Use Attainability Analysis  
Unnamed Tributaries to Dead Horse Creek  
In the Powder River Basin  
Response to Public Comments

On June 22, 2005, the Wyoming Department of Environmental Quality, Water Quality Division (WDEQ/WQD) solicited public comments on a “Use Attainability Analysis” (UAA) for three Unnamed Tributaries to Deadhorse Creek. The purpose of the analysis was to determine whether the drainages should retain their current Class 3B designation or be more appropriately designated Class 4B. The difference between these classes is that Class 3B waters are designated for aquatic life use protection while class 4B waters are not. In each case, the UAA concluded that a Class 4 designation was most appropriate.

The WQD received comments from the Wyoming Game and Fish Department, the U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency.

Wyoming Game and Fish Department

The proposed reclassification appears to be in an area where no water currently flows. There are only approximately 5 stream miles of Dead Horse Creek below the tributaries before it discharges into the Powder River. With the proliferation of CBNG wells (and possible future discharges) and the susceptibility of this area to flashy thunderstorm events, we are concerned that lesser water quality will reach the Powder River. If the change is approved, we request that assurances and stipulations be made that discharged water does not reach the Powder River.

DEQ Response: A UAA is performed to determine if the current stream classification matches the current uses of the waterbody, and if not, to appropriately reclassify the stream. Therefore, those comments regarding the potential discharge of produced water will not be addressed. The Game & Fish comments relate to permit considerations and conditions rather than to the designation of attainable uses and classification and can only be addressed through the permitting process.

US Fish and Wildlife Service

First of all, the Use Attainability Analysis (UAA) should state how much discharge will be produced and is expected to enter into the proposed reservoirs. The UAA should also describe if the discharge will be temporary or continuous and if the reservoirs are expected to be ephemeral or will contain water more permanently. If water is stored in the proposed reservoirs, aquatic life (benthic macroinvertebrates, aquatic invertebrates, and amphibians) will develop. Additionally, because of the aridity of the area, migratory birds (specifically waterfowl) will use the reservoirs. Therefore, aquatic life, even if it resides only temporarily, as well as migratory birds, should be protected.
Secondly, the UAA should state why other treatment or disposal options have not been considered and specify the constituents in the discharge that would exceed the 3B aquatic life criteria if the Class 3 designation remained. This is particularly important for selenium and chloride as there is the possibility that over time (due to evaporative concentration) that the selenium or chloride levels could reach very high concentrations and adversely affect wildlife if water is stored in any of the three proposed reservoirs.

In summary, the UAA needs additional supporting data to show conclusively that the reclassifications will not adversely affect wildlife, specifically migratory birds.

DEQ Response: A UAA is performed to determine if the current stream classification matches the current uses of the waterbody, and if not, to appropriately reclassify the stream. Therefore, those comments regarding the potential discharge of produced water will not be addressed. The Fish and Wildlife Service’s comments relate to permit considerations and conditions rather than to the designation of attainable uses and classification.

The potential impacts to wildlife do not need to be considered in this action because the level of protection for wildlife remains the same whether the stream is classified 3B or 4B. The only thing that changes is the level of aquatic life protection. Aquatic life in the channel cannot be harmed by this reclassification because there isn't any. The fact that an aquatic life use is not attainable is the basis for the reclassification.

US Environmental Protection Agency

It is the Water Quality Unit’s preliminary position that the UAA supports the proposed classification change, from Class 3B to Class 4B, for the three unnamed tributaries to the Powder River addressed in this analysis.

It is, however, our understanding that this watershed will undergo coal bed methane (CBM) development in the near future (e.g., the UAA notes that the development plan anticipates reservoirs in each of the tributaries). Where future CBM produced water discharges are of sufficient volume to alter the natural, ephemeral character of the waterbody, establishing or sustaining an aquatic life use, the created, existing use is to be designated in the water quality standards and protected. That is, even if a change to Class 4 is justified under current conditions for segments of these watersheds, these waterbodies will have to be returned to a Class 3 designation to protect the created aquatic life use if future CBM discharges alter their natural, ephemeral condition. Further, since ambient water quality data will be needed for future derivation of ambient-based, site-specific criteria, the DEQ should require monitoring of future CBM discharges for effluent parameters of concern, (i.e., those that would have a reasonable potential to adversely affect existing and designated uses applicable to these waters). This information, then, would be used to evaluate and/or derive the numeric water quality standards needed to ensure protection of the created aquatic community and any other uses assigned to these waterbodies.

On March 2, 2005, the DEQ discussed proposed revisions to Wyoming’s surface water quality standards at a public meeting before the Wyoming Water and Waste Advisory Board. The
proposal includes two new aquatic life use classifications applicable to situations such as this one where a proposed effluent discharge is likely to create an aquatic community. With the new classifications would come a process for assigning a level of protection appropriated for such created aquatic communities. In our view, the proposed 3D classification, applicable to protection of invertebrate communities created by effluent discharges to ephemeral streams and the proposed level of protection would be a good fit for this Dead Horse Creek situation. Our suggestion, therefore, is that this proposed reclassification of these Unnamed Tributaries to Dead Horse Creek to Class 4B be held until the newly proposed Class 3D is available.

DEQ Response: We appreciate EPA's conclusion that the designation of the affected waters as Class 4B is supportable under the federal regulations. We disagree with their recommendation to pursue the establishment of site-specific criteria at this time instead of a reclassification because of the proposed revisions to the state surface water program that are now in a rulemaking process. Even under the proposed rules, a waterbody in this circumstance would still be classified as 4B. The designation of an aquatic life use would not occur until the use has actually been attained and there is sufficient data to calculate appropriate water quality criteria.

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