To: Ned Pillersdorf
From: Jack Spadaro
Subject: Report of Initial Investigation Regarding Harless Creek Flooding, July 17, 2010
Date of Report: October 21, 2010

At your request I have conducted an investigation into the relationship between surface mining operations in the Harless Creek watershed in Pike County, Ky. and the severe flooding and damage to households in the watershed on July 17, 2010. I am a mining engineer and reclamation expert with more than forty years experience evaluating drainage control measures at surface and underground coal mines in West Virginia, Kentucky, Virginia, and surrounding states. I conducted the geotechnical engineering evaluation of the Buffalo Creek Coal Waste Dam Failure of February 26, 1972. I have conducted investigations of coal mining related flooding in the Guyandotte and Coal River Basins in West Virginia that occurred from 2001 through 2009. I have conducted an investigation into surface coal mining and its relationship to flooding in the Quicksand Creek watershed of Breathitt County, Ky. that occurred on May 9, 2009. I also supervised the geotechnical engineering evaluation of the Martin County Coal Slurry Dam Failure which occurred on October 11, 2000 near Inez, Ky. My resume is attached.

I conducted a mine site investigation of the Cambrian Coal Company surface mining operations at the headwaters of Harless Creek on August 9, 2010. The investigation was conducted with Fred Coleman, a landowner from Harless Creek; Billy Ratliff, Assistant Director, Kentucky Division of Mine Reclamation and Enforcement (DMRE); Charles Holbrook, Manager DMRE, Pikeville Regional Office and mine inspectors from the DMRE Pikeville Regional Office. Also participating in the inspection were officials from Cambrian Coal and Mr. Shelton, attorney for Cambrian Coal.

I also conducted an aerial investigation of the mining operations in a helicopter over-flight of the Harless Creek area on August 11, 2010. I have provided you with photographs and a DVD documenting the on-site investigation and over-flight.

In addition to conducting the on-site investigations I have reviewed the inspection and enforcement history of the Cambrian Coal operations at the headwaters of Harless Creek. The DMRE has issued citations to Cambrian Coal for failing to reclaim areas on six increments on the mined areas. DMRE issued a citation to Cambrian for mining without a permit. Copies of the related citations are attached. The Notices of Non-Compliance document the failure by Cambrian Coal to reclaim large areas of the surface mining operations over the past months and years. During the investigations of August 9 and 10, I observed valley fill areas and the related upslope areas that had not been reclaimed. There was no grass or other vegetation to retard water flow on the mined area slopes. Erosion gullies were in evidence across the slopes of the mined areas and valley fills. The company had equipment re-grading the washed out exposed slopes and removing sediment, rocks, and debris from sediment ponds that had filled with the materials and overtopped causing debris flows downstream. Landslides and debris and mud flows trailed from the edges of the mined areas into the down-slope tree areas, and in some instances the mud and debris flows extended all the way to the Harless Creek stream channel. It is apparent from the physical evidence at the surface mining operations that runoff from the Cambrian Coal operations caused significant damage to the houses in the downstream areas of Harless Creek on July 17, 2010.

The Notices of Non-compliance issued by DMRE illustrate the deliberate efforts by Cambrian Coal to circumvent the requirements of Kentucky law and regulations regarding the reclamation of land

disturbed by surface mining operations. The vast areas left un-reclaimed created an extremely unstable area of exposed soil and rock surfaces that could not retard runoff during rainfall periods. There was virtually no water retained on the slopes of the mines. Consequently, the surface mining operations funneled the rain waters and substantially increased the flow of water into Harless Creek on the evening of July 17, 2010.

The cumulative effects of exposed un-reclaimed soil and rock slopes, landslides, ponds filled with washed-out sediment, and no vegetation whatsoever on the mined areas of the Cambrian Coal operations were major contributing factors in the flooding on Harless Creek on July 17, 2010. The area being mined without a permit was one of the most severely eroded areas on the mine sites and contributed significantly to the flooding. All of these factors combined to exacerbate the flooding on Harless Creek on July 17, 2010.

I have not completely finished my inquiries into the causes of the flooding and will provide additional information at a later time.

Jack Spadaro 10/21/2010