

Arizona Mining Reform Coalition – Concerned Citizens & Retired Miners Coalition –  
Save Tonto National Forest – Sierra Club

And John Krieg

July 12, 2016

*Via Email ([resolutioncoppermine@azdeq.gov](mailto:resolutioncoppermine@azdeq.gov))  
and U.S. Mail*

Arizona Department of Environmental Quality  
Water Quality Division  
Attn: Swathi Kasanneni  
1110 W. Washington St., 5415B-3  
Phoenix, AZ 85007

**Re: *Comments and Objections to ADEQ's Renewal of the Resolution Copper Mining  
AZPDES Permit No. AZ0020389***

Dear Ms. Kasanneni:

These comments are submitted on behalf of Arizona Mining Reform Coalition (“AMRC”), the Concerned Citizens & Retired Miners Coalition, Save Tonto National Forest, the Sierra Club, and John Krieg, to the Arizona Department of Environmental Quality (ADEQ) pertaining to ADEQ’s proposal to renew the Arizona Pollutant Discharge Elimination System (AZPDES) Permit No. AZ0020389 for Resolution Copper Mining (RCM) in order to facilitate new mining facilities and activities and new sources of discharge associated with its mining project near Superior, Arizona.

**Arizona Mining Reform Coalition** works in Arizona to improve state and federal laws, rules, and regulations governing hard rock mining to protect communities and the environment. AMRC works to hold mining operations to the highest environmental and social standards to provide for the long term environmental, cultural, and economic health of Arizona. Members of the Coalition include: Apache – Stronghold, Center for Biological Diversity, Concerned Citizens and Retired Miners Coalition, Concerned Climbers of Arizona, Dragoon Conservation Alliance, EARTHWORKS, Empire Fagan Coalition, Environment Arizona, Groundwater Awareness League, Maricopa Audubon Society, Save the Scenic Santa Ritas, Grand Canyon Chapter of the Sierra Club, Sky Island Alliance, Spirit of the Mountain Runners, Tucson Audubon Society, and the Valley Unitarian Universalist Congregation.

The **Concerned Citizens and Retired Miners Coalition** is a group of citizens who: 1) reside in Superior, Arizona, or do not reside in Superior, Arizona, but are affiliated with relatives who are residents; 2) are retired hard-rock miners who previously worked in the now non-operational mine in Superior, Arizona, and were displaced due to mine closure or personal disability; or 3) are individuals who are concerned that important U.S. public recreational land will be conveyed to a foreign mining company for private use.

**Save Tonto National Forest** works to protect our National Forest and promote safe and responsible use by all groups of outdoor enthusiasts. We are based in Queen Valley, Arizona and have around 260 members concerned about the direction the Tonto National Forest is going.

**Sierra Club** is one of the nation's oldest and most influential grassroots organizations whose mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." Sierra Club has more than 2.4 million members and supporters with 35,000 in Arizona as part of the Grand Canyon (Arizona) Chapter. Our members have long been committed to protecting and enjoying the Tonto National Forest and have a significant interest in the proposed Resolution Copper Mine and related activities.

John Krieg owns a residence in Queen Valley and lives directly downstream from the area affected by these permits.

The Arizona Mining Reform Coalition previously provided written comments to ADEQ in 2010 in reference to the prior version of this AZPDES permit. Because many of our prior concerns remain relevant to ADEQ's current proposal to renew RCM's AZPDES permit, these comments are expressly incorporated here by reference.

#### **Improper conduct of the one scheduled public comment meeting**

Before getting into our comments, we have been notified by one of our members that the public meeting scheduled on July 12, 2016, in Superior, Arizona, was closed early without notification to the public and that he was not able to give oral comments.

This is troubling as the public notice for comments found on your website at: <https://www.azdeq.gov/public-notice-call-comments-azpdes-az0020389> clearly states that a Public Hearing will be held at the Superior Junior/Senior High School, 100 W. Mary Drive, Superior, AZ 85173, on July 12, 2016, from 6:00pm to 9:00pm. The purpose of the public hearing is to allow the public to make comments for the record. Yet our Coalition member arrived at the Superior Junior/Senior High School, 100 W. Mary Drive, Superior, AZ 85173, on July 12, 2016, at 7:00 pm, well within the scheduled time of the meeting, and found no one at the High School from ADEQ and certainly no public meeting where he could give testimony. He states that there was no notice anywhere visible that the meeting had ended before the allotted time. There may have been other members of the public that tried to attend the meeting to give testimony, but were unable to do so since you had ended the meeting early.

