CHOLLA POWER PLANT BOTTOM ASH POND – CCR Closure Plan

Amendment 3

AECOM Project No. 60708570

March 25, 2025

Delivering a better world

Prepared for:

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CHOLLA POWER PLANT
CLOSURE PLAN §257.102(b)
BOTTOM ASH POND
Amendment 3 (March 25, 2025)

Closure Plan Contents §257.102(b)(1)

The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan must include, at a minimum, the information specified in paragraphs (b)(1)(i) through (vi) of this section.

Prepared for Arizona Public Service (APS) by AECOM Technical Services, Inc. (AECOM)	
CLOSURE PLAN AMENDMENT HISTORY	
Initial	August 30, 2016
Amendment 1	October 2, 2020 - Updated regulatory framework information and dates.
Amendment 2	November 23, 2020 – Deleted reference to closure of Sedimentation Pond being performed concurrently with closure of Bottom Ash Pond.
Amendment 3	March 25, 2025 – Changed closure method from “Closure in Place” to “Closure by Removal”, updated maximum inventory of CCR volume, and adjusted content to comply with changes to the CCR Rule introduced by the United States Environmental Protection Agency’s (USEPA’s) “Legacy Coal Combustion Residuals Surface Impoundments and CCR Management Units” rulemaking.
SITE INFORMATION	
Site Name / Address	Cholla Power Plant / 4801 I-40 Frontage Road, Joseph City, AZ 86032
Owner Name / Address	Arizona Public Service / 400 North 5th Street, Phoenix, AZ 85004
CCR Unit	Bottom Ash Pond
Location	34° 57′ 18″ N, 110° 17′ 19″ W
Reason for Initiating Closure	Final receipt of CCR
Final Cover Type	Not applicable
Closure Method	Closure by Removal

CLOSURE PLAN DESCRIPTION	
§257.102(b)(1)(i) – A narrative description of how the CCR unit will be closed in accordance with this section.	The Bottom Ash Pond (BAP) is an existing Coal Combustion Residual (CCR) impoundment constructed for the storage of bottom ash generated by the Cholla Power Plant and placed into service in 1978. The Bottom Ash Dam was built to impound the hydraulically deposited bottom ash and incidental volumes of other CCR materials. The BAP is regulated by the United States Environmental Protection Agency per 40 Code of Federal Regulations (CFR) §§257 and 261. The Bottom Ash Dam is regulated by the Arizona Department of Water Resources (ADWR) Dam Safety Program (ADWR Dam #09.27). The BAP will be dewatered to facilitate closure by removal. The bottom ash contents of the pond will be excavated and hauled to the Fly Ash Pond (FAP), the Bottom Ash Monofill (BAM), and/or an ash processing facility for beneficial use. All visible CCR and visibly impacted underlying soil will be removed. The Bottom Ash Dam will be breached in a manner to allow the remaining embankment sections to be classified as non-jurisdictional under the dam safety regulations of the State of Arizona. The base of the former impoundment will be recontoured to drain to and through the breach. Closure operations will consist of: 1) Dewatering, by lowering the free water pond and using pumps, wells, mechanical means, and/or rim ditches to incrementally drain remaining saturated ash; 2) Using, treating, or otherwise disposing impacted water; 3) Excavating and hauling dewatered bottom ash from the BAP to the FAP for use as lightweight bridging fill, to the BAM for disposal, and/or to an ash processing facility for beneficial use;

	4) Removing and hauling visibly impacted underlying soil to the BAM for disposal; 5) Filling, recontouring, and seeding, as needed, the base of the impoundment to drain without erosion; and 6) Breaching the Bottom Ash Dam in a manner that complies with State of Arizona requirements and achieves a stable and non-jurisdictional configuration. Figures 1 through 3 show the current configuration and general grading concept for the closure of the BAP. Portions of the BAP basin were borrow sources for construction of the Bottom Ash Dam, thereby creating low spots or holes now filled with bottom ash that must be excavated, and backfilled or regraded to avoid ponding of stormwater runoff. The recontoured basin will be graded to drain through a breach to be excavated through the Bottom Ash Dam. The drainage will be directed to connect to a natural drainage that flows to Tanner Wash. Detention basins may be constructed within the BAP footprint to limit peak discharges to comply with local regulations. In accordance with §257.102(b)(3), this Amendment 3 revises information in the initial written closure plan regarding the nature of closure construction, dates, and regulatory framework information. This amended written closure plan may be further amended in the future to provide additional details after the final engineering design and contracting for the dewatering, removal, and decontamination construction is completed. The current version of the closure plan reflects the information and planning available at the time of issuance.

