0029

C/007/005 Incoming
cc: Jim
OK

Canyon Fuel Company, LLC.
Skyline Mine
A Subsidiary of Arch Western Bituminous Group, LLC

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April 4, 2008

RECEIVED
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DIV. OF OIL, GAS & MINING

Coal Regulatory Program
Attn.: James D. Smith – Permit Supervisor
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

RE: Equipment Abandonment – Hydrologic Impacts, Task ID #2950, Canyon Fuel Company, LLC Skyline Mine, C/007/005.

Dear Mr. Smith:

The following information is provided to address hydrologic concerns with abandoning equipment underground - Task ID #2950. The following discussion addresses the potential impacts to water (surface or groundwater), should any leave the mine in the future. A concern has been raised whether water quality in the area would be degraded, assuming the metal components in the abandoned equipment will corrode over time.

To put in perspective the amount of metal being abandoned in the current request, the following comparison is made. The 148 shields requesting to be abandoned weigh approximately 3,500 total tons. In 2007, approximately 1,360 total tons of metal roof support was left underground in the form of roof bolts, mesh, roof mats, plates, and cans. The approximate 1,360 tons of metal represents the mining activity using one (1) continuous miner (CM). Many times Skyline has used multiple CM units for development mining which would increase the amount of roof support used. Based on metal tonnage, the abandoned equipment equates to roughly 39 percent of the annual metal tonnage that is left underground in a (conservatively) normal year.

Based on coal seam lab analysis collected in 2007, the Pyritic Sulfur content within the coal is approximately 0.10 percent. Using simple calculations, approximately 0.931 pounds of Iron are taken out of the ground for each ton of coal produced. Assuming Skyline produces 3 million tons of coal per year, approximately 1,396 tons of Iron is extracted from the formation each year.

As stated in the Pines Tract FEIS (January 1999), "Mining equipment such as longwall mining machines, roof bolters, and continuous miners, is made of high quality steel alloy containing chromium. The metal is highly resistant to corrosion. Calculations of the corrosion potential of the steel used in long wall mining machines have been performed by the University of Utah Metallugy Department (BLM 1998s). They determined that it would take thousands of years for the metal to corrode away, and that the metal would need to be ground to a fine particulate for chromium to be dissolved. The University of Utah (BLM 1998a) report indicated that the general

conditions required to hasten the corrosion of this metal do not exist in the Utah coal mining environment."

The attached graph illustrates the Total Iron concentration of the Mine Discharge (UPDES-001) from 1982 through 2007. The Total Iron concentration of the Mine Discharge water has not increased in 25 years of operation. The average concentration of 0.43 mg/l is less than half of the 1.0 mg/l limit and a linear regression line of the data suggests the concentration of Iron is trending down over time. Other water monitoring sites contributing to Eccles Creek indicate the average iron of 0.43 mg/l is well within background concentrations, as the following sites indicate: VC-10, 0.39 mg/l; CS-3, 0.34 mg/l; CS-9, 0.91 mg/l; and CS-11, 0.88 mg/l, respectively. To qualify this discussion, any corrosion of the shield would increase the Dissolved Iron component of the Total Iron – where data is extremely limited. The graph however, still demonstrates no significant increase in the amount of Total Iron.

It is also important to mention that the equipment may not be in contact with water and will likely be in reduced atmospheric conditions that inhibit the corrosive potential. Also, due to the buffering potential of the surrounding carbonate rocks any acid generating potential would be minimized.

Based on the above information, Skyline believes the corrosive potential of the abandoned shields is small and has no net impact on the hydrologic system relative to Iron. Skyline believes there are no adverse hydrologic impacts to the environment with the proposed action of abandoning the longwall equipment cited in Task ID #2950.

