Susan Lawrence

Dear Arizona Department of Environmental Quality, 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 aquifer pumping, and 2) chemical and physical disturbances due to increased flow rates in Harshaw and Alum creeks. First, reducing the water table level in these mountains will deny numerous seeps, springs, and livestock tanks of their water supply. The change in hydraulic gradients around the mine will very likely change the "paths of least resistance," where current springs emerge, permanently drying natural water sources. Such sources of water that provide rare and essential habitat for various, imperiled species, including the Mexica Jaguar, are irreplaceable and already threatened by changing climate. Furthermore, tens of thousands of acres of livestock rangeland will very likely be severely impacted as groundwater fed livestock tanks are dried. 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.