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Subject: §257.103(f)(2) ANNUAL PROGRESS REPORT DOCUMENTING THE CONTINUED LACK OF ALTERNATIVE CAPACITY AND PROGRESS TOWARDS CLOSURE OF THE FAP AND BAP
Cholla Power Plant – Navajo County, Arizona

In accordance with the requirement for an annual progress report required by 40 CFR §257.103(f)(2)(x), this report documents the continued lack of alternative disposal capacity for coal combustion residuals (CCR) at the Arizona Public Service Company (APS) Cholla Power Plant during the reporting period (i.e., December 1, 2023 through November 30, 2024). This report also describes progress made during the reporting period towards closure of two CCR units that APS has requested a site-specific alternative deadline to initiate closure for: the Fly Ash Pond (FAP) and the Bottom Ash Pond (BAP). Our demonstration prepared pursuant to §257.103(f)(2) was submitted to the United States Environmental Protection Agency (US EPA) on November 30, 2020 and was determined by the US EPA to be complete on January 11, 2022. As a consequence of submitting a complete demonstration, the deadline to cease receipt of waste at the FAP and BAP has been tolled until the US EPA issues a final determination regarding the demonstration.

Background. The 420-acre FAP and 80-acre BAP are unlined surface impoundments that receive CCR from coal-fired boiler operations at the Cholla Power Plant. In accordance with the requirements of federal CCR regulations, both the FAP and BAP must cease receiving CCR in the near term and "close for cause." Since APS plans to cease coal-fired boiler operations at Cholla Power Plant no later than April 2025 and complete closure of the FAP and BAP by October 17, 2028, APS seeks to continue receiving CCR and non-CCR wastestreams in the FAP and BAP under the alternative closure provision of §257.103(f)(2) through June 2025 to accommodate decommissioning.

Lack of Alternative Disposal Capacity. There have been no changes in alternative disposal capacity since submittal of our §257.103(f)(2) demonstration. If the FAP and BAP were not available to receive CCR, coal-fired electrical generation operations at Cholla Power Plant would need to shut down because:

- The FAP and BAP are the only existing CCR units located on-site that are sized and designed appropriately to receive CCR and non-CCR wastestreams generated by operation of Cholla Power Plant.
- Management of CCR and non-CCR wastestreams in wet temporary storage on-site is not technically feasible, let alone safe or adequately protective of the environment, given the projected volumes and the corresponding number of temporary tanks that would be required to contain the wastestreams.
- It is not technically feasible to send wet CCR off-site for disposal – there is no appropriate off-site treatment or disposal facility nearby that the CCR could be piped to and trucking/conveying by rail significant quantities of liquids to an appropriate waste processing facility or landfill is unlikely to be successful. Off-site transport of this

liquid CCR risks creating significant threats to public safety; these risks far out-weigh the benefit of off-site disposal of CCR.

Progress Towards Closure. Attachment D(2) of our §257.103(f)(2) demonstration identified multiple tasks required to advance closure of the FAP and BAP by October 17, 2028. An updated version of Attachment D(2) is enclosed with this report. Progress on these tasks is as follows:

