

WATER QUALITY MEMORANDUM

OK

Utah Coal Regulatory Program

February 29, 2008

TO: Internal File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: *DD* Dana Dean, P.E., Senior Reclamation Hydrologist

RE: 2007 Third Quarter Water Monitoring, Canyon Fuel Company, Soldier Canyon Mine, C/007/0018-WQ-07-3, Task ID #2681

The Soldier Canyon Mine has been in temporary cessation since 1998.

Pertinent water monitoring requirement information is in the MRP in Section 7.31.2, summarized in tables 7.31-1 through 7.31-4. The tables and text explain what is currently required (under temporary cessation), and changes in the monitoring plan that will immediately take effect if the mine becomes active.

1. Was data submitted for all of the MRP required sites? YES NO

Springs –

During temporary cessation, the Permittee is not required to monitor any springs at the Soldier Canyon Mine.

Streams –

During temporary cessation, the Permittee is required to sample G-5, and G-6 flow, and the laboratory parameters outlined in Table 7.31-4 each quarter.

The Permittee monitored and reported the essential data for all streams as required during this quarter.

Wells–

During temporary cessation, the Permittee is not required to sample any wells at the Soldier Canyon Mine.

UPDES

There are three active UPDES sites at the Soldier Canyon Mine. They are all under the permit #UT0023680, and include outfalls 001 (MW-01), 002, and 003 (MW-02). The Permittee is required to monitor each UPDES site monthly.

The Permittee monitored and reported the essential data for all UPDES sites as required during this quarter. None of the UPDES sites recorded any flow during the period.

2. Were all required parameters reported for each site? YES NO

3. Were any irregularities found in the data? YES NO

The dissolved magnesium at G-5 was reported as 81.2 mg/L, 3.48 standard deviations above the average of 43.23 mg/L. There is no trend ($R^2 = 0.0223$), and a weak correlation to flow correlation to flow.

The sulfate at G-5 was reported as 300 mg/L, 4.19 standard deviations above the average of 112.04 mg/L. There is no trend ($R^2 = 0.0043$), and a weak negative correlation to flow.

Some routine Reliability Checks were outside of standard values. They were:

Site	Reliability Check	Value Should Be...	Value is...
G-5	Conductivity/Cations	> 90 & < 110	80
G-5	Ca/ (Ca + SO4)	> 50 %	32%
G-5	Mg/(Ca + Mg)	< 40 %	69%
G-5	Na/(Na + Cl)	>50 %	36%
G-6	Conductivity/Cations	> 90 & < 110	79
G-5	Ca/ (Ca + SO4)	> 50 %	43%
G-6	Mg/(Ca + Mg)	< 40 %	65%

The Permittee should work with the lab to make sure that samples pass all quality checks so that the reliability of the samples does not come into question. These inconsistencies do not necessarily mean that a sample is wrong, but it does indicate that something is unusual. An analysis and explanation of the inconsistencies by the Permittee would help to increase the Division's confidence in the samples. The Permittee can learn more about these reliability checks and some of the geological and other factors that could influence them by reading Chapter 4 of *Water Quality Data: Analysis and Interpretation* by Arthur W. Hounslow.

4. On what date does the MRP require a five-year re-sampling of baseline water data.

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The MRP does not contain a commitment for re-sampling of baseline water data.

5. Based on your review, what further actions, if any, do you recommend?

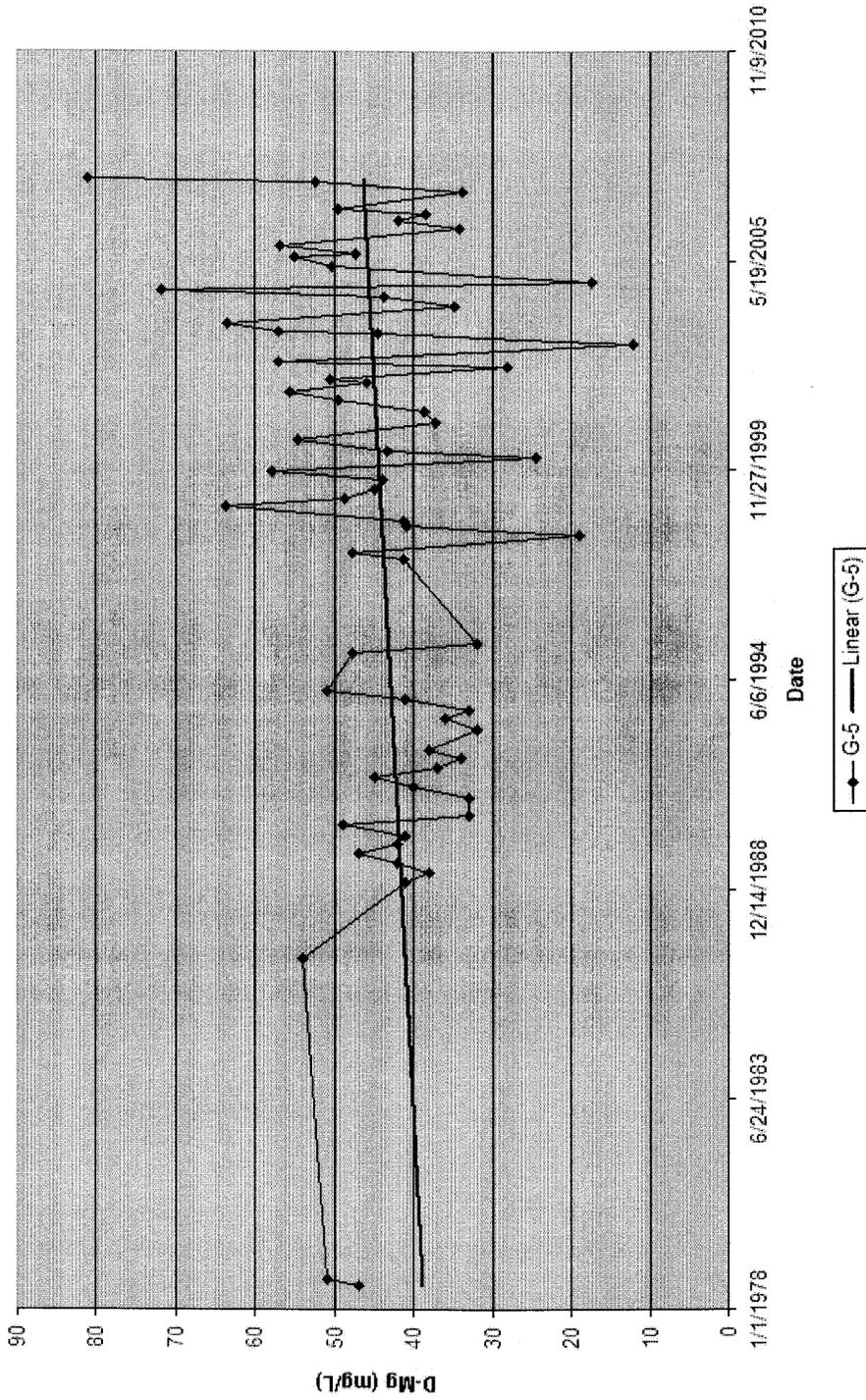
No further actions are required at this time.

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$R^2 = 0.0223$

Dissolved Magnesium



Sulfate

$R^2 = 0.0043$