We request that you convene another public comment meeting that is duly and properly scheduled and advertised and that remains in session for the entire scheduled time and that you reopen the comment period until the close of that meeting. We further request the right to supplement these comments until the end of this new comment deadline.

#### **Comments**

As discussed in greater detail below, the proposed AZPDES permit would allow discharges of mine site stormwater from existing Outfall 001 and discharge of treated mine project water from

existing Outfall 002 (as of 2010) to an unnamed wash, tributary to Queen Creek, located upstream of Boyce Thompson Arboretum and the local community of Queen Valley as well as other downstream communities. As written, the proposed AZPDES permit is contrary to the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.* and applicable law, including the CWA's anti-backsliding requirements, 40 C.F.R. § 122.4(i) and standards that protect the receiving waters of Queen Creek, which is listed as impaired under Sec. 303(d), and other requirements. The permit renewal also proposes to remove important permit requirements, including specific limits on Total Dissolved Solids (TDS) and to retroactively approve RCM's failure to construct the mandatory Reverse Osmosis (RO) system required by RCM's current Aquifer Protection Permit (APP) No. P105823 (which is directly associated with this AZPDES permit),<sup>1</sup> among other failures.

ADEQ should revisit the draft AZPDES permit to institute robust standards, limitations and permit requirements in conformance with existing law that are truly protective of the environment, public health, and the receiving waters of Queen Creek. AMRC's specific comments and objections to the currently proposed AZPDES permit are set forth below.

**1. The Discharge from Outfall 002 is a New Discharge from a New Source Which Requires RCM to Secure a Separate AZPDES Permit, Among other Requirements**

Under the proposed AZPDES permit (as in the 2010 Permit), ADEQ once again treats RCM's discharge of mine water through Outfall 002 (which is a product of mine dewatering stemming from the installation of new mine shafts sunk to extraordinary depths (below 7,000 feet) and new tunnels, wells and related structures which have been recently built to facilitate development of totally new mine facility and project), as an "existing discharge," and not a "new discharge" as contemplated in the Clean Water Act and 40 C.F.R. §§ 122.2 and 122.29, presumably because (in its view) any discharges of pollutants from the site predate 1979.<sup>2</sup> For this same reason, ADEQ

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<sup>1</sup> The 2016 ADEQ Draft Fact Sheet fails to inform the public that RCM has, simultaneous to this application, requested a "significant amendment" to its APP which is directly related to this AZPDES Permit. The amendment would, among other things:

- Revise the design flow of the MWTP to 2.16 mgd (average flow rate)
- Include additional source water to be treated by the MWTP's HDS system
- Remove certain treatment standards
- Change the location of the proposed point of compliance
- Revise compliance schedules and monitoring tables

Given the material changes to the APP that are directly related to the current AZPDES Permit, ADEQ should stay the issuance of this Permit pending completion of the APP and provide full notice to the public on the connected nature of these two permits.

<sup>2</sup> The historic Magma Mine was operated at the West Plant Site by RCM's predecessor in interest, most recently BHP, from 1914 to 1996. These historic mine facilities, which have since been closed out or remediated, contained an old slag pile and smelter, concentrator, tailings ponds and waste rock. The mine expanded to the East plant site in 1970, and began construction of Shaft #9, which was later left dormant after the mine closed. *See Resolution Copper Company Site Introduction Presentation, dated February 2005, ADEQ File: Resolution Copper Mining, LLC Background Information, Inventory #101703* (obtained through written public record requests (2010)). Today Shaft #9 has been deepened substantially, Shaft #10 has been developed, and

also apparently concludes that RCM's new mine project (which is presently the subject of a recent Mining Plan of Operation filed with the Tonto National Forest Service) is an "existing facility" and not a "new source," under these same regulations.<sup>3</sup>

At this point, ADEQ's continued instance that the seepage pumping and mine dewatering effluent to be discharged from RCM's mine project through Outfall 002 is nothing more than an "existing discharge" from an "existing facility" is simply not credible and strains the imagination beyond what the law permits.<sup>4</sup> It is well documented that RCM is planning on developing a totally new mine project.<sup>5</sup> Indeed, RCM's Mining Plan of Operations is presently the subject of ongoing public scoping comments under the National Environmental Policy Act (NEPA),<sup>6</sup> – plans that include certain of the new activities, facilities and structures discussed in the instant Draft Permit, ADEQ Fact Sheet and Public Notice. ADEQ's continued conclusions to the contrary, despite the known facts about this project, violate the law. The RCM project should be acknowledged as a new source that presents a new discharge and it should be required to apply for and receive a new AZPDES permit for the discharges associated with Outfall 002. As discussed below, RCM should also be prohibited from discharging additional copper to Queen Creek since this receiving water is already impaired for copper.

