UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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APR 14 2015

OFFICE OF THE
REGIONAL ADMINISTRATOR

Colonel Kim Colloton
District Engineer, Los Angeles District
U.S. Army Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

Subject: "Other Water Quality Aspects" of permit issuance for the Rosemont Mine in light of state actions under §401 of the Clean Water Act

Dear Colonel Colloton:

On February 3, 2015, the Arizona Department of Environmental Quality (ADEQ) issued the Clean Water Act (CWA) §401 Water Quality Certification (certification) for the proposed Rosemont Copper Project (Rosemont mine) in Pima County, Arizona. After careful review and consultation with the state, EPA has determined that the impacts of the project include substantial water quality aspects which may be outside the scope of the state's §401 certification review. Thus, EPA believes the certification alone is unlikely to provide sufficient measures to safeguard the water quality of the Cienega Creek watershed, including stream reaches meeting or exceeding existing water quality standards under CWA §303 (these CWA "Tier 3" waters in Arizona are designated "Outstanding Arizona Waters" or OAW).[1] As prescribed under Corps regulations at 33 CFR 320.4(d), I am requesting your consideration of these "other water quality aspects" when making your §404 CWA permit decision.[2]

The Rosemont Copper Project Final Environmental Impact Statement (FEIS) and other documentation concluded the Rosemont mine, if constructed, would adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. The state CWA §401 certification lacks sufficient, specific preventative actions to avoid these adverse impacts to water quality, creating a substantial risk to designated beneficial use standards set by the state for Davidson Canyon and Cienega Creek. In general, the certification relies upon limited, voluntary (i.e., non-enforceable) post-discharge monitoring that may detect water quality degradation after it occurs, and includes insubstantial corrective actions to be developed at a later time. Many of EPA's concerns identified in comments on the state's February 21, 2014 draft certification (letter attached) remain unaddressed by the final certification. Among the most critical water quality aspects that remain outstanding are:

1. **Water quality impact avoidance:** Without reasonable assurance of impact avoidance, the available information suggests Tier 3 antidegradation standards are very likely to be violated.

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[1] Federal antidegradation policy prohibits any degradation of Tier 3 waters, regardless of economic or social development needs (40 CFR 131.2(a)). Arizona's anti degradation rules reinforce this prohibition (ACC R18-11-107).
[2] Corps Regulatory Guidance Letter 90-04 and the Memorandum for *Major Subordinate Commands and District Commands* dated October 29, 2009

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2. **Water quality impact minimization:** A specific and complete monitoring program is necessary at the outset ensure rapid detection of impacts should a robust preventative program fail, and provide for the ability to deploy corrective measures;
3. **Water quality impact mitigation:** Specification of, and enforceable commitment to, available and sufficient corrective measures are needed to offset mine-related reduction of assimilative capacity, changes in downstream sediment yield, and other potential diminutions of water quality that may be detected. Presently, the corrective measures proposed in a "Surface Water Mitigation Plan" lack specificity regarding their ability to arrest and reverse water quality problems once water quality degradation of OAWs or other waters has been detected.[3]

We believe these water quality aspects are directly relevant to several of the Corps' findings necessary for a permit decision, under both the 404(b)(1) Guidelines and Public Interest Review. The state's inclusion of general and specific conditions in the certification are highly unlikely to avoid potential water quality degradation, detect anticipated or unanticipated degradation, or mitigate for those impacts. The project's projected groundwater drawdown and flow and sediment reductions in Davidson Canyon and Cienega Creek have yet to be adequately addressed. These outcomes would represent a failure to maintain and protect existing water quality in those OAWs in violation of the CWA antidegradation policy. The certified discharges of fill material would thus contribute to violation of applicable water quality standards, in conflict with the Guidelines at 40 CFR 230.10(b).

