



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
Director

C/025/005 Incoming
cc: April
Ken
✓ JRB
✓ DD
Coal

OK

NOV 23 2012

Mr. Larry Johnson, Manager
Alton Coal Development, LLC - Coal Hollow Mine
463 North 100 West, Suite 1
Cedar City, UT 84721

Subject: Options for addressing the Lower Robinson Creek Impairment
Alton Coal UDPES Permit UTG040027

Thank you for meeting with us last spring. As we discussed, the USEPA made an impairment determination for total dissolved solids (TDS) for the Kanab Creek-2 Assessment Unit (AU) (see attached April 11, 2012 letter). The Kanab Creek-2 AU is Kanab Creek and tributaries from the confluence with Fourmile Hollow near the White Cliffs to Reservoir Canyon. Lower Robinson Creek is part of this AU and it is a receiving water for your discharge permit. Permitted discharges to impaired waters may be subject to additional restrictions and the following provides a summary of available options we have identified to address the water quality impairment of Kanab Creek-2.

In this context, impairment means that the agricultural beneficial use (Class 4) is not supported because TDS concentrations exceed the water quality standard of 1,200 mg/l that is in state rule. Typically, a TMDL (Total Maximum Daily Load analysis) is required for all impaired waters, which would identify all contributory sources of the contaminant (TDS, in this case), and then allocate the reductions, across all sources, that are required to bring the water body back into compliance with the water quality standard. Changes to the water quality standards (UAC R317-2) can also be used to address all or part of the impairment, should the impairment be found to be a natural background condition or is otherwise unalterable. However, based on the attached Pinto Creek Decision, requests for new discharges/sources (additional discharge points) that could exacerbate the impairment would be denied until the TMDL is implemented or the impairment is otherwise addressed as outlined below.

A TMDL would characterize all TDS sources within the watershed and establishes reductions in loads needed to meet numeric criteria. A TMDL takes a minimum of three years to complete under optimal, non-controversial circumstances and is prepared by DWQ's Watershed Protection Section. The TMDL must ultimately be approved by the Utah Water Quality Board and USEPA. In addition to the comprehensive characterization of water quality in the watershed, the TMDL process appropriately provides for extensive stakeholder involvement such as other state, federal,

and local agencies, water users, landowners, and the public.

Sometimes, either within or outside of the TMDL process, DWQ may conclude that a site-specific standard is appropriate due to natural conditions (not influenced by human activity) that preclude attainment of numeric criteria (see attached Q&A document). This conclusion can result in a subsequent change to water quality standards. These changes can either be a change to the beneficial use (i.e., removal of the agricultural use) or a change to the numeric criteria that protect the use. Proposed changes to standards are vetted with the Water Quality Standards Workgroup, approved by the Utah Water Quality Board, and finally approved by USEPA after being adopted by the State, and must provide opportunities for stakeholder comment. This process can be completed in a year under optimal circumstances utilizing one of the following options, but there is some measure of risk that a standards' or classification change may not be possible due to adverse comment or some technical issue.

Option 1: The beneficial use classification can potentially be changed or modified by conducting a Use Attainability Analysis (UAA). In this case, removing the Class 4 use doesn't appear viable and would likely require special studies because evidence of current crop irrigation in the watershed exists, which would be an "existing use" that requires protection under federal water quality regulations (see attached EPA Smithee letter).

Modifying the agricultural use water quality standards for this specific site, by defining the best attainable condition through the UAA process, would ultimately require a site-specific standard to be adopted (discussed below).

Option 2: The numeric criterion protecting the use can be modified per R317-2-7.1:

"....Site-specific criterion may be adopted by rulemaking where bio monitoring data, bioassays, or other scientific analyses indicate that the statewide criterion is over or under protective of the designated uses or where natural or un-alterable conditions or other factors as defined in 40 CFR 131.10(g) prevent the attainment of the statewide criterion."

