, site maintenance, beneficial use costs and credits during closure, stability and performance monitoring, ash excavation, ash transport, ash consolidation and placement, installation of a cover system, installation of engineering controls, site restoration, and landfill development to support ash pond closures. Construction activities also include construction indirect costs such as temporary facilities, project and construction management, quality assurance, quality control, and temporary facilities.
- **Post-Closure Costs**: The time period after principal construction during which requirements to conduct monitoring, manage water, and conduct maintenance exist. This category represents both the actual and/or estimated IPCC and PCC costs for the site. This category encompasses both post-closure for a closure in place project and post-removal for a closure by removal project.

## Arkwright

Table 10. Arkwright Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2033 Forecast	Total
Arkwright AP-1,2,3, Landfill	Closure by removal to permitted landfill	\$ 29.5							REDACTED
<b>Total</b>		<b>\$ 29.5</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 11. Arkwright Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2033 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								REDACTED
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 29.5</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$5.0 million consist primarily of water management (transportation & disposal), groundwater monitoring, maintenance, front-end planning design and engineering, third-party permitting support, and program oversight. Activities expected during 2022 include continued water management, routine site maintenance, groundwater monitoring, permitting, front-end planning, detailed engineering, and program oversight.

(\$ in Millions)

### **Retail Cost Estimates**

*Note: Details may not add to totals due to rounding*

(\$ in Millions)

### ***Retail Cost Estimates***

Note: Details may not add to totals due to rounding

2021 year-to-date actuals through December of \$37.7 million consist primarily of ash pond closure site preparation, dewatering water treatment system construction & operation, mobilization of the prime contractor, ash excavation and associated closure activities, transportation improvements, demolition activities, groundwater monitoring, construction management, and program oversight. Activities expected during 2022 include continued dewatering water treatment operations, continued ash excavation and associated closure activities, continued groundwater monitoring, construction management, and program oversight, as well as REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED REDACTED.



## Branch

Table 14. Branch Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-A	Closure by removal to permitted landfill	\$ 1.3							
AP-B	Closure by removal to permitted landfill	\$ 12.0							
AP-C	Closure by removal to permitted landfill	\$ 9.4							
AP-D	Closure by removal to permitted landfill	\$ 6.4				REDACTED			
AP-E	Closure by removal to permitted landfill	\$ 58.9							
Landfill	Closure in place	\$ -							
<b>Total</b>		<b>\$ 88.0</b>							

*Retail Cost Estimates*

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to Project to Date Actuals Through Dec 2021

Table 15. Branch Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs				REDACTED				
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 88.0</b>							

*Retail Cost Estimates*

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Notes

2021 year-to-date actuals through December of \$27.0 million consist primarily of detailed engineering design, technical services permitting support, groundwater compliance and well installations, ash pond dewatering, stormwater diversion projects, site security, routine site maintenance, construction management, and program oversight. Activities expected during 2022 include groundwater monitoring, installation of the landfill groundwater well system, continued early site work, continued detailed design for the ash ponds and landfill closure, ash pond dewatering, site maintenance, site security, mobilization of the prime contractor for landfill cells 1-6, construction management, and program oversight.

## Hammond

Table 16. Hammond Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Closure by removal to permitted landfill	\$ 11.3							
AP-2	Closure by removal to permitted landfill	\$ 22.7							
AP-3	Advanced closure in place	\$ 25.8							
AP-4	Closure by removal to permitted landfill	\$ 23.6							
Huffaker Road CCB Facility	Closure in place	\$ 1.5							
<b>Total</b>		<b>\$ 84.8</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 17. Hammond Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 84.8</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$18.7 million consist primarily of ash pond dewatering activities, mobilization of the Phase 1 (AP-1, AP-2, Huffaker A/B) Prime contractor, groundwater monitoring, construction management, program oversight, preconstruction costs associated with the implementation of TreeWells to benefit the closure of AP-3, and IPCC costs for AP-3. Prime contractor ash excavation from AP-2 began in 2021. Activities expected during 2022 include continued excavation of ash from AP-2 and AP-1 with final placement in the Huffaker Road Landfill, ash pond dewatering, groundwater monitoring, costs associated with the implementation of TreeWells technology, PCC costs for AP-3, construction management, and program oversight.