The Corps' permit decision also includes an evaluation of the impacts of the proposed project on water supply and conservation (33 CFR 320.4). Within the Tucson Active Management Area (AMA), a population of over 811,000 obtains 69% of its municipal water supplies from groundwater. Agriculture relies on subsurface supply to provide 70% if its water.[4] The Upper Santa Cruz subbasin, where Rosemont is sited, provides 20% of the groundwater recharge in the Tucson AMA.[5] The mine's water needs would represent a new demand that increases pumping by 6-7% during an overall drying trend.[6] Drought, climate change, and the significant uncertainty regarding the potential to successfully recharge subsurface supplies, only heighten EPA's concerns over Rosemont mine's projected water use in an aquifer already subject to groundwater overdraft.[7]

According to the FEIS, groundwater pumping for the mining operation and drawdown from the open pit will adversely impact public and private water supplies.[8] As a result of pumping groundwater for the mine, an estimated 500-550 private and municipal wells would be impacted by drawdown in groundwater levels over ten feet.[9] Groundwater drawdown from the mine's pit within the Davidson Canyon/Cienega Basin, would impact an additional estimated 360-370 well owners with water level

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[3]The SWMP developed under the certification does not meet its stated objective of describing mitigation commitments to offset predicted reductions in surface water flows and sediment yield. For example, it proposes a conceptual mitigation water supply of insufficient quantity to offset flow reductions predicted by the FEIS, and provides no assurance of that water's future availability.

[4] www.azwater.gov/azdwr/StatewidePlanning/WaterAtlas/ActiveManagementAreas/Volume_8/final.pdf.

[5]Letter to Jared Blumenfeld, EPA Regional Administrator, and Colonel Kim Colloton, Corps District Engineer, from Ray Carol, Pima County Supervisor dated November 18, 2014.

[6] FEIS, p. 338.

[7] FEIS, p. 322 and p. 328.

[8] FEIS, pp. 328-329.

[9] FEIS, p. 330 and Table 58, p. 337. Groundwater drawdown is estimated at up to 90 feet adjacent mine site pumping, and up to 10 feet within an approximately 3-4 mile radius (42 square miles).

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declines ranging from 15-85 feet.[10] Private and public well owners and suppliers have expressed concern regarding the impact on the quality and quantity of their water supply, as well as the increased costs associated with pumping from a deeper aquifer if the mine is constructed.[11] Rosemont mine proposes to conduct groundwater recharge as a voluntary measure, but the location and effectiveness of recharge is unknown and, therefore, may not benefit the Upper Santa Cruz subbasin.[12]

Finally, the Cienega Creek watershed is located in a near pristine landscape rich in biodiversity. As such, it is an important location for outdoor recreation. The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited. Public and private utilization of this habitat contributes to a robust recreation and tourism industry in the region.[13] Loss of recreational and aesthetic value stemming from the mine's various adverse impacts to water quality are an important additional consideration in permit authorization (33 CFR 320.4).

In summary, sufficient evidence exists to conclude that several water quality aspects that may be beyond the scope of the state's §401 water quality certification remain outstanding, which EPA recommends be considered in your findings under the §404(b)(1) Guidelines and Public Interest Review. Please do not hesitate to contact me with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Section Supervisor, at (415) 972-3483.

Sincerely,

Jared Blumenfeld

Enclosure: EPA letter to ADEQ dated April 7, 2014
cc: Jim Upchurch, U.S. Forest Service
Steve Spangle, U.S. Fish and Wildlife Service
Ray Suazo, Bureau of Land Management
Trevor Baggiore, Arizona Department of Environmental Quality

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[10] FEIS, p. 350.
[11] Letter to Jared Blumenfeld, EPA Regional Administrator and Colonel Kim Colloton, Corps District Engineer dated November 12, 2014 signed by 76 private well owners and public water suppliers and users.
[12] FEIS, pp. 360-361. In addition, Rosemont Mine offered a legally binding residential well protection plan valid during the operation of the mine, but not all well owners have agreed to sign the agreement.
[13] $2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. An analysis by Sonoran Institute estimates a one percent reduction of travel and tourism-related spending in the region would result in an economic loss greater than the entire annual payroll of the mine. J.E. Marlow. 2007. *Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona*. Sonoran Institute Study.

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