## **2. The Discharge of Additional Copper to Queen Creek, which is Already Impaired for Copper, Violates the Clean Water Act**

Several reaches of Queen Creek remain listed on Arizona's 303(d) List of Impaired Waters due to exceedances in dissolved copper, while other segments are impaired for lead (total) and selenium

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RCM has submitted plans for the development of a massive block cave mining operation at Oak Flat. See footnote 4, *infra*.

<sup>3</sup> See <http://www.resolutionmineeis.us/>

<sup>4</sup> Even in the Fact Sheet ADEQ admits that the Superior Mine, which operated as an "underground mine with an onsite smelter" has been shut down since 1998. Fact Sheet at 2. Interestingly, the Fact Sheet also states that "active mining is not occurring" at the site, but then in the next paragraph says that the "main source of water sent to the MWTP is from dewatering operations from the underground mine." What ADEQ ignores is that the "underground mine" that is currently being developed by RCM is a totally different mine, with different depths (among other things) than the BHP mine that was shut down long ago.

<sup>5</sup> The Resolution copper deposit is one of the largest undeveloped copper deposits in the world with an estimated copper resource of 1.7 billion metric tons at an average grade of 1.52 percent copper. See <http://www.resolutionmineeis.us/about-project>

<sup>6</sup> See footnote 3, *supra*.

(total).<sup>7</sup> Dissolved copper loading has been found to exceed ADEQ surface water quality standards at least since 2002 in Queen Creek. *See* Queen Creek (TMDL) Maximum Daily Load Fact Sheet.<sup>8</sup>

ADEQ disregards the fact that Queen Creek is impaired for copper (and also selenium and lead),<sup>9</sup> based on the apparent assumption that as long as RCM's discharge complies with water quality standards, the discharge must be permitted. That is not the law. The obvious objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of our Nation's waters. Even if the discharge itself will not violate water quality standards (which has not been shown to be the case here), the Clean Water Act prohibits discharges of a pollutant into an impaired water body if that pollutant is the reason for the impairment (*i.e.*, the reason why the stream is on the 303(d) list), unless certain stringent planning and stream remediation efforts have been finalized and are in place – which (as discussed below) has not been done in this case.

Here, Queen Creek is listed as impaired for copper and the discharge permitted under the renewed AZPDES permit, which is a “new discharge” from a “new source” under 40 C.F.R. §§ 122.2 and 122.29 (as discussed above), will contain copper (among other pollutants). Under the CWA, such a discharge will “cause or contribute” to water quality violations and cannot be permitted without a plan in place to ensure that the stream can and will achieve the standard. *See* 40 C.F.R. § 122.4(i) (“Prohibitions. No permit may be issued: (i) To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards”). This regulation is a flat-out prohibition against any new discharge that would cause or contribute to a violation of a water quality standard.

Furthermore, this regulatory requirement of the CWA allows for only one limited exception – in 40 CFR § 122.4(i) – to the prohibition of discharges into impaired waters that already are violating the standard. In order for a discharge of the pollutant in question to be allowed, the EPA regulations require strict assurances that (1) the stream can handle the new discharge and still meet the standard and (2) that specific plans are in place to ensure that the stream will be brought back to health—*i.e.*, achieve the applicable water quality standard for that waterbody.<sup>10</sup> Thus, the permit

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<sup>7</sup> *See Arizona's 2012/2014 List of Impaired Water*; *see also* [http://legacy.azdeq.gov/envIRON/water//assessment/download/middle\\_gila\\_2016.pdf#page=44](http://legacy.azdeq.gov/envIRON/water//assessment/download/middle_gila_2016.pdf#page=44)

<sup>8</sup> Available at [http://www.azdeq.gov/sites/default/files/middlegila\\_qc\\_headwater\\_fs.pdf](http://www.azdeq.gov/sites/default/files/middlegila_qc_headwater_fs.pdf)

<sup>9</sup> There is confusion in the Permit and Fact Sheet as to whether or not the locations of Outfall 001 and Outfall 002 are above or below the Superior WWTP (which serves to divide these two segments of Queen Creek) and therefore whether or not the receiving waters of Queen Creek for this permit are impaired for selenium and lead as well as copper. To the extent the receiving waters are, in fact, also impaired for selenium and lead, the proposed permit cannot allow for discharges of selenium or lead for the same reasons discussed here regarding copper.