## Kraft

Table 18. Kraft Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Closure by removal to permitted landfill	\$ 8.4							
Grumman Road Landfill	Closure in place	\$ 14.2					REDACTED		
<b>Total</b>		<b>\$ 22.7</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 19. Kraft Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 22.7</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$1.4 million consist primarily of ongoing IPCC monitoring and maintenance costs for Kraft Grumman Road Landfill. Activities expected during 2022 include the continuation of IPCC monitoring and maintenance and the start of PCC monitoring and maintenance for Kraft Grumman Road Landfill.

## McDonough

Table 20. McDonough Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Advanced closure in place	\$ 21.9							
AP-2	Closure by removal	\$ 16.1							
AP-3	Advanced closure in place	\$ 33.9							
AP-4	Advanced closure in place	\$ 39.8							
<b>Total</b>		<b>\$ 111.7</b>							

*Retail Cost Estimates**\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021**Note: Details may not add to totals due to rounding*

Table 21. McDonough Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 111.7</b>							

*Retail Cost Estimates**\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021**Note: Details may not add to totals due to rounding***Notes**

2021 year-to-date actuals through December of \$23.2 million consist primarily of continued prime contractor work for ash excavation, closure turf installation, and site restoration; stormwater diversion work; continued dewatering and water treatment operations; barrier wall design services and civil scopes of work for AP-1; continued interim use of the dewatering wells on AP-3/4; construction management; and program oversight. Activities expected during 2022 include completion of the remaining closure turf installation for AP-3/4, continued dewatering and water treatment operations in support of final construction activities, costs associated with civil work and barrier wall installation for AP-1, site restoration, groundwater monitoring, construction management, program oversight, and the start of IPCC for AP-2, AP-3, and AP-4.

## McIntosh

Table 22. McIntosh Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Closure by removal to permitted landfill	\$ 15.9							
Landfill 3	Closure in place	\$ 2.0							
Landfill 4	Closure in place	\$ 7.1							
<b>Total</b>		<b>\$ 25.0</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 23. McIntosh Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 25.0</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$9.0 million consist primarily of dewatering, ash excavation, and hauling material from AP-1 to the on-site CCR landfill, as well as groundwater monitoring, plant costs, program oversight, and IPCC costs associated with AP-1 and Landfill 4. Activities expected during 2022 include backfilling and restoring AP-1 and installing cover on Landfill 4, as well as ongoing IPCC costs associated with AP-1 and Landfill 4.

## McManus

Table 24. McManus Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Closure by removal to permitted landfill	\$ 103.3							
<b>Total</b>		<b>\$ 103.3</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 25. McManus Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 103.3</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$4.2 million consist primarily of PCC monitoring and maintenance costs and the start of PCC monitoring and maintenance costs. Dewatering water treatment was completed in 2021. Activities expected during 2022 include completion of the NPDES outfall modifications and continued PCC monitoring and maintenance.



## Mitchell

Table 26. Mitchell Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-A	Closure by removal to permitted landfill and beneficial use	\$ 1.4							
AP-1	Closure by removal to permitted landfill and beneficial use	\$ 27.1							
AP-2	Closure by removal to permitted landfill and beneficial use	\$ 36.4							
<b>Total</b>		<b>\$ 64.9</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 27. Mitchell Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 64.9</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$23.6 million consist primarily of groundwater monitoring, dewatering water treatment, continued prime contractor work including excavation and transportation of ash for beneficial use, construction management, and program oversight. Activities expected during 2022 include continued groundwater monitoring, dewatering water treatment, continued prime contractor work including excavation and transportation of ash for beneficial use, construction management, and program oversight.