The factors in 40 CFR 131.10(g) are:

1. Naturally occurring pollutant concentrations prevent the attainment of the use; or
2. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
3. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
4. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
5. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

6. Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

As allowed by R317-2-7.1, a higher site-specific criterion is allowed if the statewide criterion is demonstrated to be overly protective. More refined methods of evaluating the potential adverse effects of TDS to crops are available such as electrical conductivity and sodium absorption ratio. These models could be screened to determine the viability of this approach. This approach would likely require the collection of additional data.

Our preliminary analyses suggest that the least resource intensive option is to establish a site-specific numeric criterion for TDS on the basis of natural background conditions—the underlying lithology within the Kanab Creek watershed—that results in a typically high TDS concentration in the ambient water (condition 1 in CFR 131.10(g)). Water quality data collected from Lower Robinson Creek and Kanab Creek-2 demonstrates TDS exceeding 1,200 mg/l prior to operation of the mine and in the absence of any other permitted discharges in the watershed (to be confirmed). Under this approach, historical data would be used to estimate background (naturally occurring) TDS concentrations, resulting in a modified numeric criterion for TDS. Background conditions, by definition, do not include contributions from point sources or anthropogenic nonpoint sources. The contribution of nonpoint sources using best management practices can be considered under the UAA approach, although estimating these sources is often the most challenging part of these site-specific standard analyses. Once established, permitted discharges typically cannot exceed the site-specific standard. Site-specific criterion changes based on background, if appropriate, tend to be the most straightforward of all the options.

Other options for a site-specific criterion include irreversible conditions (40 CFR 131.10(g)(3) or widespread deleterious economic impacts (40 CFR 131.10(g)(6)). The viability of these approaches cannot be determined based on currently available data. These approaches could be pursued, although either would likely have much greater data requirements than a site-specific criterion based on natural background conditions.

Alton Coal is not required to take any specific actions beyond those required by your discharge permit. Per standard practices, DWQ will conduct a TMDL as required by regulation. If a quicker resolution is desired, Alton Coal can pursue a site-specific TDS standard for Robinson Creek on a parallel track to the TMDL. If Alton Coal chooses to expedite the site-specific standard process, the company, or their consultants, would compile and analyze the available data to determine natural background TDS concentration. Once analyses are complete, Alton Coal would vet the proposed site-specific TDS standard with the Water Quality Standards Workgroup, after which DWQ will conduct the administrative proceedings for changing a water quality standard. If Alton Coal chooses to pursue a site-specific standard, we strongly encourage Alton Coal to work closely with DWQ staff throughout the process to help ensure that the resulting criterion meets state and federal regulations, and that the analytical and rulemaking processes proceed in the most timely and efficient manner possible.

As you are aware, the General Permit for Coal Mine Discharges will expire on April 30, 2012. If the DWQ decides to issue coverage beyond that date under an individual UPDES permit for the Alton facility, instead of continuing coverage under the General Permit, the effluent limit for TDS

under the individual permit will not exceed 1200 mg/l, until either a higher site specific standard is in place or the agricultural use is removed for this segment of Robinson Creek.

In addition to your permit writer, Mike Herkimer, additional staff are available to assist you as you evaluate options. For the TMDL development process, Ms. Amy Dickey can be reached at 801-536-4334 or adickey@utah.gov. For questions regarding water quality standards, please contact Chris Bittner at 801-536-4371 or cbittner@utah.gov. Otherwise, please feel free to contact me with further questions or concerns.

Sincerely,



Walter L. Baker, P.E.
Director
Utah Division of Water Quality

WB:CB:mc

- Enclosures: (4)
1. USEPA April 11, 2012 Impairment Letter
 2. USEPA Region 8 Q&A on natural and irreversible conditions,
 3. USEPA Smithee Letter on existing uses
 4. Pinto Creek Court Decision

cc: Kirk Nicholes, Alton Coal Development
John R. Baza, Director, Utah Division of Oil Gas and Mining w/o encl
Samantha Mary Julian, Director, Utah Energy Office w/o encl
Harry Barber, US Bureau of Land Management w/o encl
Amy Dickey, DWQ w/o encl
Mike Herkimer, DWQ w/o encl