§257.102(b)(1)(ii) – If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with paragraph (c) of this section.	Applicable. The BAP will be closed by removing CCR in accordance with a design that incorporates the requirements of §257.102(c) as discussed in response to that section below.
§257.102(b)(1)(iii) – If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.	Not applicable. The BAP will be closed by removing all CCR and designed in accordance with §257.102(c).
§257.102(c) *Closure by removal of CCR.* An owner or operator that elects to close a CCR unit by-removal of CCR must follow the procedures specified in either paragraph (c)(1) or (2) of this section. Closure by removal is complete when CCR has been removed; any areas affected by releases from the CCR unit have been removed or decontaminated; and groundwater monitoring concentrations of the constituents listed in appendix IV to this part do not exceed groundwater protection standards established pursuant to §257.95(h). Removal and decontamination activities include removing all CCR from the unit, CCR mixed with soils, and CCR included in berms, liners, or other unit structures, and removing or decontaminating all areas affected by releases from the CCR unit.	Applicable. CCR removal operations will consist of removing free water, dewatering drainable pore water using pumps, wells, and/or rim ditches, and then removing drained CCR deposits using conventional earthwork equipment. The removed water will be disposed using means and facilities that comply with and satisfy state and federal requirements. The removed CCR will be transported to the FAP to be used as lightweight bridging fill for closure grading, to the BAM for disposal, and/or to an ash processing facility for beneficial use. Removal and decontamination activities will remove all CCR from the unit, all CCR mixed with soils, and all CCR included in berms, liners, or other unit structures. CCR-impacted rockfill on the upstream face of the Bottom Ash Dam will be removed only after the dam has been breached. The first two ‘completion’ standards of §257.102(c) (i.e., “closure is complete when CCR has been removed; [and] any areas affected by releases from the CCR unit have been removed or decontaminated”) will be accomplished by removing visible CCR and visibly impacted

	underlying soil. Bottom ash is readily distinguished from native soils. To demonstrate closure standard effectiveness and appropriate risk mitigation, APS will perform statistically based verification sampling and analysis of the exposed native soil subgrade for CCR constituents following CCR removal. Laboratory analytical results for samples collected from the native soil subgrade will be compared to corresponding State of Arizona non-residential Soil Remediation Levels (nrSRLs) and Groundwater Protection Levels (GPLs) derived pursuant to Arizona guidance from BAP Groundwater Protection Standards (GWPSs). With respect to the third and final 'completion' standard of §257.102(c) (i.e., closure is complete when…groundwater monitoring concentrations of the constituents listed in appendix IV to this part do not exceed groundwater protection standards established pursuant to §257.95(h)), APS will incorporate the requirements of §257.102(c)(2) as discussed in response to that section below.
§257.102(c)(1) *Complete all removal and decontamination activities during the active life of the CCR unit.*	Not applicable.
§257.102(c)(2) *Complete removal and decontamination activities during the active life and post-closure care period of the CCR unit.* The owner or operator may close a CCR unit by completing all removal and decontamination activities, except for groundwater corrective action, during the active life of the CCR unit and by completing groundwater corrective action during the post-closure care period pursuant to the following procedures:	Applicable. APS plans to complete removal and decontamination activities during the active life of the facility and anticipates that completion of groundwater corrective action will extend into the post-closure care period. APS has identified groundwater impacts downgradient of the BAP and completed an Assessment of Corrective Measures (Wood, 2019) for the unit. While APS continues to conduct assessment monitoring of groundwater, APS is currently in the process of selecting a remedy for identified groundwater impacts. Collected groundwater data and progress regarding remedy selection is presented each year in the site Groundwater Monitoring and

