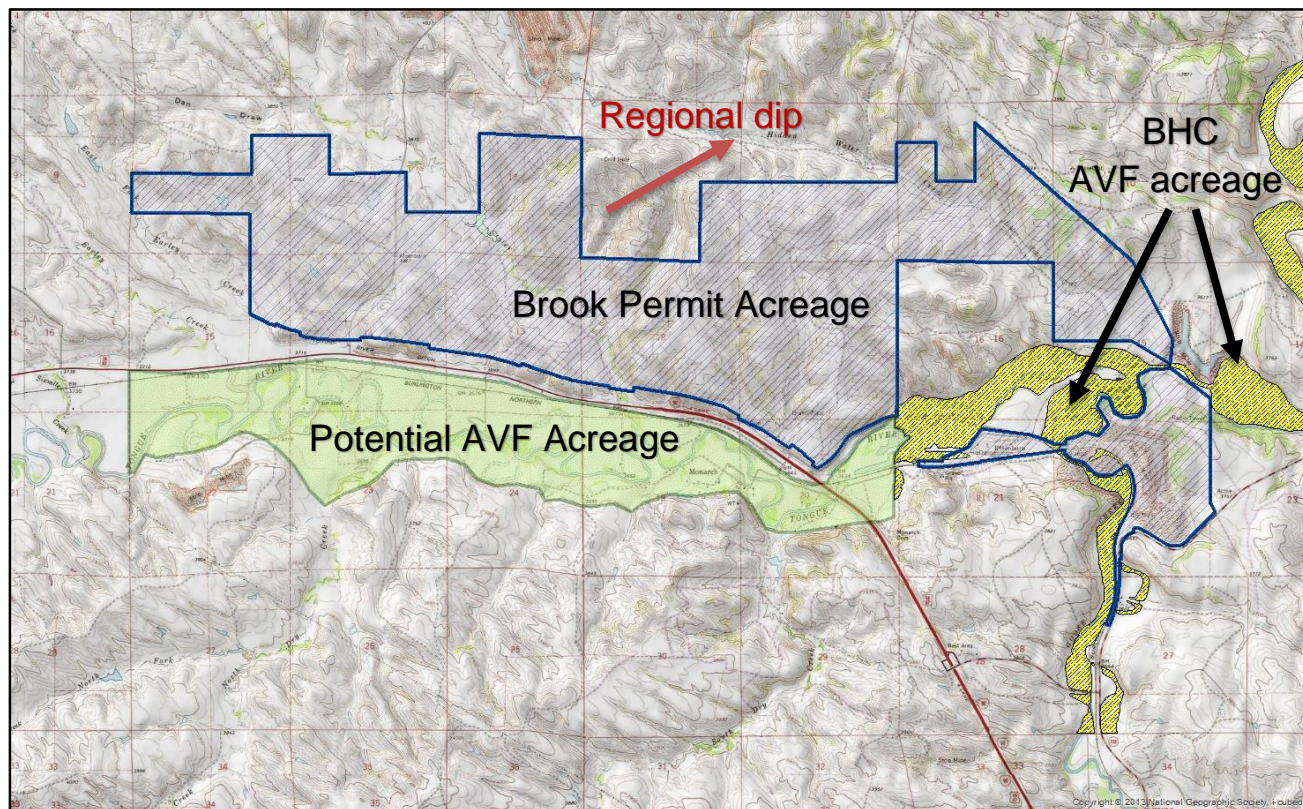


**MEMORANDUM**

**TO:** File, Ramaco Brook Mine TFN 6 2/025  
**FROM:** Bj Kristiansen, PG  
**RE:** Brook Mine AVF Determination, **Tongue River**  
**DATE:** February 10, 2016

The following narrative is created for the determination of Alluvial Valley Floor (AVF) potential outside the proposed permit boundary of the Brook Mine to determine if an AVF study is needed. The area under study is the primary channel and adjacent lands of the Tongue River. Much of the acreage under development is irrigated hay meadow maintained by the assortment of landowners having property on the Tongue River flood plain. A four and one-half mile stretch of Tongue River upstream from the AVF determination crafted for the Big Horn Coal Company (BHC) permit, No. 213, is the focus of this analysis (below).



The task of creating an AVF determination for the lands along the Tongue River depicted above is problematic, for two primary reasons: one, attaining landowner permission to map the potential AVF acreage is extremely challenging, and two, declaration of the AVF along Tongue River for lands within ½ mile of the proposed Brook Mine permit boundary may not be necessary by Regulation. A more detailed examination of these two issues is warranted.

The first issue related to AVF determination of the acreage along Tongue River and Adjacent to the Brook Mine proposed permit boundary is related to the new trespass law. An examination of the surface owner records along Tongue River indicate that the four miles of river valley upstream from the I-90 bridge has a total of 27 separate landowners that must be contacted prior to AVF studies. Each of these landowners will have to provide LQD written permission to conduct an AVF survey on their individual lots or parcels. Attaining permission from every landowner in order to map a potential AVF appears to be an impossibility at this time. Several of the landowners have indicated that data collection on their property for the purpose of evaluating the Brook Mine permit application will be fought with every means at their disposal. Also, the logistics of maintaining real-time contact with the landowners as their acreage is investigated is daunting, at best. Many landowners in Wyoming prefer to be present when governmental employees, such as LQD, will be on their property and personal contact before, during, and after examining their portion of an AVF is critical. For all intents and purposes, mapping the potential AVF on Tongue River adjacent to the Brook Mine permit boundary cannot be performed at this time. This leads us to the second point.

Declaration of the AVF along Tongue River for lands within ½ mile of the proposed Brook Mine permit boundary may not be necessary, as defined in Wyoming Rules and Regulations Chapter 3, Section 2, Alluvial Valley Floors and WS § 35-11-406(n)(v). These Statutes, Rules, and Regulations effectively allow the LQD Administrator to determine that no AVF exists within the permit boundary or adjacent to the permit boundary that will be affected by mining or ancillary disturbance. The Brook Mine permit application affirmatively maintains that no AVF will be affected by mining and in-depth LQD investigation corroborates that finding. In addition, there are no Prime Farmlands, as defined by the NRCS, within the proposed permit boundary. The geology of the proposed mining blocks is such that all subsurface disturbance is in rock units that dip away from the Tongue River valley. The Administrator may determine that no further AVF study on acreage adjacent to the Brook Mine permit boundary needs to be made since the AVF lands along Tongue River do not meet statutory requirements for further investigation. **It is the recommendation of this narrative that no further delineation of AVF acreage along Tongue River is needed at this time.** Should future mine and reclamation plan modifications indicate that adjacent AVF lands may be affected by mining, the AVF analysis must be reopened.

Bjarne Kristiansen, PG  
Natural Resources Program Principal  
LQD – District III