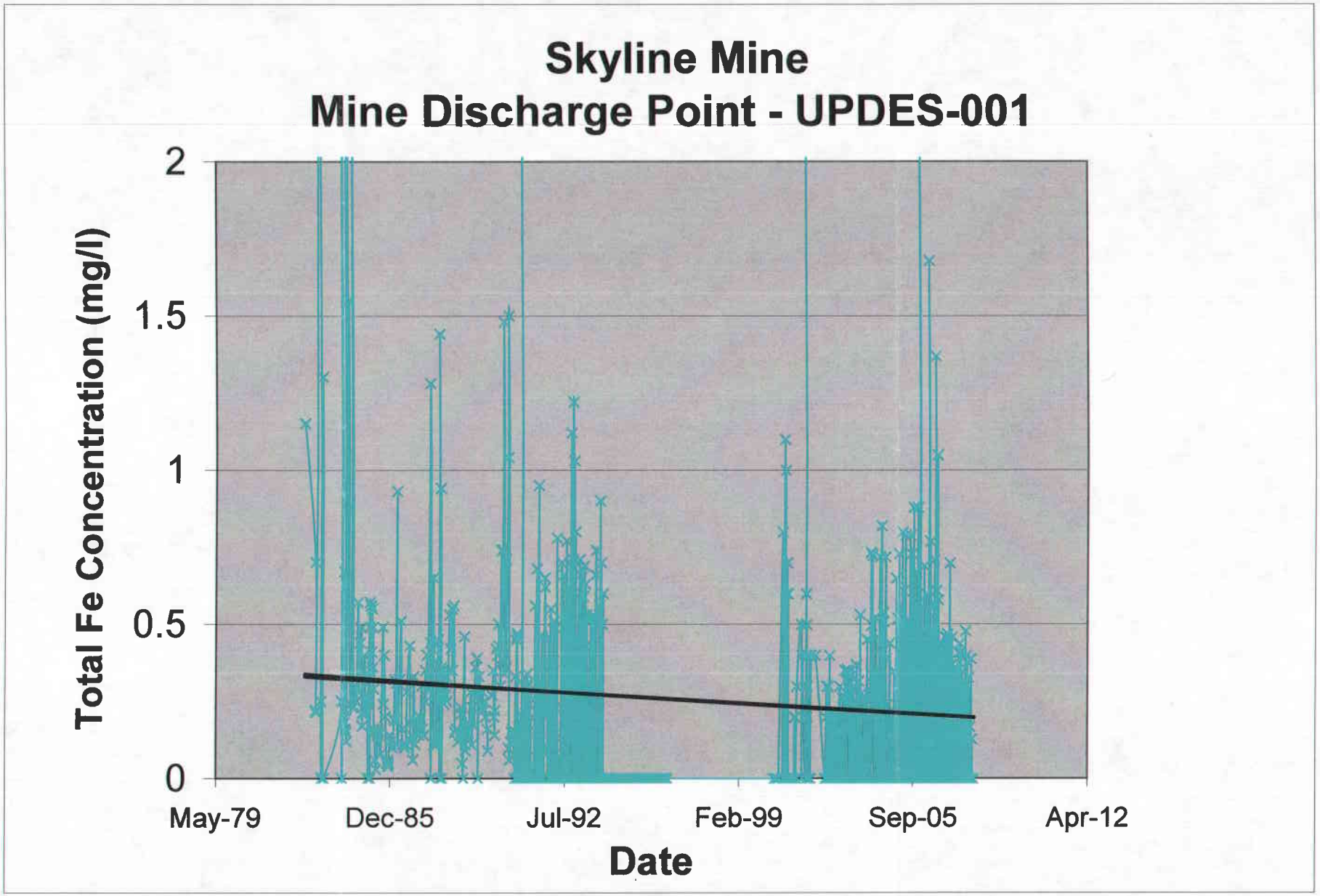
We hope this information adequately addresses the concerns.

If you have any questions, please give me a call at (435) 448-2636.

Sincerely:

Gregg A. Galecki
Environmental Engineer – Skyline Mine
Canyon Fuel Company, LLC.

attachment


Skyline Mine
Mine Discharge Point - UPDES-001
Total Fe Concentration (mg/l)
2
1.5
1
0.5
0
May-79
Dec-85
Jul-92
Feb-99
Sep-05
Apr-12
Date

April 4, 2008