



Wood Environment & Infrastructure Solutions, Inc.  
4600 E. Washington St, Suite 600  
Phoenix, Arizona 85034  
USA

T: 602-733-6000

[www.woodplc.com](http://www.woodplc.com)

July 15, 2020  
Wood Reference No: 1420182040

Arizona Public Service Company  
400 N. 5th Street  
Phoenix, Arizona 85004

**Re: SEMIANNUAL REPORT DOCUMENTING PROGRESS IN REMEDY SELECTION  
FOR THE FLY ASH POND AND BOTTOM ASH POND  
Cholla Power Plant – Navajo County, Arizona**

In accordance with 40 Code of Federal Regulations (CFR) Section (§) 257.97(a) of the Coal Combustion Residuals (CCR) Rule, this Semiannual Remedy Selection Progress Report (Semiannual Report) has been prepared on behalf of Arizona Public Service Company (APS) to document progress in selection of remedies for CCR units which have been identified as potentially impacting groundwater at the APS Cholla Power Plant, located in Navajo County, Arizona (the Site). Applicable site CCR units include the Fly Ash Pond (FAP) and the Bottom Ash Pond (BAP). Previous updates documenting remedy selection progress are provided in a Semiannual Report dated July 15, 2019 and in the *Annual Groundwater Monitoring and Corrective Action Report for 2019*, dated January 31, 2020. This Semiannual Report serves as the third update on remedy selection progress at the site and documents activities completed to date in 2020.

## 1. Summary of Activities Completed in 2020

Activities completed by APS in the first half of 2020 in support of remedy selection for the FAP and the BAP include the following:

- *Evaluation of Seepage Collection Systems at the FAP and BAP.* As indicated in the 2019 GMCAR, Wood Environment and Infrastructure Solutions, Inc. (Wood) has performed field evaluations of the seepage collection systems at the FAP and BAP in support of remedy selection and design at each CCR unit. The evaluation at the FAP has indicated poor lateral influence of the two seepage collection extraction wells, which may be associated with clogging of the extraction well screens. Well rehabilitation activities are planned for the extraction wells and are likely to occur in the second half of 2020. Additionally, the evaluation has prompted a series of cone penetrometer tests (CPTs) at the FAP, which is planned for July 2020 and discussed in Section 2. The assessment of the BAP seepage collection system is partially complete and will be finalized in the second half of 2020. The assessment results for the FAP and BAP seepage collection systems will be summarized in a Technical Memorandum (Tech Memo) for inclusion as an appendix to the Annual Groundwater Monitoring and Corrective Action Report for 2020 (2020 GMCAR).
- *Aquifer Testing at the FAP.* In March 2020, Wood performed several aquifer tests at wells downgradient of the FAP to evaluate aquifer properties in support of remedy selection. Results of the aquifer tests indicate limited connectivity between test wells and observation wells and relatively low sustained groundwater pumping rates at the test wells (e.g., between approximately 0.1 and 2.5 gallons per minute). The aquifer



test results will be incorporated into a Tech Memo with the results of the FAP seepage system collection evaluation and FAP CPT study for inclusion as an appendix to the 2020 GMCAR.

- *Stratified Water Sampling and Leaching Evaluation at the BAP.* As indicated in the 2019 GMCAR, a field investigation was conducted in 2019 to evaluate the cause of elevated cobalt concentrations in groundwater downgradient of the BAP. Results of the investigation are summarized in a Tech Memo which will be included as an appendix to the 2020 GMCAR. The investigation concluded that the elevated cobalt concentrations in groundwater are not directly attributable to the presence of cobalt in BAP water and may be caused by the mobilization of cobalt from the solid matrixes underlying the BAP (e.g., alluvium, bottom ash, and/or Moenkopi Moqui) under reducing conditions. Groundwater sampling at the BAP to evaluate redox conditions was performed by APS in the first half of 2020 and is discussed below.
- *Groundwater Redox Sampling at the FAP and BAP.* Site investigations conducted to date suggest groundwater redox conditions may be responsible for the mobilization of cobalt at the BAP (discussed above) and arsenic at the FAP (discussed in the 2019 GMCAR). Accordingly, groundwater samples collected during the first semiannual CCR monitoring event of 2020 at FAP and BAP downgradient wells have been analyzed for several redox-sensitive constituents to assess groundwater redox conditions at each CCR unit. The results of the redox analysis will be evaluated in the second half of 2020 to inform the selection and design of remedies for the FAP and BAP and will be summarized in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *BAP Dewatering Projection.* As discussed in the 2019 GMCAR, a dewatering projection was developed in 2019 to estimate the duration of time until the BAP no longer has ponded water and seepage from the BAP declines to a steady state level. A Tech Memo documenting the results of the dewatering projection is being finalized and will be included as an appendix to the 2020 GMCAR.

## 2. Future Planned Activities

APS plans to perform the following activities in support of remedy selection during the second half of 2020:

- *A CPT Investigation at the FAP.* Investigations conducted at the FAP to date suggest the presence of preferential pathways for groundwater migration in the uppermost aquifer. A CPT study at the FAP is planned for July 2020 to delineate preferential flow paths or perched zones of saturation downgradient of the FAP. The results of the CPT investigation will be assessed in the second half of 2020 to inform remedy selection and design for the FAP and will be documented in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *Installation of Monitoring Wells at BAP.* To evaluate localized cobalt migration pathways in the uppermost aquifer immediately downgradient of the BAP, monitoring wells are planned for installation near the southeastern corner of the BAP. Additionally, the installation of a monitoring well screened in the Moqui is planned as a potential background well for the BAP to evaluate background cobalt concentrations for groundwater in the Moqui. The well installation activities are anticipated to occur in the second half of 2020 and will be summarized in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *Public Meeting.* Pursuant to 40 CFR §257.96(e), APS will conduct a public meeting with interested and affected parties at least 30 days prior to selection of remedies for the FAP and the BAP. Once pre-design studies have provided enough information to progress remedy selection activities, APS will explore alternative methods to conduct the public meeting if gatherings are limited as a result of the COVID-19 pandemic.

- *Remedy Selection Reports for the FAP and the BAP.* After a public meeting to discuss the results of the corrective measures assessment occurs, APS will prepare a remedy selection report for each CCR unit which will document how the selected remedy will meet the requirements of 40 CFR §257.97(b).

Respectfully submitted,

**Wood Environment & Infrastructure Solutions, Inc.**



Dane Andersen, GIT  
Hydrogeologist  
Dane.andersen@woodplc.com

Reviewed by:



Maren Henley, PE  
Associate Engineer  
maren.henley@woodplc.com