



AIPG ILLINOIS / INDIANA SECTION SPRING MEETING ANNOUNCEMENT

April 6, 2022 – 5:30 to 8:30 PM CST

**Cantigny Golf – Red Oak I Room
27w270 Mack Road, Wheaton IL 60189**

Free Admittance & Parking – Complimentary Sandwich & Salad Buffet

~ ~ ~ Topic and Keynote Speaker ~ ~ ~

**“Gold Exploration Near the FAD Shaft,
Ruby Hill District, Eureka, Nevada”**

**Matt Rhoades, CPG, RG
National 2022 President
American Institute of Professional Geologists**

Please refer to the attached project abstract and speaker biography.

You can visit www.cantignygolf.com for directions and information. Enter Cantigny Golf from Mack Road and follow the entry drive to the Clubhouse parking lot. The Red Oak I Room is inside the Clubhouse.

This event is free and open to the community practicing in the geological sciences in Illinois and Indiana (non-member donations are requested). A light dinner and cash bar will be provided.

Please RSVP to Craig McCammack at cmccammack@v3co.com or (630) 936-0332



Gold Exploration near the FAD Shaft, Ruby Hill District, Eureka, Nevada

By Matthew Rhoades, CPG, RG

Oxidized massive sulfides were first discovered in 1864 in the Ruby Hill area outside of Eureka, Nevada. Although the polymetallic deposit proved to be very high-grade, the metallurgical processes to refine the ore had not yet been developed and nearly ten years went by before the processes were developed for ore refinement. The ore proved to be of such a high-grade and so extensive that several smelters were built in Eureka to process the ore at the bottom of the hill.

The massive sulfide deposit at Ruby Hill developed in the late 1800s and early 1900s was originally near-surface. It is a classic carbonate replacement deposit (CRD). In these types of deposits, there is a molecule-by-molecule replacement of the host dolomite or limestone by altering fluids circulating in the system. These types of deposits are well-known to lack large alteration halos or mineral assemblages that allow explorationist to 'vector-in' to the deposit. Famous examples of this type of deposit include Leadville, Colorado, Gillman, Colorado, and Bingham, Utah. The primary base metals are lead and zinc with copper, as well as precious metals silver and gold.

The ore deposit at Ruby Hill was exhausted in the early 1900s and miners looked elsewhere in the near vicinity to locate additional ore bodies. These efforts proved fruitful as additional, smaller ore bodies were located at Richmond Hill, Adams Hill and Mineral Point.

The complicating factor affecting the full development of the Ruby Hill deposit was the fact that it is truncated on its northern side by the northwest striking Ruby Hill normal fault. The down-dropped, hanging wall block occurs north of the fault where corresponding stratigraphic units have been down-dropped 2500 feet. Early miners had thought that the Ruby Hill Fault had restricted the flow of ore-forming fluids and the fault was a pre-mineralization feature that precluded any alteration or mineralization north of the fault. In the 1930s and up through the 1950s exploration geologists were able to drill deep enough on the north side of the fault to locate the offset ore body at-depth. In the late 1940s and early 1950s, the FAD Shaft was constructed to a depth of 2500 feet where it intersected the high-grade ore body.

With the development of exploratory drifts off of the main FAD Shaft at a depth of 2250', an unknown fault, the Martin Fault, was intercepted. Once the drift was advanced through the fault, very large volumes of water from an unknown aquifer source flowed into the shaft over the period of a few days and flooded it to a depth of 1200 feet. Numerous attempts were made to dewater the shaft, but at the time, the technology did not exist to remove such copious amounts of water from such tremendous depths.

A round of drilling several holes from the surface around the FAD Shaft in the 1970s confirmed the presence of the high-grade ore body. Several feasibility studies have been completed over the years to address the challenge of developing the ore body and bringing it into production.



Matt Rhoades is a consulting geologist with nearly 40 years of professional experience. He has a BS in Geology from University of Missouri-Kansas City and an MS in Structural Geology from Washington State University. Matt also has an MBA from the University of Phoenix in Denver. Matt started his career in environmental consulting and transitioned into hydrogeology and thence into groundwater resources. From developing groundwater resources, he transitioned to mine water issues and mining. Matt has worked throughout the western US as well as seven countries in South America, Mexico and Canada. He is the former State Geologist for New Mexico. Matt was recently the President and CEO of United Battery Metals Corp., a junior Canadian mining company developing vanadium resources on the Colorado Plateau. He is a registered or professional geologist in six states. Matt is now the National 2022 President for the American Institute of Professional Geologists (AIPG).