<sup>10</sup> Specifically, 40 C.F.R. § 122.4(i) requires that:

The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent

applicant has the dual burden of demonstrating that “there are sufficient pollutant load allocations to allow for the discharge” and that “existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.” That has not occurred here.

As noted in prior comments on the 2010 AZPDES (which are still applicable today, if not more so given the new mine activities at issue), the Ninth Circuit Court of Appeals has directly affirmed this reading of the CWA and its regulations. In *Friends of Pinto Creek v. United States E.P.A.*, the court overturned a water quality discharge permit issued by the federal EPA to a large copper mining project in Arizona. See *Friends of Pinto Creek v. U.S. E.P.A.*, 504 F.3d 1007 (9th Cir. 2007), *cert. denied*, 129 S.Ct. 896 (2009). The critical issue in that case was whether a discharge permit could be issued that would add a pollutant to Pinto Creek, a water body that did not meet the applicable water quality standard for that pollutant—in that case, dissolved copper. The court vacated and remanded the EPA-issued permit on the ground that such a discharge violated the impaired waters provision of the CWA.

In *Pinto Creek*, the Ninth Circuit framed the fundamental issue as: “[w]hether the issuance of the permit to discharge a pollutant, dissolved copper, into Pinto Creek, which already exceed the amount of dissolved copper allowed under the Section 303(d) Water Quality Standards, is in violation of the Clean Water Act and applicable regulations?” *Pinto Creek*, 504 F.3d at 1009. The court said that such a discharge would violate the CWA. The Ninth Circuit’s decision squarely rejected the “offset” defense raised by EPA, the discharger, and ADEQ (which had certified the discharge under CWA Section 401). *Id.* at 1012. Relying on the stated objective of the CWA “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters,” the court held that “[t]he plain language of the first sentence of the regulation is very clear that no permit may be issued to a new discharger if the discharge will contribute to the violation of water quality standards.” *Id.*

The court further held that: “[t]here is nothing in the Clean Water Act or the regulation that provides an exception for an offset when the waters remain impaired and the new source is discharging pollution into that impaired water.” *Id.* The court noted that 40 C.F.R. § 122.4(i) allows for an exception to this strict rule only “where a TMDL has been performed.” *Id.* “[T]his exception to the prohibited discharge by a new source provides that the exception does not apply unless the new source can demonstrate that, under the TMDL, the plan is designed to bring the water into compliance with applicable water quality standards.” *Id.* The court also noted that, in addition to the requirement that a TMDL be performed, the discharger must demonstrate that two conditions discussed in 40 C.F.R. § 122.4(i) have also been met. That is, (1) there are sufficient remaining

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limitations required by sections 301(b)(1)(A) and 301(b)(1)(B) of CWA and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the [NPDES permit] public comment period that:

- (1) There are sufficient remaining pollutant load allocations to allow for the discharge; and
- (2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.

pollutant load allocations to allow for the discharge; and (2) the existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards. 40 C.F.R. § 122.4(i). *See Pinto Creek*, 504 F.3d at 1013. The Ninth Circuit required that these compliance plans must not only show what pollutant load reductions are needed to bring a water body back to health, but also actually how these reductions will be achieved. Specifically, the Court pointed out that the error of both the EPA and the mining company was that the objective of 40 C.F.R. §122.4(i)(2) is not simply to show a lessening of pollution, but to show how the water quality standards will be met if the mine was allowed to discharge pollutants into the impaired waters. *Pinto Creek*, 504 F.3d at 1014.

