COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

Interoffice Memorandum

October 19, 2023

From: Leigh Simmons
To: Dustin Czapla

Subject: La Plata Project NOI (Permit No. P-2023-012)
Miller Objection

As you requested, I reviewed the material you compiled and shared pertaining to the NOI application, P-2023-012, and the correspondence associated with Thomas Miller's objection.

The applicant is proposing to drill 7 core holes at three locations. These holes will not be cased, and will not be completed as wells. Each hole will be plugged and abandoned before the next hole is drilled. Other than the drilling fluid used to drill each hole, no water will be either added to or taken from the hole. Hole depth is given as 984' on the application form, and in the correspondence it is noted that each hole will be drilled at an angle of 60° from horizontal. Based on the coordinates given, the surface elevations of the three proposed holes are between 9,740 and 10,000 ft.

The Miller well has a surface elevation of around 9,200 ft and is drilled to a depth of 202 ft. The well is situated in the La Plata River valley, with very steep topography in the surrounding area. It has been established that the well is completed in igneous rock, and as such the water it produces must come from fractures rather than the pore spaces that hold water in a typical sedimentary "aquifer".

The horizontal separation between the core holes and the well is significant; at least a quarter of a mile, based on Thomas Miller's assumptions.

The surface watershed upstream of the Miller well is at least 8,000 acres of steep alpine terrain. The proposed core holes are downstream of the Miller well watershed. It is acknowledged that a groundwater divide need not correspond exactly to a surface water divide, however in the absence of evidence to the contrary it is reasonable to assume that they are closely related.

Fractured igneous rock is difficult to characterize, and groundwater flow through fractures is difficult to model. Based on the available information it is not possible to state categorically either that there is, or is not, a hydrologic connection between the proposed core holes and the Miller well, however there is certainly no reason to suppose that such a connection exists. Furthermore, if a hydrologic

connection between the core holes and the well does exist, it is reasonable to assume that the connected fractures do not contribute a significant amount of the total water produced by the well.

The plan proposed by the applicant complies with the requirements of Rule 5.4.2, which is designed to be protective of the hydrologic balance, and takes account of the uncertainties inherent in exploration drilling. Specifically, Rule 5.4.2(2) calls for water bearing fractures in consolidated rock to be sealed as they are encountered, and a commitment to this is made in the NOI application.

I understand, based on an email sent by Stephen Glass (representing the applicant) to the Division on September 19, 2023, that the applicant has committed to baseline sampling of the Miller well, as well as ongoing monitoring of the well for a year following the cessation of drilling.

To summarize my opinion, Thomas Miller's objection should not prevent the Division from approving NOI P-2023-012 for the following reasons: barring unforeseen circumstances, the potential impact on the prevailing hydrologic balance of the proposed drilling is negligible; there is a small, but non-zero, chance of impacts to the Miller well; the potential impacts to the prevailing hydrologic balance, and to the Miller well specifically, have been mitigated through a commitment to compliance with the requirements of Rule 5.4.2; and the applicant has committed to baseline sampling and ongoing monitoring of the Miller well, which is not required by the Rules.