## Scherer

Table 28. Scherer Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Advanced closure in place	\$ 8.5							
Landfill	Active landfill / closure in place	\$ 0.0				REDACTED			
<b>Total</b>		<b>\$ 8.5</b>							

*Retail Cost Estimates**\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021**Note: Details may not add to totals due to rounding*

Table 29. Scherer Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs				REDACTED				
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 8.5</b>							

*Retail Cost Estimates**\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021**Note: Details may not add to totals due to rounding*Notes

2021 year-to-date actuals through December of \$4.8 million consist primarily of early site work activities such as clearing for general access, site access roads, preparing the construction laydown area, and installing a 12kv power distribution loop, as well as preparing the water treatment plant area, groundwater monitoring, construction management, and program oversight. These actuals are also inclusive of design and engineering activities for the ash pond closure project and engineering construction support for the early sitework construction activities. Activities expected during 2022 include completion of early sitework, construction and commissioning of the water treatment plant, continued contracting activity at the site, continued groundwater monitoring, construction management, and program oversight.

## Wansley

Table 30. Wansley Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)

Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Advanced closure in place	\$ 18.8							
Landfill	Active landfill / closure in place	\$ 0.0							REDACTED
<b>Total</b>		<b>\$ 18.8</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 31. Wansley Current Estimated Cost by Executive Cost Code

(\$ in Millions)

	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								REDACTED
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 18.8</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes**

2021 year-to-date actuals through December of \$8.3 million consist primarily of early site work activities, start of the installation of the dewatering water treatment plant, groundwater monitoring, detailed engineering, construction management, and program oversight. Activities expected during 2022 include commissioning the dewatering water treatment plant, continuing geotechnical activities to support closure design and evaluations, groundwater monitoring, construction management, and program oversight.

## Yates

Table 32. Yates Current Estimated Cost by Ash Pond / Landfill

(\$ in Millions)									
Ash Pond / Landfill	Closure Method	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
AP-1	Closure by removal	\$ 17.1							
AP-2	Closure by removal	\$ 91.9							
AP-3	Advanced closure in place	\$ 70.0							
AP-A	Closure by removal	\$ 17.2							
AP-B	Closure by removal	\$ 14.4							
AP-B'	Advanced closure in place	\$ 9.2							
Gypsum Landfill	Closure by removal to permitted landfill and beneficial use	\$ 4.3							
R6 Landfill	Closure in place	\$ 28.8							
		\$ 252.7							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

Table 33. Yates Current Estimated Cost by Executive Cost Code

Table 33. Rates Current Estimated Cost by Executive Cost Code				(\$ in Millions)				
	Project to Date Actuals Through December 2021*	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026-2028 Forecast	2029-2083 Forecast	Total
Previous Closure Cost								
Program Management								
Front End Planning								
Detailed Engineering Costs								
Construction								
Post Closure Costs								
<b>Total</b>	<b>\$ 252.7</b>							

**Retail Cost Estimates**

\*Project-to-Date Actuals represent costs incurred from January 1, 2003 through December 31, 2021

Note: Details may not add to totals due to rounding

**Notes:**

2021 year-to-date actuals through December of \$40.6 million consist primarily of ash excavation, hauling, and placement, installation of backfill material, installation of closure turf in the ash management area, construction of the Dyer Road sheet pile wall, construction of a new earthen dam and spillway, groundwater monitoring, construction management, program oversight, and IPCC monitoring and maintenance for AP-1 and the gypsum landfill. Activities expected during 2022 include ash excavation, hauling, and placement, closure turf installation in the ash management area, site restoration, Dyer Road improvements, and continued construction of the new earthen dam and spillway. Closure of Yates AP-2, AP-A/AP-B/AP-3/AP-B', and R-6/AP-C is expected in 2022. Continued post closure monitoring and maintenance for AP-1 and the gypsum landfill, construction management, and program oversight are also expected during 2022.