	Corrective Action Report which is posted to the APS CCR Rule Compliance Data and Information website. Additional detail regarding scheduling of unit closure activities is included in responses to §257.102(c)(2)(i) through (vi) in responses to those sections below.
§257.102(c)(2)(i) Within the timeframes specified in paragraph (f) of this section, document that CCR has been removed from the unit and any areas affected by releases from the CCR unit have been removed or decontaminated;	Applicable. APS plans to complete and document removal of CCR and any areas affected by releases from the BAP prior to the applicable closure timeframe. However, the timeframes specified in §257.102(f) (i.e., within five years of commencing closure activities) are not applicable. APS prepared and submitted a demonstration pursuant to §257.103(f)(2) identifying that closure of the BAP will be complete no later than October 17, 2028 which is sooner than the timeframes specified in §257.102(f).
§257.102(c)(2)(ii) Within the timeframes specified in paragraph (f) of this section, begin implementation of the remedy selected in accordance with §257.97 such that all components of the remedy are constructed, or otherwise in place, and operating as intended unless the owner or operator documents both that:	Applicable. APS plans to begin implementation of a remedy selected in accordance with §257.97 such that all components of the remedy are constructed, or otherwise in place, and operating as intended no later than October 17, 2028 (in accordance with the Alternative Closure provision of §257.103(f)(2)).
§257.102(c)(2)(ii)(A) All applicable requirements in §§ 257.96 through 257.98 have been met; and	Not anticipated to be applicable.
§257.102(c)(2)(ii)(B) The active life of the unit could not be extended until implementation of the remedy consistent with §257.102(f);	Not anticipated to be applicable.
§257.102(c)(2)(iii) Complete groundwater corrective action as a post-closure care requirement as specified in §257.104(g);	Applicable. Within the post-closure care period, APS plans to complete groundwater corrective action and to demonstrate that any areas affected by releases from the BAP do not exceed the groundwater protection standards established

	pursuant to §257.95(h) for appendix IV constituents.
§257.102(c)(2)(iv) Amend the written closure plan required by paragraph (b) of this section and the written post-closure care plan required by §257.104(d);	Applicable. APS hereby amends the written closure plan required by paragraph (b) of this section and will continue to amend the written closure plan as warranted. Separately, APS will amend the written post-closure care plan required by §257.104(d).
§257.102(c)(2)(v) Within the timeframes specified in paragraph (f) of this section, obtain the completion of closure certification or approval required by paragraph (f)(3) of this section; and	Applicable. APS plans to obtain the completion of closure certification from a qualified professional engineer documenting that CCR has been removed from the unit and any areas affected by releases from the BAP have been removed or decontaminated no later than October 17, 2028 (in accordance with the Alternative Closure provision of §257.103(f)(2)).
§257.102(c)(2)(vi) Within the timeframes specified in paragraph (f) of this section, record the notation on the deed to the property required by paragraph (i) of this section.	Applicable. APS plans to record a notation on the deed to the property required by §257.102(i) no later than October 17, 2028 (in accordance with the Alternative Closure provision of §257.103(f)(2)). The deed notation will note that the land has been used as a CCR unit and its use is restricted under the post-closure care requirements identified in §257.104(d). Within 30 days of recording the notification, APS will prepare a notification for the facility's operating record that the deed notation has been recorded.
INVENTORY AND AREA ESTIMATES	
§257.102 (b)(1)(iv) – An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.	3,300,000 cubic yards.
§257.102 (b)(1)(v) – An estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life.	Not applicable.

CLOSURE SCHEDULE	
§257.102 (b)(1)(vi) – A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in paragraph §257.102(f)(1) of this section, the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under paragraph §257.102(f)(2) of this section.	As identified in APS's *Demonstration Supporting a Site-Specific Deadline to Initiate Closure for the Fly Ash Pond and the Bottom Ash Pond* (APS, 2020), APS plans for final receipt of CCR and initiation of closure at the BAP no later than June 30, 2025. APS plans to remove all CCR from the unit and any areas affected by releases from the BAP by October 17, 2028. Completion of groundwater corrective action is anticipated to extend into the post-closure care period. The following milestones are estimates based on current understandings relative to the date of the final receipt of CCR. Activities associated with some milestones may overlap. Amendments to milestones and timeframes may be provided as more or different information becomes available.
Initial Written Closure Plan Completed	August 2016
Closure Plan Amendment 1	October 2020
Closure Plan Amendment 2	November 2020
Closure Plan Amendment 3	March 2025
Permits and Approvals from Agencies	April 2025 (estimated)
Date of Final Receipt of CCR	June 2025
Closure Activities Initiated	June 2025
Complete Dewatering and CCR Removal	Prior to October 17, 2028
Complete Groundwater Corrective Action	During Post-Closure Care Period