- FAP Water Level Monitoring – Decant (free) water level monitoring in the FAP continued during the reporting period and is being conducted to track progress of dewatering the unit. Based on the results of monthly monitoring, the level of the FAP in November 2024 was 5,080 ft above mean sea level (AMSL) and has declined by 1.2 feet thus far in 2024. This rate of decline is consistent with declines typically observed by this time each year. Declines between the December of the previous year and November of the following year from 2020 through 2023 have ranged from 0.27 to 2.9 feet with an average of 1.7 feet. The quantity of rainfall received in a year significantly contributes to variability in pond level declines each year.
- Enhanced Evaporation in the FAP decant pond – APS installed twelve RWI Pittboss mechanically enhanced evaporators to promote evaporation of free water in the FAP in 2022. Since the units began operating in August of 2022, issues with the units becoming detached from their mooring and capsizing led to intermittent operation. The evaporators were taken offline in early March 2023 and redeployed using a new anchoring system in June 2023. Continued tethering issues with the units resulted in the removal of the evaporators in February 2024. An alternative strategy to address the decant water in this pond was developed during the reporting period. This water will be pumped to a temporary pond being constructed in the FAP footprint where ongoing evaporation of the water can continue and the soils under the decant water can be stabilized.
- Stockpile bridge lift material at the FAP – APS is currently in the process of relocating bottom ash from the Bottom Ash Monofill (BAM) to be used as future bridge lift material in FAP closure; this activity began in July 2023 and is anticipated to continue through June 2025. The estimated volume of bottom ash relocated from the BAM to the FAP to date is approximately 1,200,000 cubic yards.
- FAP Closure Detailed Design Engineering – During the reporting period, detailed design of the FAP closure strategy was progressed. A stormwater management system including multiple lined evaporation basins that will collect and retain non-contact stormwater run-on and run-off was designed. Capping design continued with test pitting in the vicinity of planned evaporation basins to assess soil suitability and modeling of soil properties to obtain final design parameters for a layered evapotranspiration cap. The cap will consist of erosion, infiltration, compacted clay, and capillary break layers. Design drawings were developed in anticipation of contractor procurement activities scheduled for early 2025.
- Dewatering of Drainable Porewater at the FAP Using Extraction Wells - Preliminary assessment of engineering control measures to remove drainable porewater within the waste sluiced to the FAP began in 2022; this work has continued throughout 2023 and 2024 and has included the installation and operation of multiple dewatering test wells in the FAP. The results of testing will assist in refining the FAP closure plan. Once the design of engineering control measures has been suitably progressed, the FAP closure plan will be updated to demonstrate closure performance requirements.
- BAP Closure Detailed Design Engineering – Detailed design of the BAP progressed during the reporting period and includes dewatering the decant water pond and

bottom ash, excavating bottom ash and impacted soils with placement of these materials in the BAM, and breaching the BAP dam. Design drawings were developed in anticipation of contractor procurement activities scheduled for early 2025.

If you have any questions regarding this progress report, please contact Natalie Chrisman Lazarr at 602.316.1324 or via email at natalie.chrismanlazarr@aps.com.

Sincerely,

Johnny Penrod
Plant Manager - Cholla Power Plant

Enclosure: Attachment D(2) – Updated for 2024

ATTACHMENT D(2) – 2024 Updates in BLUE Text

CHOLLA POWER PLANT
CLOSURE SCHEDULE NARRATIVE
40 CFR 257.103(f)(2)(v)(D)

Arizona Public Service Company (APS) has been planning for the closure of the Fly Ash Pond (FAP) and Bottom Ash Pond (BAP) for some time. Figures D-1 (FAP Closure Activities) and D-2 (BAP Closure Activities) present Gantt charts depicting the tasks that must be completed as part of pond closure with the corresponding planned schedule for those tasks. This narrative supplements the Closure Plans presented as Attachment D(1) and presents supporting detail regarding the tasks and schedule identified in each Gantt chart.

1. Closure of the Fly Ash Pond

1.1 Pre-Construction

1.1.1 Minimize Discharge to the FAP

Continue implementing measures that limit discharges to the FAP; this activity has been ongoing since early 2016 and has included sale of fly ash to a local cement manufacturer, shut down of Unit 2 and Unit 4, diversion of water from seepage collection systems to general water (this flow previously discharged into the FAP), diversion of reject from the reverse osmosis water treatment system, and various plant operational modifications. This activity will continue thru plant shut down.

1.1.2 Stockpile Closed Ash Pond 1 CCR Material

Move 767,000 cubic yards (cy) of ash from closed Ash Pond 1 to a stockpile area located within the Fly Ash Pond footprint and store for utilization as fill and stabilization material for closure activities. Work began in September 2020 and was completed in December 2021.

1.1.3 Stockpile Bottom Ash for Bridge Lift

Relocate approximately 1,900~~400~~,000 cy of bottom ash from the Bottom Ash Monofill (BAM) to a stockpile area located within the FAP footprint and store for utilization as bridge lift material for closure activities. Initiated development of a haul route and procurement package in 2022. This work started in second quarter of 2023 and is anticipated to be complete by ~~fourth~~ the end of second quarter of 2024~~4~~5.

