

# The Nature Conservancy

Please see .pdf file named TNC AZPDES Comment Letter\_1-11-24\_encl.

**JANUARY 11, 2024**

**VIA ELECTRONIC DELIVERY—ADEQ ONLINE COMMENT FORM**

Rachel Heinz  
Arizona Department of Environmental Quality  
Water Quality Division  
1110 W. Washington St.  
Phoenix, AZ 95007

**Re: Comments on Proposed Arizona Pollutant Discharge Elimination System (AZPDES) Permit Modification—AZPDES Permit No. AZ0026387 to South32 Hermosa Inc.; Public Notice No. 23-29**

Dear Ms. Heinz:

This firm serves as outside counsel to The Nature Conservancy (“TNC”) and submits these comments on TNC’s behalf. The Nature Conservancy is a non-profit, non-governmental charitable organization whose mission is “conserving the lands and waters on which all life depends.” In Arizona alone, TNC has protected more than 1.5 million acres of lands important to people and wildlife and has harnessed science and partnerships to keep Arizona rivers flowing and its forests and grasslands healthy.

Over 50 years ago, in 1966, TNC purchased its first property in Arizona, the Patagonia-Sonoita Creek Preserve (“the Preserve”), which protects three miles of perennial Sonoita Creek in and just downstream from the Town of Patagonia. The Preserve consists of two land parcels, one at the confluence of Harshaw Creek and Sonoita Creek and the other approximately one-half mile downstream of the confluence. See the enclosed map.

In the Preserve, TNC protects the rare cottonwood-willow riparian habitat that supports an assemblage of native fishes, which are some of the last remaining of such species in the Santa Cruz River Watershed. Sonoita Creek at and downstream of the Preserve is one of the very few streams in Arizona that supports four or more native fish species. In addition, the Preserve provides habitat for federally listed threatened and endangered species, including the Huachuca Water Umbel, Mexican Garter Snake, Yellow-billed Cuckoo, and Gila Topminnow. People come from all over the world to visit the Preserve to see the hundreds of species of birds that migrate, nest, and live in this truly special desert riparian habitat.

In addition, beyond the bounds of its property at the Preserve, TNC works collaboratively with other organizations, agencies, and private landowners to achieve effective conservation

outcomes and ecosystem resilience across the greater Sonoita Creek watershed. TNC convened a group of local stakeholders to develop and implement the collaborative *Sonoita Creek Watershed Management Plan*. TNC also has engaged directly with people at South32 Hermosa Inc. and its affiliates to monitor water quality and quantity at the Preserve and begin a dialogue assessing other potential impacts of their operations in the watershed.

Given TNC's overall mission, its conservation vision for the Sonoita Creek watershed, and its property interests in the Preserve, TNC maintains an interest in the South32 Hermosa Inc. AZPDES Permit No. AZ0026387, both the currently proposed renewal and its ongoing administration. When the referenced permit was modified in July 2021, TNC participated in the public comment phase due to TNC's concerns about the proposed new outfall 002 to Harshaw Creek for the discharge of approximately 6.5 million gallons per day (MGD) of groundwater from the mine's water treatment plant. Among other things, at that time, TNC identified the need for water quality-based effluent limitations rather than the much less stringent technology-based effluent limitations originally proposed by ADEQ. Additionally, TNC expressed its concern that the continuous discharge of 6.5 MGD to Harshaw Creek may impact water quality on TNC lands at the downstream confluence with Sonoita Creek and the portion of the Preserve with perennial flows.

In the context of the current proposed renewal of the AZPDES permit, TNC continues to be concerned about the potential impact of the permitted discharge to Harshaw Creek on water quality and chemistry in Harshaw Creek and Sonoita Creek and its potential to degrade water quality in the perennial segment of Sonoita Creek in TNC's Preserve. The ADEQ draft fact sheet states that the effluent limitations in the draft AZPDES permit are derived from the designated uses that apply to both "Lower Harshaw" and "Upper Sonoita Creek" "because there is no difference in downstream designated uses" and "the designated uses of Lower Harshaw Creek are protective of downstream waters." See page 9.

These statements are problematic. First, these stream segment designations are not defined in the draft fact sheet nor, more importantly, are they identified in Arizona surface water quality standards. See A.A.C. R18-11-123 Appendix B. Also, while the designated uses of the portion of Sonoita Creek from the Town of Patagonia WWTP outfall for approximately 1600 feet are the same as Harshaw Creek, the designated uses in the next segment of Sonoita Creek and through the perennial section of TNC's Preserve are different. In the Preserve, instead of ephemeral uses for aquatic life, warm water aquatic use applies; instead of partial body contact, full body contact use applies; and the additional uses of fish consumption and agricultural irrigation also apply. Accordingly, it is not correct for the fact sheet to state or ADEQ to presume that standards protective of Sonoita Creek's designated uses at the confluence with Harshaw Creek ensure that the fish and other aquatic life in the perennial waters of the Preserve are fully and adequately protected.

Further, the authorized future discharge of 6.5 MGD will seemingly have a major impact on the flow regime of Harshaw Creek and thus a potential if not likely impact on the flow regime in

Sonoita Creek and in the Preserve. In the context of the 2021 modification of AZPDES Permit No. AZ0026387, apparently ADEQ relied on the August 17, 2020, Ecological Resource Consultants, Inc. Technical Memorandum submitted by South32 (at the time, Arizona Minerals Inc.) to conclude that the permitted discharge would not reach or otherwise impact Sonoita Creek. Based on assumptions modeled by the South32 consultant, the Technical Memorandum suggested that the authorized discharge of 6.5 MGD would infiltrate upstream of the Harshaw Creek confluence with Sonoita Creek. The reference in ADEQ's draft fact sheet to Sonoita Creek's designated uses suggests that ADEQ assumptions about the flow regime or expected downstream impacts from the authorized discharge may have changed since the 2021 permit modification.

