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INTEROFFICE MEMORANDUM

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**TO:** JANET BINNS  
**FROM:** ROB ZUBER *Rob D. ZL*  
**SUBJECT:** BOWIE NO. 1 MINE, HYDROLOGY REVIEW FOR TR-64  
**DATE:** OCTOBER 25, 2018

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Janet -

These adequacy comments for TR-64 (written for copy/paste into an adequacy letter) are based on the submittal from Stover and Associates, received 9/28/2018. My focus is on the hydrology portions of the submittal.

1. Per the Department of Army letter in your submittal, 1,000 cubic yards of riprap will be placed in the reconstructed East Roatcap Creek channel. This indicates that the channel will be an armored structure rather than a simulation of the pre-mining conditions (as indicated in Sheet 9 of 10 on the Reclamation map in the PAP, with plantings and some rocks). Please provide a design of the proposed riprap channel (with modeling results and design drawing) or provide an explanation as to why a design is not needed. This explanation should include:
  - a. The reason a design is not needed, citing the applicable DRMS rule, and
  - b. A quantitative analysis or qualitative discussion to show that the reconstructed channel will remain stable during large runoff events.
2. It is unclear why Map 8A-19, which indicates post-mining conditions, includes structures that will be removed, per the proposed revisions. These structures include Ponds W-1 and W-2 on the plan view as well as Pond W-1 and the culvert on Section A – A'. Please revise the map or explain why these structures are left on the map.

Let me know if you need me to elaborate on these comments.

Thanks,  
Rob