1.1.4 Land Acquisition/Access for Closure

No later than 3 years prior to starting closure activities, acquire land (or access to land) adjacent to the FAP for soil borrow areas. Investigation of borrow soil areas on APS property was conducted in 2022 to evaluate ~~justify~~ the need for offsite borrow areas. An ALTA survey supporting land acquisition was initiated in September 2022 and completed in second quarter of 2023. An agreement for access to land for soil borrow testing was completed in October 2023; however, no offsite borrow is currently required.

1.1.5 Run-On Diversions and Coffer (Push Up) Dams

Upstream in the drainage channels, build small retention coffer dams to capture precipitation run on. This work was completed in late 2022.

1.1.6 Enhanced Evaporation of Decant Water Area

Design and construction of a mechanically enhanced evaporation system for increasing the rate of evaporation and accelerating drawdown of free water within the FAP occurred in 2022. Twelve units began operation in August 2022. After tethering issues with evaporators could not be resolved, these units were removed from the FAP in February 2024. An alternative approach to address decant water was developed in 2024 which includes constructing a temporary basin within the footprint of the FAP that the decant water will be pumped into for further processing.

1.2 Engineering

1.2.1 Design Engineering

Start design engineering activities in 2023; these activities include approximately 21 months of design engineering work. The objective of these activities is to produce design drawings and specifications that will be used to procure a contractor for FAP closure activities. Design drawings and specifications will be finalized in early 2025.

1.2.2 Geotechnical and Borrow Investigations/Bridge Lift Testing

Identify usable soils for borrow materials. Build roads onto the FAP beach for access of light-weight geotechnical test equipment. Test fills to measure internal water pressures generated by bridge lift loading. Estimate techniques and materials needed to construct full-scale soil fill cap. This work was completed in 2024.

1.3 Permits

1.3.1 Arizona Department of Water Resources (ADWR) Dam Modifications

~~Anticipate that the permitting process with the ADWR Dam Safety Bureau to modify a jurisdictional high hazard dam will require nine months. Consult early with ADWR to identify if additional time is needed.~~ Initiated discussions with ADWR regarding FAP closure in late 2022. Discussions continued with ADWR in 2024.

1.3.2 US Environmental Protection Agency (EPA) CCR Rule Closure Plan Approval

~~Anticipate up to six months will be required to achieve approval of proposed Closure Plan from US EPA if a permit program is in place before construction begins.~~ It is currently not anticipated that a permit program will be in place before closure of the FAP begins.

1.3.3 Navajo County

Consult with Navajo County to discuss earthwork grading and stormwater requirements. Discussions with Navajo County occurred in 2024.

1.4 Procurement

1.4.1 Preliminary Construction Contracts

Anticipation of six months duration for procurement of the primary construction contract (includes bid event and award of contract).

1.5 Final Boiler Closures

1.5.1 Plant Final Boiler Closures

Cease generation using coal no later than April 2025.

1.6 Construction

1.6.1 Dewatering of Drainable Pore Water

Install and test extraction wells completed in CCR (Phase 1 of the well installation program began in May 2023). Initiate extraction well operations and optimize the extraction of drainable pore water for the interception and removal of pore water that contributes to seepage from the FAP (Phase 1 and 2 wells were equipped and initiated porewater extraction in February 2024; Phase 3 wells are planned to be equipped and begin operation by the end of 2024).

1.6.2 Fill and Stabilize Remaining Water Ponds Areas

Backfill remaining free water at the upstream toe of CCR with fill material to stabilize soils in preparation for capping.

1.6.3 Excavate Upstream Stormwater Basins

Excavate upstream basins to intercept and retain stormwater run-on. Work starts Third Quarter of 2025 and requires 21 months.

1.6.4 Build Stormwater Basins

Install a composite liner system in each upstream stormwater basin.

1.6.5 Build the Bridge Lifts and Construct Evapotranspiration (ET) Cap

Construct the bridge lifts and place the ET cap material over the supporting bridge lift material as area comes available. These construction activities will be split along the north and south halves of the pond, advancing the cap materials from southwest. ET cap placement will follow the bridge lift construction activities as areas become available. Work starts First Quarter 2027.

1.6.6 Vegetate ET Cap

Seed the ET cap as sections are completed. Finish September or October 2028.

