

June 18, 1987

TO: Coal File

FROM: Tom Munson, Reclamation Hydrologist *TM*

RE: Environment Assessment of the Existing Hydrologic Data  
Relating to the North Fork of the Right Fork (NFRF) of  
Miller Creek, New Lands Property, Plateau Mining Company,  
ACT/007/006, Folder #3, Carbon County, Utah

Two sources of data exist to describe the hydrologic characteristics of surface waters found in the North Fork of the Right Fork (NFRF) of Miller Creek. The major source of data is found in Plateau's Annual Water Quality Data Listings through 1986 for station ST-1. This station is located approximately 3.5 miles downstream from the headwaters of the NFRF of Miller Creek.

Six years of record have been recorded at this site. The average flow for this site over the period of record is .56 cfs or 251.3 gpm, with a high flow recorded on 6/13/85 of 2.0 cfs or 897.6 gpm, and a low flow recorded on 2/18/81 of .05 cfs or 22.4 gpm. At this same site the average electrical conductivity was 1334.7 umhos/cm with a high value recorded on 9/17/80 of 1900 umhos/cm, and a low value recorded on 6/22/82 of 370 umhos/cm. Fourteen discharge values were used to complete the average and seventeen conductivity values were used to complete the average.

The second source of data for the NFRF of Miller Creek is a stream survey completed on the upper reaches of the creek in section 18 and 17, T.15S, R8E. The purpose of this survey was to identify the gaining and losing reaches of the creek in these two sections. Flow measurements and conductivity readings were taken approximately every 1,000 feet. All inflows were identified and measured. If mining were to occur as identified in the New Lands Permit application, stations M-1 through M-8 would be the closest to the potentially subsided area. An average of the electrical conductivity readings in this reach of the creek was 391.3 umhos/cm for stations M-4, 6 and 8. The total flow at station M-4 was 21 gpm, station M-6 was 40 gpm, and station M-8 was 62 gpm. The data from each station in this portion of the creek identified each reach in this stretch of creek as a gaining reach. From station M-6 to M-8 was identified as gaining the most flow of +15 gpm.

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### Conclusions

It is my opinion that the data collected at the downstream station ST-1 does not adequately represent or define what is occurring in the upper reaches of Miller Creek. The variance in electrical conductivity, the abundance of springs, and the physical distance of 3.3 miles between the two sites does not reflect any similarities in data, or provide an avenue for assessment between the two stations.

### Recommendations

Both water quality and quantity of flow in the upper reaches of Miller Creek has not been well defined. I feel that a continuous monitoring station at M-8 on Map 29 must be installed, and that data must be collected on a continuous basis for at least two years to define the baseline hydrologic resources of this reach of Miller Creek. Additional stream surveys in July and September to define gaining or losing reaches would be appropriate to define baseflow recharge conditions in this reach. One year of baseline water quality parameters and baseline flow data from a continuous monitoring station at M-8 must be established for this reach of Miller Creek prior to any mining. The accompanying table identifies risk associated with various mining alternatives and potential impacts to the hydrologic resources from subsidence. The lack of baseline data to determine if changes to the hydrologic balance would occur from mining or during mining and any period thereafter makes it essential that this data is collected.

The following regulations apply as general requirements regarding the collection of baseline water quality and quantity to define hydrologic resources and any potential impacts to hydrologic resources from proposed mining.

- UMC 817.41(a)
- UMC 817.50(d)
- UMC 817.50(b)(1)(i)
- UMC 817.52(b)(1)(i)
- UMC 817.55(c) and (e)
- UMC 817.57(2)
- UMC 817.26(a)

djh  
cc: J. Whitehead  
R. Smith  
Attachment  
9486R/29-30

TABLE 1  
RISK ASSESSMENT

North Fork of Right Fork of Miller Creek

	Tension Cracks	Cliff Failure	Ground Movement
<u>Alternative I *</u>			
Stream Flow Loss	High	Moderate	Moderate
Spring Disruption	Moderately High	Moderate	Moderate
Water Quality Degradation	If intercepted by the mine-High) If not-Moderate)	Moderate	Low
<u>Alternative II *</u>			
Stream Flow Loss	Moderately High	Moderate	Low
Spring Disruption	Moderately High	Moderate	Low
Water Quality Degradation	Moderately High	Moderate	Low
<u>Alternative III *</u>			
Stream Flow Loss	Low	Moderate	Low
Spring Disruption	Moderate	Moderate	Low
Water Quality Degradation	Low	Moderate	Low

\* Alternatives are spelled out in the Division's memo dated June 15, 1987, titled "Review of Proposed Mine Development and Potential Subsidence Impacts", for Plateau Mining's New Lands property.