

Charlene Saltz

Dear Arizona Department of Environmental Quality,

As a soon to be resident in Patagonia and currently living within 25 miles from the town, I am very concerned about the impact of the mine on water quality and habitat loss. I moved to the area because of the biological diversity and unique ecosystem. It needs to be protected as it is a biological hotspot for endangered species, threatened species and those close to being on the list.

As an EV driver and supporter, I understand the need for minerals to support EV growth. However, there is plenty of other options for manganese internationally and quite frankly, I don't think there is much demand for it. Has it really been proven to be a needed mineral and at what expense? Have other sources been explored. If this is the best option, then the mine needs to be held accountable to be responsible stewards. The discharge they are proposing is the opposite of being a responsible steward.

Therefore, I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks.

First, dropping the groundwater level in an area like this would be highly destructive. The change in hydraulic gradients around the mine would change the "paths of least resistance," where current springs emerge, permanently drying natural springs. It would also lead to significant loss of upland trees. The death of surrounding trees will decrease the landscape's overall resilience and could lead to the present ecosystem's radical transformation and potential collapse.

Expected harms from the water discharges are also deeply concerning. Up to 6 million gallons of water per day could be forced down Harshaw Creek and up to 172,000 gallons per day down Alum Creek. These volumes are significantly higher than current, intermittent, base flows. This will lead to severe erosion upstream, excessive sediment loads downstream, and the burial of several important water sources such as the seven rheocrene seeps and springs known in Harshaw Creek and the nine rheocrene seeps and springs known in Alum Creek. These harms are particularly concerning because springs are such unique ecosystems with high biodiversity. Their destruction will affect endemic species to an unknown degree because the sites haven't yet been adequately surveyed. Some estimates suggest that refugia like these support more than 20% of endangered and threatened species, despite making up a much smaller proportion of the land surface area (Springs Stewardship Institute).

What's more, such intense flooding will lead to reduced tree recruitment for riparian species like cottonwoods and sycamores — over time, altering the landscape. Because the water discharges would be ongoing, the surrounding landscape will be more water-logged. This means a reduced capacity to absorb water during rains, and potential downstream flash flooding. And finally, the

quality of the water being discharged in such high quantities is a concern. Its source will be deep underground in the Hermosa project, and although the mine has promised to treat the water before release, its quality could change unexpectedly over time.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

Sincerely,