Attachment 6-3

Summary of Impracticability of Using a Trenchless Crossing for the Blackwater River

Mountain Valley evaluated whether crossing the Blackwater River using a trenchless crossing method would be practicable. Based on the information provided below, Mountain Valley concluded a trenchless crossing of the Blackwater River would not be practicable and thus has proposed to use a dry-ditch open-cut crossing method for this resource.

If a trenchless crossing were used, the deepest bore pit, located on the west side of the stream, is projected to be 39 feet deep. This depth is a result of the adjacent slopes, depth of the stream, scour requirements, and the size of the pipe. A bore pit of this depth would require removal of approximately 1,600 cubic yards of material. Assuming that the stockpile would be a conical shape with a natural angle of reposed of 1.5:1V, the stockpile footprint would be approximately 75 feet in diameter, with a height of approximately 25 feet. While this amount of spoil could theoretically fit in the 125-foot right-of-way, the site-specific analysis of the adjacent steep slope (>40% at some locations) indicates that the material could not be stockpiled in a stable manner. The material would need to be transported approximately 750 feet uphill to a flatter, more suitable area.

In order to excavate bore pits greater than approximately 20 feet deep, the contractor would need to establish a bench 20 feet below the existing ground and begin excavating the rest of the pit. Creating a bench would require additional soil removal when compared to the simple analysis used to calculate excavated bore pit volume discussed above—i.e., this additional material was not considered in the volume estimate for the bore-pit stockpile. The bore pit in question at the Blackwater River crossing would be 39 feet at its deepest on the west side of the stream, meaning that Mountain Valley would need to place an excavator on a bench 20 feet below existing grade to excavate an additional 19 feet of soil to reach the designed bore depth. Additionally, a safe slope would need to be constructed to access the bench, likely requiring more extensive excavation of the adjacent slope. All this material would need to be relayed up the hill due to the steepness of the slope and lack of available working space near the bore pits after this excavation occurs. Compounding these factors is the necessity of having an engineered shoring system for the bore pit since it would be more than 20 feet deep. Slide-rail shoring systems typically have a maximum height of 32 feet, so non-standard shoring methods would need to be employed. The installation of the bore pits and shoring system and the required winching would also double the estimated construction time at this crossing.

In addition, regardless of the crossing method selected, instream work will be necessary to permanently restore and stabilize the banks of the Blackwater River, which are rapidly eroding due to natural conditions unrelated to pipeline construction. Stabilization of the stream banks will reduce long-term sediment loads in the Blackwater River, and the stabilization work can be done efficiently and effectively after completion of an open-cut crossing.

The following pictures highlight the stream bank conditions following a severe storm in 2020.


PREFS
+037.052846° / -079.825811°
↑ 838ft
MAIL
MAP
03/11/20
N
11:10:00
LOG
-05
-01.7°
00
-00.6°
-05
00
+05
SHOW EXTRAS...
121° S59E 2151mils TRUE
WHAT'S NEW...
ZERO
A-B
CAL
E
120
150
NIGHT
1.0 X
S