REFERENCES
APS, 2020. Demonstration Supporting a Site-Specific Deadline to Initiate Closure for the Fly Ash Pond and the Bottom Ash Pond. Cholla Power Plant – Navajo County, Arizona. November 30, 2020.
Wood, 2019. Assessment of Corrective Measures for the Fly Ash Pond and the Bottom Ash Pond. Arizona Public Service Cholla Power Plant – Navajo County, Arizona. June 4, 2019.

Attachments:

- Certification Statement 40 CFR § 257.102(b)(4) – Amended Written Closure Plan for a CCR Surface Impoundment, dated March 25, 2025.

Figures:

- Figure 1: Site Plan
- Figure 2: Site Drainage Plan
- Figure 3: Longitudinal Section

Attachments

Certification Statement 40 CFR § 257.102(b)(4) – Amended Written Closure Plan for a CCR Surface Impoundment

CCR Unit: Arizona Public Service; Cholla Power Plant; Bottom Ash Pond

I, Alexander W. Gourlay, being a Registered Professional Engineer in good standing in the State of Arizona, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the information contained in the amended written closure plan dated March 25, 2025, meets the requirements of 40 CFR § 257.102.

Alexander W. Gourlay, P.E.
Printed Name

March 25, 2025
Date

Figures

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CHOLLA POWER PLAN BOTTOM ASH POND CLOSURE
SCALE AS NOTED
APS
Project No.:60708570
Date: 3-5-2025

FIGURE 1: SITE PLAN

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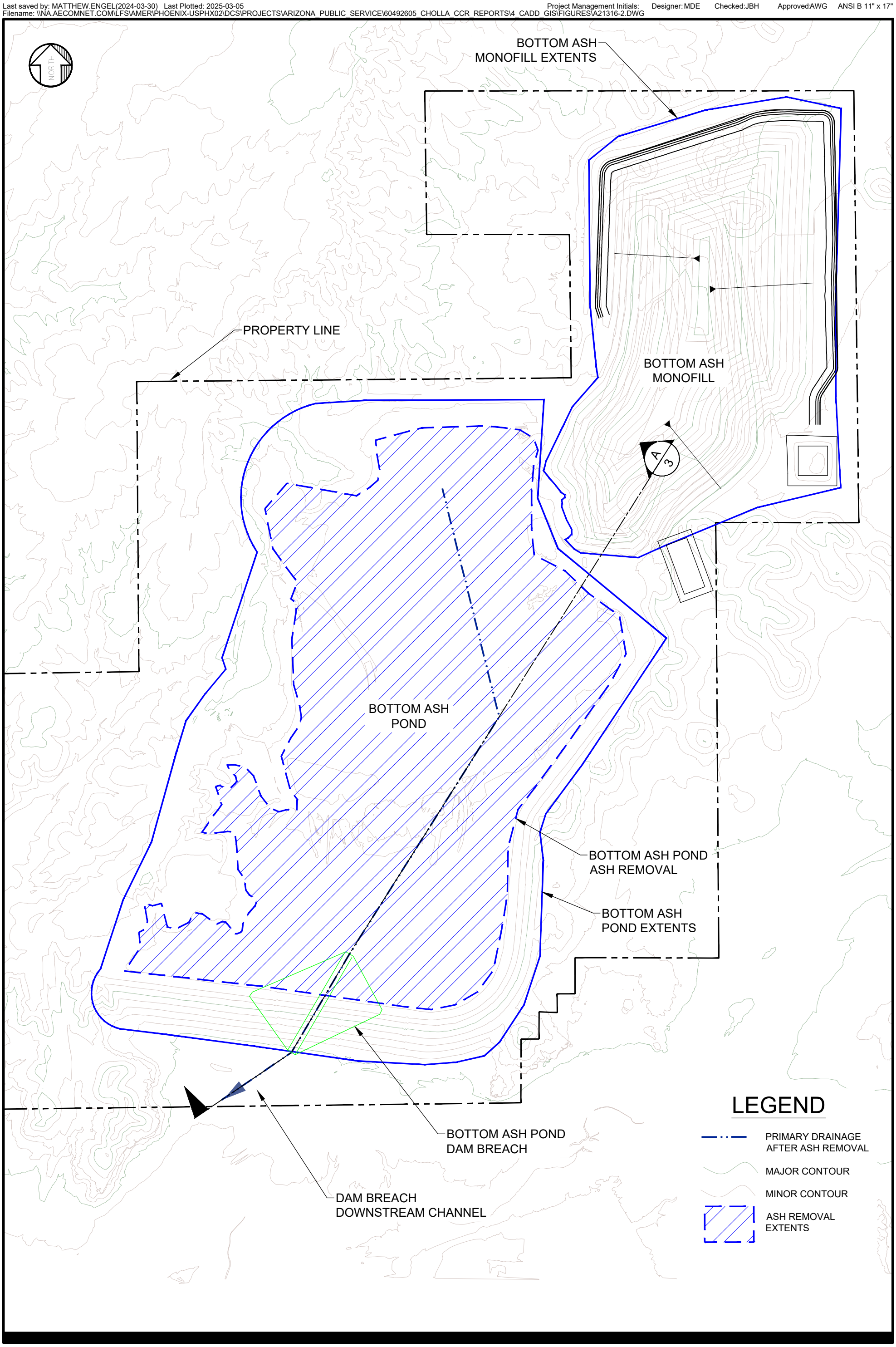