**Schedule Summary- CCR Unit Level**

The following Gantt charts include schedule summaries for each site, with activities for each ash pond and CCR landfill grouped into the categories listed below:

- **Ash Ponds:**

- **Name of the Unit:** Includes the overall duration of closure activities.
- **Site Regulatory:** For scheduling purposes, assumed to begin with the effective date of the Federal CCR Rule. Includes permitting activities, permit renewals, dewatering plan development and associated compliance documentation, and other required compliance activities.
- **Front-End Planning/Engineering/Procurement:** Project planning and construction preparations including engineering design, third-party constructability reviews, contracting milestones for dewatering, quality assurance, and construction contracts, and other technical and engineering activities.
- **Construction/Water Management:** Includes prime contractor mobilization and milestones for closure and restoration along with water management, dewatering, and water treatment milestones.
- **Interim Post-Closure Care (IPCC):** Includes activities that extend beyond CCR removal (for closure by removal units) and/or closure construction (for closure in place units), including groundwater monitoring, water management, general site maintenance, and other compliance activities in the interim of PCC.
- **Post-Closure Care (PCC):** Includes activities that extend beyond closure construction, including groundwater monitoring, water management, general site maintenance, and other compliance activities following IPCC. This category encompasses both post-closure for a closure in place project and post-removal for a closure by removal project.

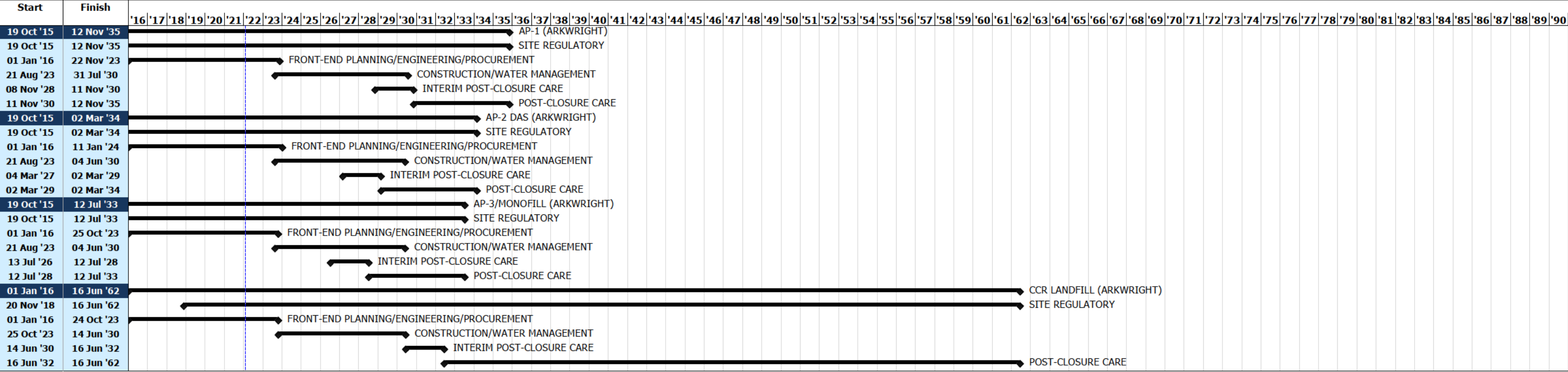
- **CCR Landfills:**

- **Name of the Unit and Landfill Cell:** Includes the overall duration of activities.
- **Active Landfill:** Includes timeframe the landfill cell was or projected to be active and receiving CCR.

- **Cell Closure/Capping/Closure Construction/Water Management:**  
Includes closure construction milestones, water management activities, and compliance activities related to the final closure.
- **Interim Post-Closure Care (IPCC):** Includes activities that extend beyond closure construction, including groundwater monitoring, water management, general site maintenance, and other compliance activities in the interim of PCC.
- **Post-Closure Care (PCC):** Includes activities that extend beyond closure construction, including groundwater monitoring, water management, general site maintenance, and other compliance activities following IPCC. This category encompasses both post-closure for a closure in place project and post-removal for a closure by removal project.