The *Pinto Creek* court further found that “compliance schedules” must be established for all “existing dischargers” into Pinto Creek, so that the stream could accommodate the new and increased copper discharges from the mine. *Id.* at 1012-13. In this regard, the Court noted that all point sources must be subject to these compliances schedules (*i.e.*, plans designed to reduce the pollutant loading from each source so the stream segment would be brought into compliance with water quality standards). *Id.* The court specifically rejected EPA’s argument that only currently permitted point source discharges were subject to the “compliance schedule” requirement. *Id.* at 1013. The *Pinto Creek* court established the basic procedure that must be followed before a new NPDES permit is issued for a discharge to an impaired water:

If point sources, other than the permitted point source, are necessary to be scheduled in order to achieve the water quality standard, then EPA must locate any such point sources and establish compliance schedules to meet the water quality standard before issuing a permit. If there are not adequate point sources to do so, then a permit cannot be issued unless the state or [the discharge permit applicant] agrees to establish a schedule to limit pollution from a nonpoint source or sources sufficient to achieve water quality standards.

*Id.* at 1014. On this point, EPA had correctly argued that nothing in the CWA compelled it to act against other dischargers. However, the *Pinto Creek* court noted that its ruling did not force EPA to take any action requiring existing discharges to reduce their pollutant loadings. Rather, “[t]he EPA remains free to establish its priorities; it just cannot issue a permit to a new discharger until it has complied with [40 C.F.R.] § 122.4(i).” *Id.* at 1015.

To be sure, the fact that ADEQ has not completed the required TMDL for the impaired water in this case does not mean that the discharger or ADEQ is free to bypass the strict requirements of the CWA as held by the court in *Pinto Creek*. Indeed, under the CWA, the discharge to an impaired water is prohibited still, unless, pursuant to a valid and completed TMDL for that stream, the compliance schedules are established for the various discharges as held by the Pinto Creek court.

Interestingly, ADEQ has been working on a TMDL Study for Queen Creek for a number of years – since well prior to ADEQ’s issuance of the 2010 AZPDES permit to RCM. It is difficult to understand precisely why this study has not yet been completed. Certainly, ADEQ’s failure to complete the study is an abdication of its responsibilities under the CWA.

Furthermore, the fact that the ADEQ Draft Fact Sheet acknowledges that the receiving waters of Queen Creek are listed as impaired under 303(d) for copper (2002), lead (2010) and selenium (2102) and then goes on to suggest (almost in passing) that “[t]he TMDL has not yet been completed **but the discharges from the facility have been included in the TMDL study**” cannot not obviate the violations of the CWA discussed above. Indeed, to the contrary. The fact that ADEQ may have completed or come close to completing a TMDL study for Queen Creek and may have even included RCM’s anticipated discharges as part of this study (without any public review or disclosure as part of this permit process) calls for ADEQ to stay its consideration of RCM’s AZPDES permit for Outfall 002, at least until the TMDL is fully completed and has been fully examined and reviewed by the public and EPA.

Interestingly, this reference to a completed (but not disclosed) TMDL study, inserted by ADEQ in the Fact Sheet, indicates that ADEQ plainly understands that its failure to finalize the long anticipated TMDL for Queen Creek is a problem under the CWA. ADEQ’s understanding is also acknowledged in the permit reopener provision of the prior AZPDES permit issued in 2010, which provides that “[t]his permit shall be reopened when the Total Maximum Daily Load (TMDL) for this water segment...is completed.” *Final Authorization to Discharge Under the Arizona Pollutant Discharge Elimination System* at 22, dated December 6, 2010. In sum, ADEQ’s flagrant disregard for the fact that Queen Creek is impaired for copper violates the CWA.

### **3. ADEQ Should Not Remove the Existing Limit on Total Dissolved Solids of 1200mg/l Required by the 2010 AZPDES Permit; This Violates the CWA**

In 2009 RCM began operating the mine water treatment plant (MWTP) utilizing ADEQ lime and soda ash in a high density sludge (HDS) process to remove metals in the mine water from Shaft #9. *See* Memo to Casey McKeon, RCM from Patty McGrath, SRK Consulting, dated June 26, 2015, Subject: AZPDES Permit No. A0020389; Revision of TDS Limit (SRK Memo) (obtained via ADEQ public records request (2015)). However, as the result of previously submitted public comments regarding the potential discharge of high levels of TDS received by ADEQ in 2006 in reference to a draft AZPDES permit for the MWTP, ADEQ began to engage RCM about the potential to limit the discharge of TDS to Queen Creek. Specifically, concerns about the potential discharge of high levels of TDS to Queen Creek were raised by the Director of the Boyce Thompson Arboretum (located downstream on Queen Creek) and University of Arizona Soil Scientist, Dr. James Walworth, who warned that the discharge of water containing high TDS levels “is a major concern” as it “will likely cause serious long-term ecological damage.”<sup>11</sup> Dr. Walworth also suggested that the water “should receive additional treatment, or be used for another purpose.”