2. Closure of the Bottom Ash Pond

2.1 Pre-Construction

2.1.1 Land Acquisition for Closure (e.g. Borrow Areas)

If needed, acquire land adjacent to the BAP for soil borrow areas and construction of diversion channels. An ALTA survey supporting land acquisition was initiated in September 2022 and was completed in second quarter of 2023. No offsite borrow is currently required.

~~*2.1.2 Mine Out West Cell from BAP*~~

~~Excavate bottom ash from the west cell of the BAP and relocate material to the BAM or the FAP for use as bridge lift material.~~

2.1.3~~2~~2 Divert Bottom Ash Discharge to West Cell

Modify BAP operations to discharge into the BAP west cell in preparation for dewatering of the northern area of the BAP. This work was completed in January 2024.

~~*2.1.4 Collect Samples from BAM Expansion Area and BAP Dam Shell*~~

~~Collect samples to evaluate the condition of the BAM expansion area and determine whether the BAP dam shell material is suitable for use as an ET cap.~~

2.1.5~~3~~3 Dewater Northern Area of the BAP

Promote gravity drain down of the northern area of the BAP.

2.2 Engineering

2.2.1 Design Engineering

Start design engineering activities in 2023; these activities will include approximately 18 months of design engineering work. The objective of these activities is to produce design drawings and specifications that will be used to procure a contractor for BAP closure activities. Design drawings and specifications will be finalized in early 2025.

2.2.2 Geotechnical and Borrow Investigations

Identify usable soils for borrow materials. Build roads onto bottom ash beach areas for access of light-weight geotechnical test equipment.

2.3 Permits

2.3.1 ADWR Dam Modifications

Anticipate that the permitting process with the ADWR Dam Safety Bureau to breach a jurisdictional high hazard dam will require fifteen months. Consult early with ADWR to identify if additional time is needed. Discussions with ADWR continued in 2024.

2.3.2 US EPA CCR Rule Closure Plan Approval

~~Anticipate up to six months will be required to achieve approval of proposed Closure Plan from US EPA if a permit program is in place before construction begins.~~ It is currently not anticipated that a permit program will be in place before closure of the BAP begins.

2.3.3 Navajo County

Consult with Navajo County to discuss earthwork grading and changes in stormwater flows due to the planned dam breach. Discussions with Navajo County occurred in 2024.

2.4 Procurement

2.4.1 Preliminary Construction Contracts

Anticipation of six months duration for procurement of the primary construction contract (includes bid event and award of contract).

2.5 Final Boiler Closures

2.5.1 Plant Final Boiler Closures

Cease generation using coal no later than April 2025.

2.6 Construction Activities

2.6.1 Remove Remaining Decant Water from BAP

Siphon or pump extensively sending all free water possible to the plant for use in decommissioning activities or disposal.

2.6.2 Gravity Drain-Down CCR Pile

Allow up to 18 months to gravity drain the delta of CCR material. Activities may include the use of drainage ditches, vacuum wells, and/or pushing out of bridge lift material to help squeeze pore water from the CCR material. Starts with the cessation of discharge of CCR material.

~~*2.6.3 Excavate CCR from the BAM Expansion Area*~~

~~Remove dewatered bottom ash from the northern area of the BAM and place in the BAM. This activity is anticipated to begin before boiler shutdown but could be ongoing when boiler shutdown occurs.~~

~~*2.6.4 Construct a BAM Expansion Landfill and Associated Stormwater Controls*~~

~~Construct a lateral to the existing BAM landfill in the northern area of the BAP footprint after the CCR has been removed from this expansion area. The new lateral will be lined. After CCR has been sufficiently removed from area around the new lateral, construct stormwater control channels.~~

2.6.6~~3~~3 Excavate CCR from BAP and Place in BAM

As the BAP is dewatered, excavate CCR/impacted soils and place the material in the BAM ~~and the new BAM expansion landfill~~. This effort is anticipated to take 27 months to complete.

