



## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215  
Denver, CO 80203

Wendy Naugle  
Engineer/Hydrogeologist  
Colorado Dept. of Health and Environment  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530

February 28<sup>th</sup>, 2018

Technical Memorandum Re: Observations of Commodore 5 Workings January 30-31, 2018

The Division of Reclamation, Mining and Safety (DRMS) has been conducting underground investigations and data collection at the Nelson Tunnel/Commodore Mine Complex since 1999. Over that period of time the DRMS has been involved in investigating the mine working hydrology in an attempt to understand how groundwater moves through the mine system becoming contaminated with heavy metals. During the last 19 years, deterioration of the underground workings has been observed periodically.

All underground workings experience some level of deterioration over time requiring maintenance to maintain integrity of the mine openings and provide safe passage for workers involved in data collection and investigation. The Commodore 5 Level is the only pathway providing access to the northern end of the mine workings and the various mine pools formed along the Nelson Tunnel. Additionally, the Commodore 5 Level is unique in that it also functions as the hydraulic head control for the upper mine pool as excessive impounded water is allowed to flow over the Upper Pool collapse through the Commodore 5 Level and back into the Nelson Tunnel.

Over the last 5 to 6 years, DRMS has observed what appears to be an increasing rate of deterioration within the Commodore 5 Level workings. That accelerated rate of deterioration is not surprising considering the last significant rehab and maintenance of the workings occurred in 2004. The majority of that rehab has exceeded its serviceable life span, and is now beginning to fail. The failure is resulting in an accumulation of debris along the access route making travel difficult and potentially unsafe. The area between stations 30+00 and 40+00 appears to be experiencing the most deterioration.

It is important to note that continuing to allow the mine workings to deteriorate without performing maintenance soon will probably result in a much greater future cost and effort, and the possibility that the Commodore 5 Level may not adequately function as a pressure release for impounded water.

Respectfully Submitted,

Jeff Graves  
Program Director/Geological Engineer  
Inactive Mine Reclamation Program