After discussions with RCM, both in reference to the 2010 AZPDES Permit for Outfall 002 and in reference to the related APP (APP #P-105823), ADEQ included a daily maximum TDS limit in the 2010 AZPDES Permit of 1200 mg/L for Outfall 002. Because the HDS treatment process does

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<sup>11</sup> *See Email communication from Mark Beirner, Ph. D., Director of Boyce Thompson Arboretum to Joan Card, ADEQ Director, Water Quality Division, dated September 13, 2006 re: Permit No. AZ002038; Email communication from Dr. James Walworth, Department of Soil, Water and Environmental Science, U of A, to Joan Card, ADEQ Director, Water Quality Division, dated September 3, 2006, re: Resolution Copper Mining Company Discharge Permit (obtained via ADEQ public records request (2008)).*



not remove TDS, RCM committed to treat a portion of the HDS treated water to remove TDS through the construction of a reverse osmosis (RO) plant as a component of the MWTP. *See* ADEQ 2010 AZPDES Permit Fact Sheet at 2; SRK Memo at 2. The ADEQ 2010 Fact Sheet explains that “during wet months when the NMIDD [New Magma Irrigation and Drainage District] has a lower demand for the mine water, it will be treated with HDS and RO before being discharged through Outfall 002....” Fact Sheet at 2. The Fact Sheet went on to note that RCM “has the ability to adjust the ratio of HDS raw effluent to RO effluent for the final blended effluent at the outfall in order to meet permit requirements.” *Id.*

However, despite RCM’s commitment to construct the RO treatment plant in both the 2010 AZPDES and the 2010 APP (#P-105823) (a factor that was considered by ADEQ in issuing both permits and reflected the understanding of the protective measures reviewed by the public as part of the public review process for the permits), the RO treatment plant was never constructed by RCM. For this reason, (or perhaps due to other benefits to RCM of sending the mine water to NMIDD), RCM purportedly has not discharged to Queen Creek through Outfall 002 under the 2010 AZPDES Permit. In the SRK Memo (which was provided to ADEQ as part of the current permit application packet) SRK Consultant, Patty McGrath, suggests that ADEQ should remove the TDS limit found in the current AZPDES permit, despite acknowledging that without the RO process, TDS levels in the MWTP effluent are still greater than the 1200 mg/L limit set in the 2010 AZPDES Permit. *See* SRK Memo at 4.

ADEQ has apparently adopted the rationale of the SRK Memo and now proposes to provide no limit whatsoever for TDS in the proposed AZPDES Permit. For the reasons set forth below, ADEQ should revisit this issue and, at the minimum, maintain the existing permit limit of 1200 mg/L in the new AZPDES Permit for Outfall 002.

The decision to remove the TDS limit is not permissible under the CWA, as it violates the strict anti-backsliding requirements found in existing law, including Section 402(o) of the CWA. Generally, the anti-backsliding requirements prohibit ADEQ from reissuing an AZPDES permit containing interim effluent limitations, standards or conditions less stringent than the final limits contained in the previous permit, with limited exceptions. To be clear, this requirement of the CWA also prohibits, with some exceptions, the reissuance of permits originally based on best professional judgment (BPJ) that incorporate limits less stringent than those in the previous BPJ-based permit. This is the rule.

In an effort to get around the anti-backsliding requirements of the CWA, ADEQ suggests that backsliding is permitted with regard to the TDS limit pursuant to 40 C.F.R. § 122.44(l)(2)(i)(B)(1), which provides that a less stringent limit can be applied if information is available which (1) was not available at the time of permit issuance; and (2) which would have justified the application of a less stringent effluent limit at the time of the permit’s issuance. *See* ADEQ 2016 AZPDES Permit Fact Sheet at 6; *see also* SRK Memo at 4. ADEQ rationalizes its position by suggesting that because the prior TDS limit was purportedly based on failures of whole effluent toxicity (WET) tests from a bench-scale study performed with simulated effluent and we now have WET sample results from actual MWTP effluent which show that all three surrogate WET species passed acute and chronic toxicity testing criteria with samples ranging from 1900 to

2140 mg/L, the justification for a TDS limit of 1200 mg/L no longer exists and no TDS limit need be set in the proposed permit. 2016 AZPDES Permit Fact Sheet at 6.