2.6.5~~4~~4 Build and ~~Vegetate an ET Cap on the BAM Expansion Landfill~~

After CCR excavated from the BAP has been placed in the ~~new lateral~~ BAM, construct ~~an~~ a closure turf cap. ~~ET cap on the new expansion area, likely using soil from breaching the dam. The ET cap will be seeded for soil stabilization as the cap is placed.~~

2.6.~~7~~5 Grade and Stabilize Soils in Footprint of Former BAP

After the CCR has been removed from the footprint of the former BAP, regrade the area, as necessary, to promote proper drainage. Seed the soils thereafter to promote soil stabilization. Finish no later than October 2028.

2.6.~~8~~6 Breach the BAP Dam

When safe to do so, breach the BAP dam to remove this structure from the ADWR jurisdiction.

Figure D-1

Planned Schedule for FAP Closure Activities

Last Updated: 11.21.2024 (2024 Updates in Blue Text)

NOTES:
1. Does not describe any removal of free water to Evaporation Pond or unlined basins
2. For cap construction, a south/north distinction has been made to allow an extra year for dewatering of the more fine-grained northern half.

TASK	START	END	Duration
Pre-Construction			
Minimize discharge to FAP	20Q1	25Q2	63 months
Stockpile 767,000 cy existing fly ash for fill and stabilization material	20Q3	22Q1	18 months
Stockpile ~~400,000~~ 1,900,000 cy of BAM BA for bridge lift material	23Q3	25Q3	24 months
Land acquisition/access for closure (e.g. borrow)	23Q1	23Q4	9 months
Run-on control dams	22Q4	23Q1	3 months
Enhanced evaporation of decant water (i.e., free water) area	22Q2	25Q2	36 months
Engineering			
Design engineering (SG2)	23Q1	25Q2	27 months
Geotechnical and borrow investigations/bridge lift testing	23Q1	24Q1	12 months
Permits			
ADWR dam modifications	22Q4	25Q1	27 months
USEPA CCR closure plan approval (as applicable)			
Navajo County	24Q1	25Q1	12 months
Procurement			
Primary construction contract(s)	25Q1	25Q3	6 months
Final Boiler Closures			
Plant final boiler closures	25Q2	25Q2	0 months
Construction			
Dewatering of drainable pore water using extraction wells	23Q2	28Q4	66 months
Fill and stabilize remaining water pond areas	25Q2	25Q4	6 months
Excavate upstream stormwater basins	25Q3	27Q2	21 months
Build stormwater basins	27Q2	28Q2	12 months
Build south half of ET cap using stockpiled soil	27Q2	27Q4	6 months
Build north half of bridge lift	27Q1	27Q4	9 months
Build north half of ET cap using stockpiled soil	27Q4	28Q3	9 months
Vegetate ET cap	28Q3	28Q4	3 months