*Given ADEQ's reference to the relevance of Sonoita Creek's designated uses in the current draft fact sheet, have ADEQ's assumptions changed about the extent of the surface flow of the permitted discharge? If so, what is the change and its basis? Also, if the discharge flows reach or otherwise impact the perennial waters of Sonoita Creek, how will ADEQ and South32 ensure the discharge does not degrade water quality or otherwise harm the aquatic ecosystem in the Preserve's perennial waters?*

Despite these noted questions and concerns, TNC appreciates other aspects of ADEQ's approach to the permit renewal, including the addition of mass-based effluent limitations, increased monitoring frequency and discharge characterization testing, WQBELs for discharges from outfall 001, and the afore-mentioned consideration of designated uses for Sonoita Creek (if not entirely correctly) rather than solely those of Harshaw Creek. Nevertheless, preserving or improving the existing water quality in Sonoita Creek's perennial waters in the Preserve is a priority for TNC. TNC requests ADEQ's consideration of that in the final version of the permit renewal and its ongoing permit administration and enforcement efforts.

Truly,



Joan Card  
Managing Partner

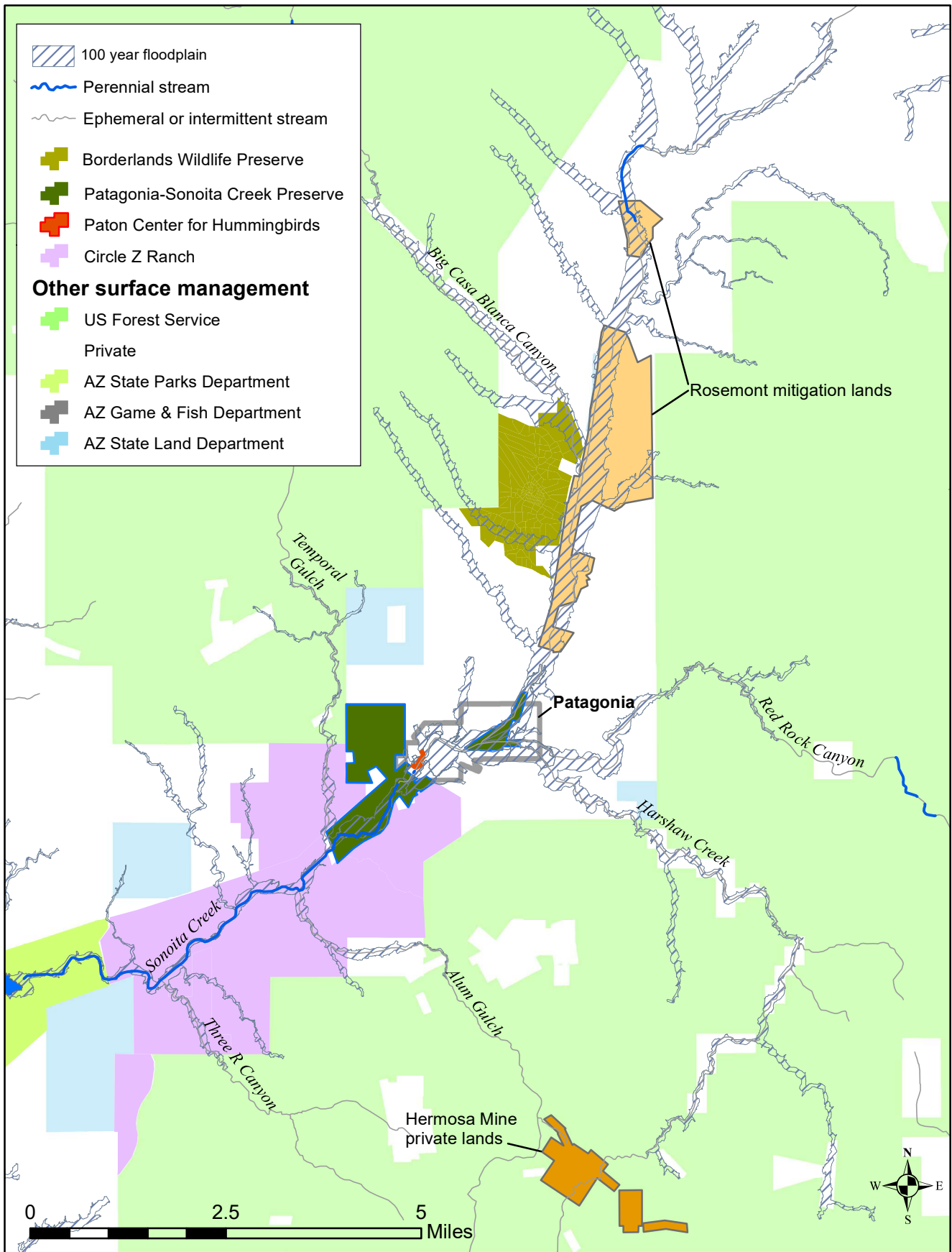


Figure 11. Floodplains and current mine-related projects in the Sonoita Creek watershed.