CHOLLA POWER PLAN BOTTOM ASH POND CLOSURE
SCALE AS NOTED
APS
Project No.:60708570
Date: 3-5-2025

FIGURE 2: SITE DRAINAGE PLAN

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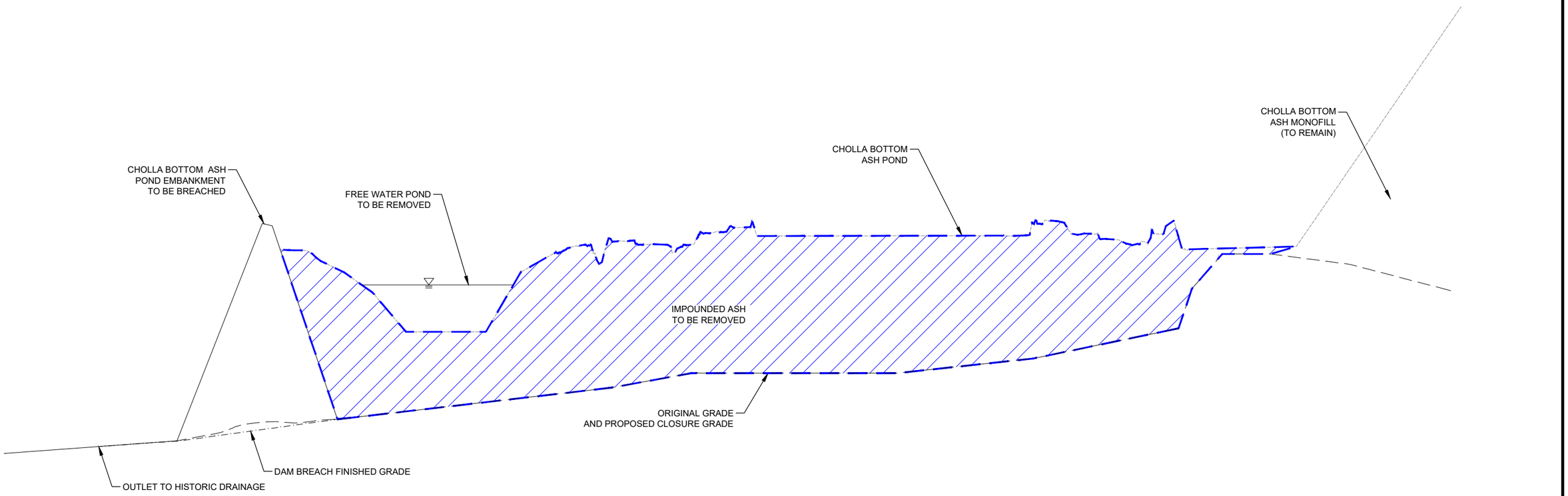

CHOLLA POWER PLANT BOTTOM ASH POND CLOSURE
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FIGURE 3: LONGITUDINAL SECTION

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