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May 31, 2012

Henry R. Darwin, Director
Arizona Department
of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Dear Director Darwin:

I am writing to express my concern with the possibility that the Arizona Department of Environmental Quality ("ADEQ") is about to issue a temporary or individual Aquifer Protection Permit ("APP") to Curis Resources for its proposed in-situ copper mine in Florence, Arizona. This matter involves environmental and economic threats to a Commission-regulated public service corporation, Johnson Utilities. The Commission has a duty to investigate this issue under Article 15, Sections 3 and 4 of the Arizona Constitution, which provide the Commission with authority to take actions to protect the health of Commission-regulated utility customers and to investigate the utility's affairs, respectively. I request that this letter be retained for and entered into the official public record for Curis' temporary and individual APP applications.

As I understand it, Curis' operation plan involves injecting sulfuric acid and releasing chemicals into an aquifer that Johnson Utilities uses to supply drinking water to customers from wells located just down the street from the Curis facility. I think you might see how this could raise some red flags. My concerns are three-fold:

I. The health and safety of ratepayers in the event that Curis' containment system fails and catastrophic contamination of the water supply occurs.
II. The health and safety of ratepayers as a result of contamination that will occur as a direct result of permitting the facility.
III. Costs that will ultimately be passed to ratepayers for treating groundwater contaminants that currently are below levels required for treatment but will likely rise significantly above drinking water standards.

I. Catastrophic Failure

I understand that Curis proposes to inject roughly 5.4 billion pounds of sulfuric acid over the course of 20 years into fractured bedrock in an area where it can easily mix with the drinking water supply. Incidentally, that area is also adjacent to the Gila River and to residential subdivisions within the boundaries of the Town of Florence that are served by Johnson Utilities. I'm told that groundwater in the area flows in a northwesterly direction past the Curis property

toward Johnson Utilities' twelve wells and beyond. The nearest Johnson well is only 1.2 miles away. The nearest homes are only 1.5 miles away.

It's also my understanding that the acid used will essentially dissolve the ore where it exists in the earth, creating a toxic slurry of minerals and acid that can then be pumped back to the surface. So in addition to the acid and the copper, it seems we're talking about a potential release of other elements that, according to public records, Curis and ADEQ are aware of – such as arsenic, lead, sulfur, radionuclides, and others. If Curis fails to contain these elements within the oxide zone, I am very concern that Johnson Utilities' wells will be contaminated. I also understand that in-situ mining, while fairly new to the copper scene, is a relatively popular and long-standing mining technique for other valuable minerals, like uranium. And the track record for protecting groundwater isn't good.

II. Permitted Contaminations

Another concern that has been brought to my attention is the fact that Curis' permit application would allow a number of chemicals to be released into the aquifer at levels that exceed drinking water standards. For example, Curis acknowledges that its operations will mobilize arsenic. The drinking water standard for arsenic is 10 parts per billion. But Curis proposes to ensure only that arsenic will not exceed 50 ppb – five times the drinking water standard – as it leaves the site. In fact, Curis anticipates arsenic concentrations in its wastewater at levels ranging from 50 to 6,600 parts per billion. If you issue a permit to Curis that approves the 50 ppb standard, Curis will not be obliged to protect drinking water quality. This regulatory gap may require ratepayers, rather than Curis, to incur significant costs for treating the groundwater to the drinking water standard.

III. Cost of Treatment

I am concerned that Johnson Utilities, and ultimately its customers, will be forced to incur significant costs to treat its drinking water for chemicals that it currently does not have to treat for (e.g. arsenic), because the APP permit will allow releases of chemicals into the drinking water that exceed current drinking water quality standards. Known for its conservative regulatory implementation cost projects, EPA estimated that to achieve the arsenic drinking water standard of 10 ppb, the total cost for a system serving 10,001 to 1,000,000 people is approximately $19,000,000,[1] and the average annual treatment and monitoring costs may reach $477,614.[2] EPA estimated that the costs translate to an average of $24.41 per household served

[1] Stedge, Ph.D., Gerald D., *Arsenic in Drinking Water Rule Economic Analysis*, EPA 815-R-00-026 (Dec. 2000), p. 6-29, Exhibit 6-11.
[2] *Id.*, p. 8-21, Exhibit 8-21.

by the water provider.[3] Independent studies suggest that the cost per household may range between $500[4] and $792[5] per year.

As you can see, there are a number of issues that have great potential to severely impact the ratepayers served by Johnson Utilities. I would greatly appreciate your consideration of these serious concerns and await your thoughtful response.

Sincerely,

Paul Newman
Commissioner

cc: Sandra A. Fabritz-Whitney
The Honorable Tom Horne
Chairman Gary Pierce
Commissioner Bob Stump
Commissioner Sandra D. Kennedy
Commissioner Brenda Burns
Steven Olea
Janice Alward
Ernest G. Johnson
Rebecca Rios

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[3] *Id.*, p. 6-35, Exhibit 6-17.
[4] Gurian, Patrick, et al., *Addressing Uncertainty and Conflicting Cost Estimates in Revising the Arsenic MCL*, Environ. Sci. Technol. 2001, 35, 4414-4420, 4416 (Table 1).
[5] Raucher, Robert S. and Cromwell, John, *Safe Drinking Water Act: Cost of Compliance*, Mercatus Center, George Mason University, Working Paper #35, p. 21, Table 12.