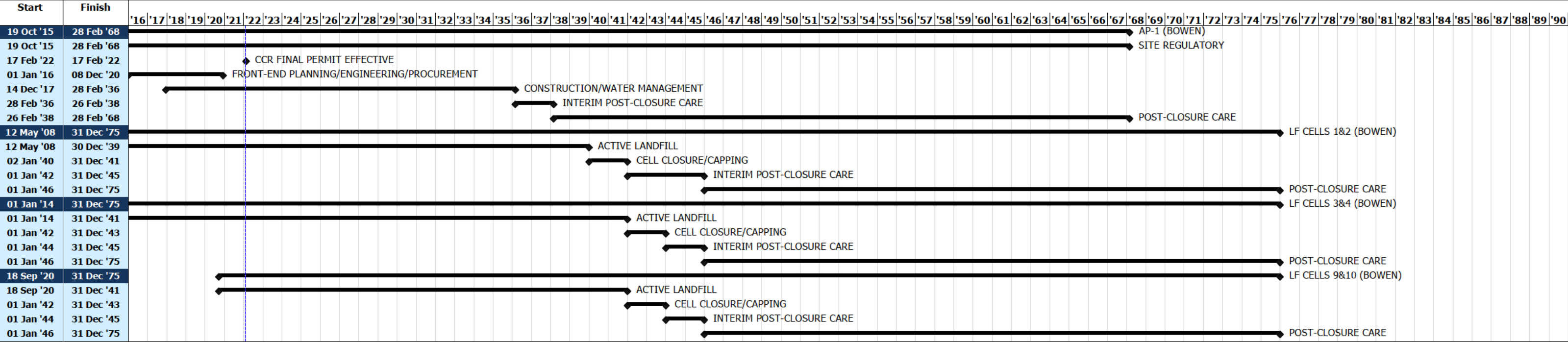


Ash Pond Closure Portfolio  
Gantt Chart by Plant



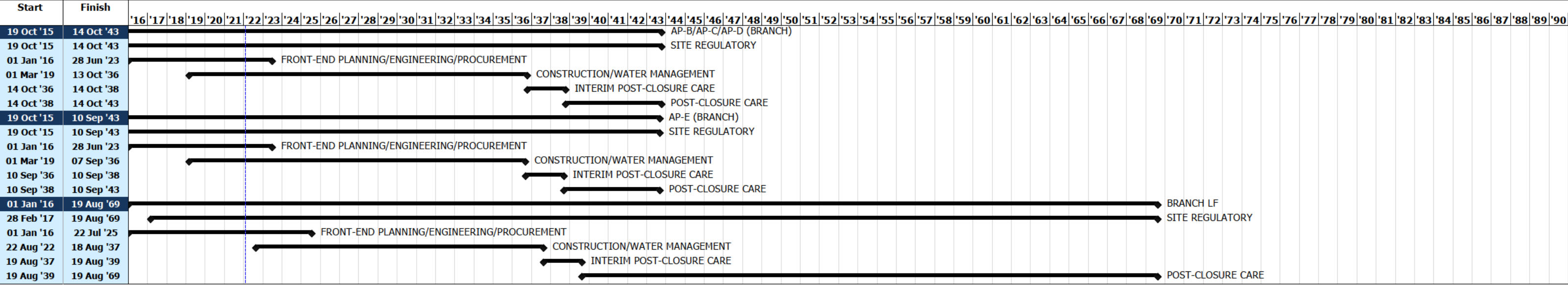
Ash Pond Closure Portfolio

Gantt Chart by Plant

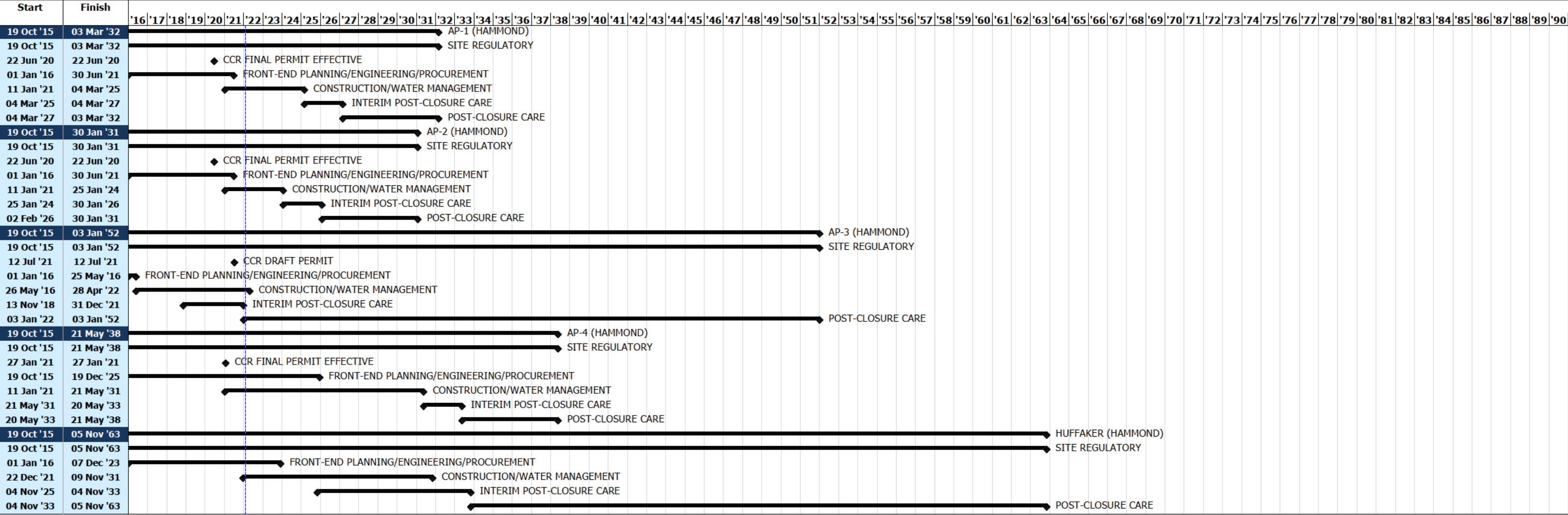


Ash Pond Closure Portfolio

Gantt Chart by Plant

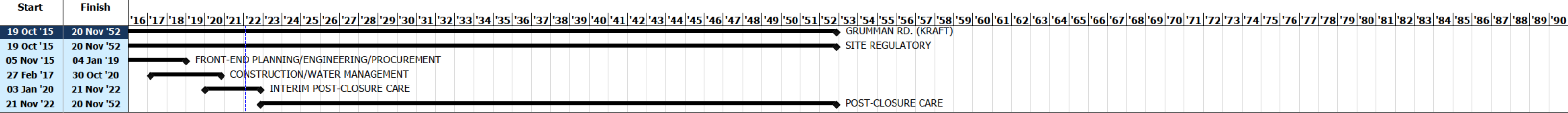


Ash Pond Closure Portfolio  
Gantt Chart by Plant

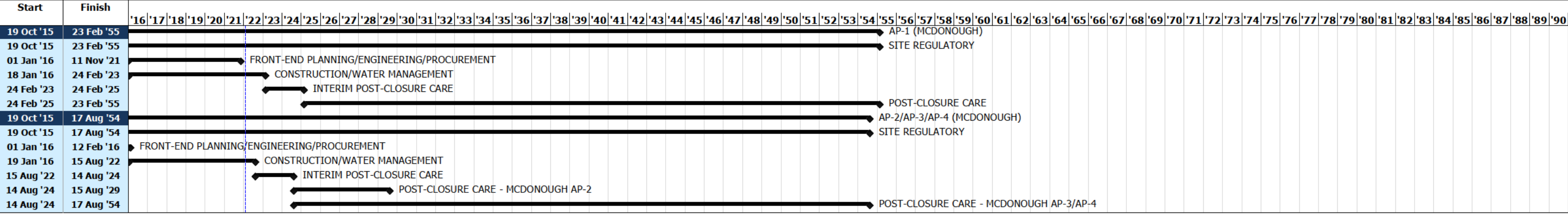


Ash Pond Closure Portfolio

Gantt Chart by Plant