While it is true that ADEQ now has the benefit of 10 WET testing sample results submitted by RCM with sample dates ranging from 2013-2105, *see id.*, this handful of results cannot be accurately characterized as available new information under the first prong of 40 C.F.R. § 122.44(l)(2)(i)(B)(1). This is particularly so when it appears that the above described WET testing was based on very limited sampling of the MWTP effluent by RCM over a 3 year period – only 10 WET sample results were submitted by RCM – with the date and timing of these samples unknown. *Id.*

Indeed, a review of the SRK Memo shows that while average yearly TDS levels have declined over time at the MWTP (both effluent samples and influent samples), these samples are marked by significant spikes in TDS levels both in the effluent from the MWTP and in the influent to the MWTP. SRK Memo at 3. For example, the effluent shows significant TDS spikes as recently as 2014-2015 well above 3000 mg/L, while the influent entering the MWTP shows spikes above 6000 mg/L in 2012-2013 and spikes above 3000 mg/L in 2014-2015. Yet, the samples used for the WET testing appear to have never exceeded 2140 mg/L. *See* Fact Sheet at 6. This convenient result and the limited nature of testing undermines ADEQ's conclusion that TDS in the effluent will not causing toxicity. Accordingly, this does not constitute sufficient new information within the meaning of the first prong of 40 C.F.R. § 122.44(l)(2)(i)(B)(1).

Under the second prong of 40 C.F.R. § 122.44(l)(2)(i)(B)(1), the new information (had it been available at the time of the prior AZPDES permit) must support the application of a less stringent effluent limit (or in this case, no limit whatsoever) to fit within the enumerated exception to the CWA's strong anti-backsliding requirements. This is not the case here, since the very real concerns about TDS possible impacts to Queen Creek, its habitat and vegetation and on downstream water users and important places like Boyce Thompson Arboretum, still remain. Indeed, even assuming that the TDS levels in the effluent have leveled off to a yearly average of 2000 mg/L (which masks the extreme spikes witnessed throughout sampling year), as discussed below, EPA recommends a TDS limit of 500 mg/L for public drinking water systems. ADEQ and RCM have failed to show that discharges to Queen Creek with a TDS of 2000 mg/L will not be harmful and that a less stringent limit (meaning no limit) would have been appropriate.

RCM has noted that the estimated maximum discharge capacity of Outfall 002 is 3.6 MGD. 2016 AZPDES Permit Fact Sheet at 3. Under the proposed AZPDES Permit, RCM can elect whether to send the treated effluent to NMIDD or to discharge the mine effluent into Queen Creek, which could result in significant TDS loading to Queen Creek over the life of the Permit. This presents numerous concerns, some of which are briefly summarized below:

- It is not clear from the materials we have reviewed precisely what the elements of the Total Dissolved Solids are. TDS is a measure of all constituents, or elements, dissolved in water. This can include inorganic anions (negatively charged ions) like carbonates, chlorides, sulfates and nitrates. The inorganic cations (positively charged ions) include sodium, potassium, calcium and magnesium. Without knowing more about the composition of the TDS that will be discharged from the mine, it is difficult to analyze

the potential impacts from the discharge of high levels of TDS to Queen Creek's receiving waters or to conclude that the discharge is "free from pollutants in amounts or combination" that might harm or inhibit aquatic life, cause an objectionable odor or off-flavor in aquatic organisms, become toxic to animals, livestock, plants or other organisms (particularly over time with limited dilution), impair recreational uses of Queen Creek, including at Boyce Thompson, or change the color of the surface water from natural background levels of color. *See, e.g.*, draft AZPDES Permit at Sec. D at 7. This should be analyzed and clarified.