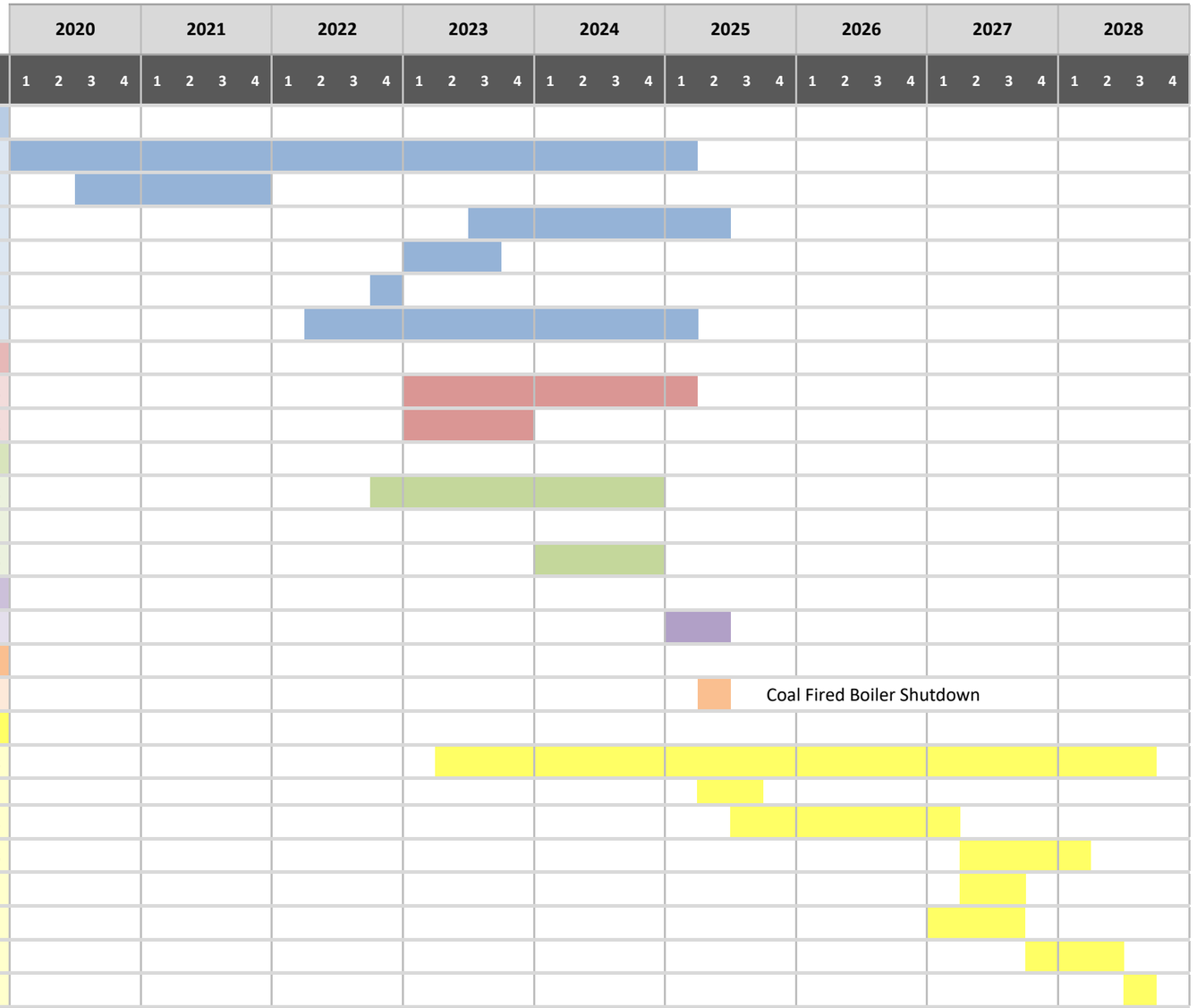

Figure D-2

Planned Schedule for BAP Closure Activities

Last Updated: 11.21.2024 (2024 Updates in Blue Text)

NOTES:
1. Does not describe any removal of free water to Evaporation Pond or unlined basins.

TASK	START	END	Duration
Pre-Construction			
Land acquisition for closure (e.g. borrow areas), if needed	24Q2	25Q1	9 months
~~Mine out West Cell from BAP~~			
Divert bottom ash discharge to West Cell	24Q1	24Q2	3 months
~~Sample the BAM expansion area footprint~~			
~~Sample the BAP dam shell materials for use as a closure cap (ET cover)~~			
Dewater northern area of the BAP	24Q1	25Q1	12 months
Engineering			
Design engineering (SG2)	23Q2	25Q2	24 months
Geotechnical and borrow investigations	23Q2	24Q2	12 months
Permits			
ADWR dam modifications	24Q3	25Q4	15 months
ADEQ/USEPA CCR closure plan approval (as applicable)			
Navajo County	24Q1	25Q1	12 months
Procurement			
Primary construction contract(s)	25Q1	25Q3	6 months
Final Boiler Closures			
Plant final boiler closures	25Q2	25Q2	0 months
Construction			
Remove remaining decant water from BAP	25Q2	26Q4	18 months
Gravity drain-down CCR pile	25Q2	26Q4	18 months
~~Excavate CCR from the BAM expansion area and place in the BAM~~			
~~Construct BAM expansion landfill (lateral to existing BAM)~~			
~~Construct stormwater control channels around BAM expansion landfill~~			
~~Build ET cap on BAM expansion landfill using soil from the dam breach~~			
Excavate CCR from BAP and place in the BAM	25Q2	27Q3	27 months
Build and Cap ~~Vegetate ET cap on~~ BAM ~~expansion landfill~~	29Q2	29Q3	3 months
Grade and stabilize soils in footprint of former BAP	27Q3	28Q3	12 months
Breach the BAP dam	27Q4	28Q3	9 months