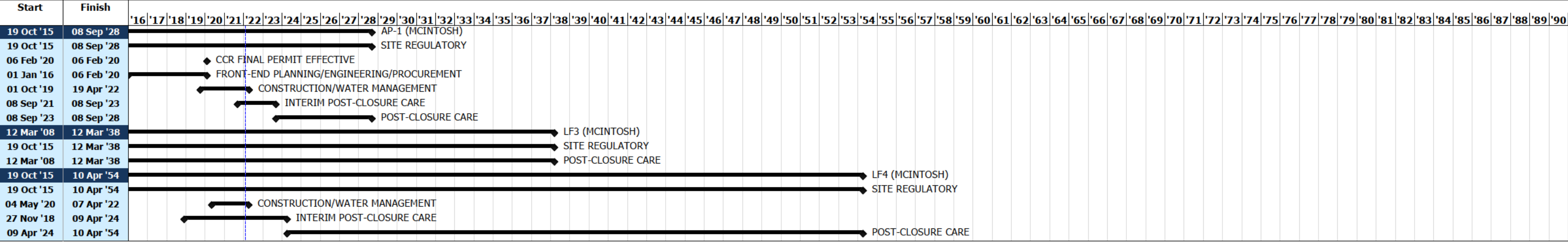


Ash Pond Closure Portfolio  
Gantt Chart by Plant



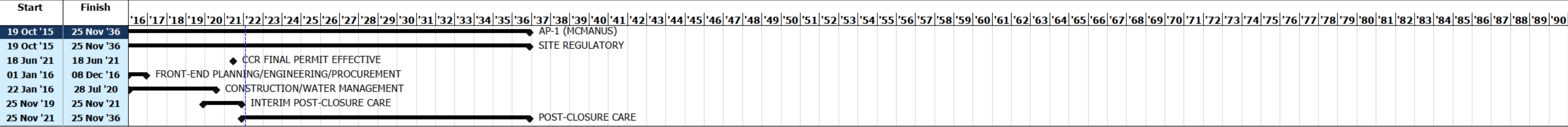


Ash Pond Closure Portfolio  
Gantt Chart by Plant



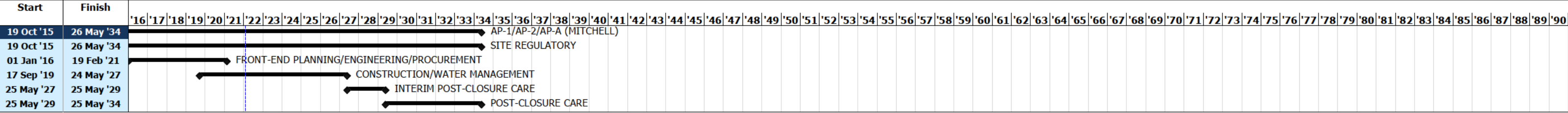
Ash Pond Closure Portfolio

Gantt Chart by Plant



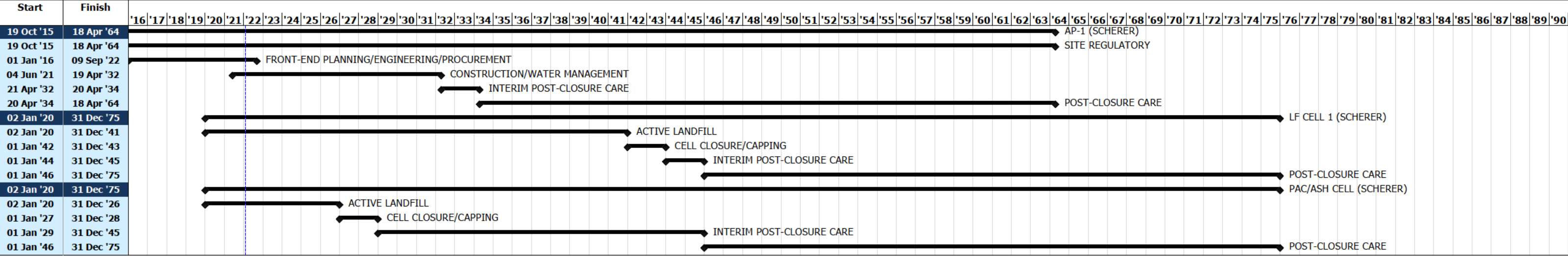
Ash Pond Closure Portfolio

Gantt Chart by Plant



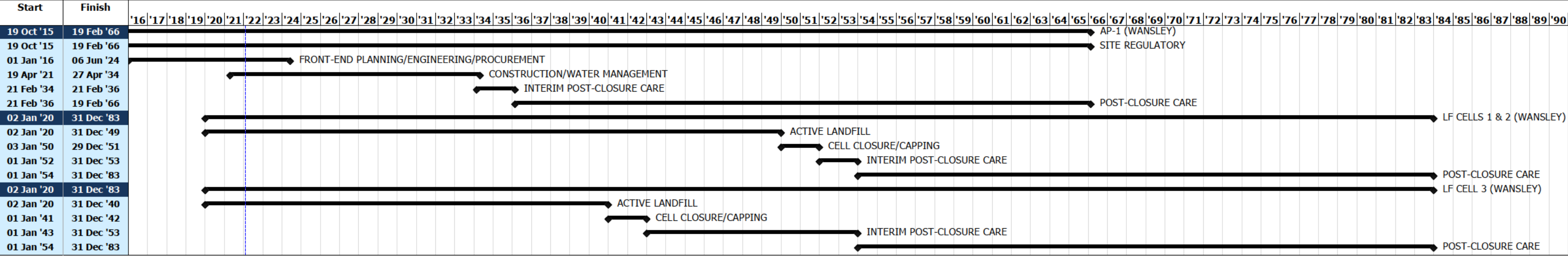
Ash Pond Closure Portfolio

Gantt Chart by Plant



