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

**Re: SEMIANNUAL REPORT DOCUMENTING PROGRESS IN REMEDY SELECTION
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). Semiannual progress reporting supporting remedy selection began on July 15, 2019. The most recent update was provided in the *Annual Groundwater Monitoring and Corrective Action Report for 2020*, dated January 31, 2021. This Semiannual Report serves as the fifth update on remedy selection progress at the site and documents activities completed to date in 2021.

1. Summary of Activities Completed in 2021

Activities completed by APS in the first half of 2021 in support of remedy selection for the FAP and the BAP include the following:

- *Aquifer Testing at the FAP.* In January 2021, Wood Environment and Infrastructure Inc. (Wood) performed several aquifer tests at four extraction wells downgradient of the FAP installed in December 2020. The aquifer tests were performed to evaluate the effectiveness of an extraction well network as a potential corrective measure. Results of the aquifer tests indicate hydraulic connectivity between three of the four extraction wells and other nearby alluvial monitoring wells. Further details of the aquifer test results and recommendations for incorporation into existing FAP seepage systems are to be outlined in a Well Completion Report. This report will be included as an appendix to the Annual Groundwater Monitoring and Corrective Action Report for 2021 (2021 GMCAR).
- *Groundwater Redox Sampling at the FAP and BAP.* Site investigations conducted to date suggest elevated concentrations of cobalt at the BAP and arsenic at the FAP may be associated with variable redox conditions in groundwater mobilizing the metals from native soil (both discussed in 2020 GMCAR). Ongoing semi-annual CCR monitoring events to date have included sampling for several redox-sensitive constituents at FAP and BAP downgradient wells. Results of the redox analyses will be evaluated in the second half of 2021 to help inform the remedy selection for the FAP and BAP.



- *Installation of Monitoring Wells and Potential Extraction Wells at the BAP.* To evaluate the nature and extent of spatially heterogeneous cobalt concentrations at the BAP, Wood installed four monitoring wells downgradient of the BAP in April and May of 2021. During this time Wood also installed five 6-inch diameter wells at the south toe of the dam and adjacent to the eastern seepage intercept system of the BAP. These larger diameter wells may serve as extraction wells to enhance the BAP seepage collection systems or as part of the selected remedy, if supported by aquifer testing data (discussed in Section 2). Well installation and associated activities will be summarized in a Well Completion Report for inclusion as an appendix to the 2021 GMCAR.
- *Abandonment and Replacement of Select Site Wells.* Based on recent investigations and inspections indicating issues such as potential for cross-contamination between hydrogeologic units, nine piezometers/wells across the Site were identified for replacement. In May 2021 Wood abandoned and replaced monitoring and piezometer wells W-123, W-126, F-111, F-91, and F-91 around the FAP, and CR-1 near the SEDI. FAP extraction wells Geronimo A and Geronimo B were abandoned and replaced with a single well. The justifications for the abandonments, in addition to abandonment and replacement activities will be summarized in a Technical Memorandum (Tech Memo) to be included as an appendix to the 2021 GMCAR.

2. Future Planned Activities

APS plans to perform the following activities in support of remedy selection during the second half of 2021 (and in upcoming years, as noted):

- *Aquifer Testing at the BAP.* To support assessment of the 6-inch diameter wells installed May of 2021 to serve as extraction wells, aquifer testing and data evaluation at the BAP are currently underway. Aquifer test programs were developed for one monitoring well and four of the potential extraction wells installed to date. Further aquifer testing will be conducted at monitoring wells scheduled for installation in the second half of 2021 (see below). Results and data of all aquifer testing will be assessed and summarized as part of a Well Completion Report to be included as an appendix to the 2021 GMCAR.
- *Installation of Monitoring and Background Wells at the BAP.* To further evaluate the localized migration pathways downgradient of the BAP, four more 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 the groundwater in the Moqui. Installation activities are anticipated to take place in the second half of 2021 and will be summarized in a Well Completion Report to be included as an appendix to the 2021 GMCAR.
- *BAP Bench Scale Geochemical Testing.* As part of the installation of new wells at the BAP in April-May 2021, sediment samples were taken at select locations and depth intervals during drilling. These solid matrix samples, along with additional sediment and groundwater samples to be collected during planned well installation activities, will be assessed utilizing a series of laboratory tests to evaluate the effectiveness of potential treatment technologies to treat elevated cobalt concentrations in the BAP area. The results of the laboratory testing will also guide any interim in-situ testing at the BAP. These results and any recommendations based thereupon will be summarized in a Tech Memo for inclusion the 2022 GMCAR (the results of testing will likely not be documented prior to preparation of the 2021 GMCAR).
- *Lithium Intrawell Analysis for the BAP.* In June 2019 an Alternative Source Demonstration (ASD) was prepared for lithium groundwater protection standard (GWPS) exceedances at wells downgradient of the BAP. Several lines of evidence in the ASD declared natural variation in the aquifer to be the cause of the

exceedances. As such, an intrawell statistical comparison was recommended as an alternative to the currently utilized interwell comparison for ongoing evaluation and is planned as an assessment supporting the ASD for the second half of 2021. The intrawell analyses will be summarized in a Tech Memo for inclusion as an appendix to the 2021 GMCAR.

- *Integration of New Extraction Wells into Seepage Collection System Operations at the FAP.* As part of interim response measures to address groundwater impacts at the FAP, the extraction wells installed in December 2020 will be incorporated into the existing Geronimo Seepage Collection System. Aquifer testing conducted January of 2021 support sustainable pumping rates between 1.5 and 5 gallons per minute. Completed activities associated with incorporating the extraction wells into the seepage collection system will be documented in the 2021 GMCAR.
- *Public Meeting.* Once pre-design studies have provided enough information to progress remedy selection activities (likely in 2022), 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 pursuant to 40 CFR §257.96(e).
- *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).

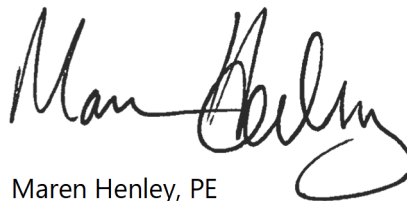
Respectfully submitted,

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