- Sulfate is a constituent of TDS and may form salts with sodium, potassium, magnesium and other cations. Sulfates are a particular concern in this instance (the RO plant was originally intended to address sulfates) but this has not been discussed in the current permit documents or addressed in any way. Indeed, ADEQ has not even set alert levels for sulfates under the permit. This should be clarified and corrected.
- Under the Federal Safe Drinking Water Act, the EPA classifies TDS as a secondary maximum contaminant level (sMCL) with a recommended maximum level of 500 mg/L.<sup>12</sup> Even at 500 mg/L, these elevated levels of TDS can impact the taste of water and damage water treatment equipment. The minimum TDS levels we can expect from the RCM MWTP are 2000 mg/L. This is a significant difference. Many states have prohibited discharges of TDS beyond the sMCL of 500 mg/L due to the varying harms associated with the discharge of TDS. The downstream community of Queen Valley relies on shallow wells located in the alluvium along Queen Creek. We have seen no information showing that ADEQ has examined possible impacts of elevated levels of TDS on Queen Valley's water supply and water treatment equipment.
- Queen Creek is an intermittent stream at best with a limited capacity to assimilate (dilute) the TDS discharged from Outfall 002 to acceptable levels (less than 500 mg/L). There is no evidence in the materials we have reviewed that shows that ADEQ has considered this problem. In addition, because of Queen Creek's limited flows and the arid nature of the region, it is unclear whether there will be a sufficient amount of sudden freshets to flush the salt, sulfates and other TDS elements out of the riparian zone or whether these elements will collect in the root zones of the riparian plants and trees located along Queen Creek and eventually kill this vegetation, including potentially the special and unique vegetation at Boyce Thompson or at the golf course in Queen Valley.<sup>13</sup>
- RCM is presently planning to locate the mine tailings from the RCM mine just outside Superior, Arizona, at an unlined site up gradient of Queen Creek. This could result in significant acidic drainage entering Queen Creek. This could adversely impact the capacity of Queen Creek to assimilate the high levels of TDS contemplated under the permit.

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<sup>12</sup> <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance- nuisance-chemicals>

<sup>13</sup> The draft AZPDES Permit only contemplates "short-term" chronic toxicity tests which are insufficient to measure the chronic exposure likely resulting from the removal of TDS standards.

- Under the 2010 AZPDES Permit that limited TDS to 1200 mg/L, RCM was required to monitor for TDS once a month (1x/month). Under the current proposal, which does not have any TDS limit, RCM is merely required to take a sample one time every six months (1x/6 months). This monitoring requirement is grossly insufficient to protect the human health and environment of Queen Creek. With no TDS limit in the permit, monitoring should be much more vigorous.

For all of the reasons discussed above, there can be no doubt that the removal of TDS limitations in the proposed Permit violates the CWA anti-backsliding requirements and it is simply a very bad idea. ADEQ should exercise its authority to protect water quality and downstream water supplies and not abdicate this obligation under the CWA and its agency mission for the benefit of RCM.

#### **4. ADEQ Fails to Adequately Analyze the Potential Impacts to Queen Creek Resulting from a Simultaneous Discharge of Stormwater Through Outfall 001 and Mine Water Through Outfall 002**

ADEQ has failed to analyze the potential impact to Queen Creek and the human environment from the simultaneous discharge of stormwater through Outfall 001 and mine water through Outfall 002. While it is true that Outfall 001 and Outfall 002 are separate points of discharge, they both discharge into Queen Creek at virtually the same place. Indeed, the AZPDES permit provides the same longitude and latitude for both Outfalls. Thus, wintertime rain events that could necessitate a stormwater discharge at Outfall 001 could easily correlate to discharges of mine water at Outfall 002, resulting in the co-mingling of these discharged waters almost immediately in Queen Creek.

Given RCM's expressed desire to begin discharging through Outfall 002 (particularly when the water is not needed for irrigation by NMDD) it is very likely that there will be a number of significant and powerful rain events that could cause RCML to significantly exceed discharge limitations from Outfall 001. If this discharge is commingled with existing discharges mine water from Outfall 002, the adverse impacts to Queen Creek and the surrounding aquifers could be magnified substantially. Nevertheless, the possible collective impact and loading to Queen Creek from the co-mingling of these discharged waters and the possible impact to downstream aquifers and surface waters does not appear to have been analyzed by ADEQ. This concern is elevated in light of the potential TDS issues discussed above.

In conclusion, the draft AZPDES Permit is fatally flawed and its issuance would violate the CWA, Arizona law and other applicable authorities. ADEQ should refrain from issuing this Permit until a complete and proper permitting process can be undertaken and adequate protections for the environment, the public health and the waters of Arizona can be developed.

Please include the Arizona Mining Reform Coalition, Concerned Citizens & Retired Miners Coalition, Save Tonto National Forest, the Sierra Club, and John Krieg as interested parties and direct all future public notices and documents to us at the address below.

Sincerely,

Roger Featherstone

A handwritten signature in black ink, appearing to read 'Roger Featherstone', written over a horizontal line.

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