Ash Pond Closure Portfolio

Gantt Chart by Plant



Ash Pond Closure Portfolio  
Gantt Chart by Plant



## VI. APPENDIX A

### Abbreviations and Terminology

<b>ABUC</b>	<b>Ash Beneficial Use Center</b>
<b>ACM</b>	<b>Assessment of Corrective Measures</b>
<b>AP</b>	<b>Ash Pond</b>
<b>ARO</b>	<b>Asset Retirement Obligation</b>
<b>ASC</b>	<b>Accounting Standards Codification</b>
<b>CCR</b>	<b>Coal Combustion Residual</b>
<b>DOE</b>	<b>Department of Energy</b>
<b>EAC</b>	<b>Estimate at Completion</b>
<b>ECS</b>	<b>Environmental Compliance Strategy</b>
<b>EPD</b>	<b>Environmental Protection Division</b>
<b>EPRI</b>	<b>Electric Power Research Institute</b>
<b>GPC</b>	<b>Georgia Power Company</b>
<b>IPCC</b>	<b>Interim Post-Closure Care</b>
<b>IRP</b>	<b>Integrated Resource Plan</b>
<b>LF</b>	<b>Landfill</b>
<b>PCC</b>	<b>Post-Closure Care</b>
<b>PSC</b>	<b>Georgia Public Service Commission</b>
<b>RFP</b>	<b>Request for Proposal</b>