

**STATEMENT OF BASIS
CS MINING, LLC COPPER BENEFICIATION FACILITIES
Ground Water Discharge Permit No. UGW010014**

I. Description of Facilities

CS Mining, LLC is expanding its copper mining and beneficiation operation in Beaver County, Utah. This expansion includes new plant facilities that will be supported by process water ponds and a new tailings impoundment. The proposed tailings facility will be located in the SW ¼ of Section 5, SE ¼ of Section 6, NE ¼ of Section 7 and the NW ¼ of Section 8, T. 27 S., R. 11 W., SLBM. The three process water ponds will be located in the NW ¼ of Section 7, T. 27 S., R. 11 W., SLBM.

The facilities will store solutions and tailings as part of CS Mining's new copper cathode production process. Copper-bearing ore will be crushed and ground. Magnetite will be separated from the copper-bearing ore by magnetic separation for sale off-site. The non-magnetic material will be processed in a flotation circuit to separate acid-leachable (primarily oxides) ore from sulfide ore. Flotation agents are added to the ground ore in an aerated water suspension. The floatable ore, primarily sulfides, is dried and sold as concentrate. The ore that does not float, the underflow from the flotation tanks, contains oxide copper minerals that are acid soluble. The ore from the flotation process will be further processed in an acid leaching circuit that will produce a pregnant leach solution (PLS), that will be stored in a new PLS process water pond. This solution will be processed with solvent extraction and electrowinning, to produce copper cathodes. The barren process liquid remaining after solvent extraction is called raffinate and will be stored in a new raffinate process water pond, to be recycled for reuse in the acid leach process. One or two raffinate ponds will be constructed under this permit. All process water ponds will be double-lined to allow for detection of any leaks that may develop through the upper liner. In double-lined ponds, the upper liner serves to break the hydraulic head that the impounded liquid imposes on it, proportional to the depth of the liquid; therefore any leakage that may collect on the lower liner will not have significant hydraulic head that would tend to drive it through any holes that may develop in the lower liner. Under these conditions, it can be reasonably assumed that leakage through the upper liner at flow rates less than 200 gallons per acre of liner per day will not result in significant leakage through the lower liner into the subsurface.

Tailings from the flotation process will undergo leaching with recycled raffinate solution and sulfuric acid solution in a series of seven agitated tanks, followed by separation of solids and liquids in a counter-current decantation (CCD) circuit. Pregnant (metal-bearing) solution from this circuit is sent to the PLS pond for eventual processing with solvent extraction and electrowinning to produce copper cathodes. Tailings removed at the end of the CCD circuit process will be a slurry consisting of approximately 54% solids suspended in a liquid similar in composition to PLS.

CS Mining will construct a new Intermediate Tailings Disposal Facility (ITDF) to receive tailings from the acid leach circuit, in two small canyons east of the milling operations. Two dams will be constructed across these drainages to create an impoundment with a capacity of approximately 3 million cubic yards. Dam construction borrow will come from unconsolidated alluvium and weathered bedrock in both drainages and from the bedrock ridge between the two drainages. The ITDF is anticipated to have a life of 4 to 8 years and will allow ongoing production while design and permitting of a larger tailings impoundment is carried out.

encountered water at 96' bgs in 2008. Both these wells were completed in bedrock, which the driller described as "dolomite", but which is more likely to be igneous rock considering the mapped surficial geology. Monitor wells drilled in 1996 near the existing and proposed mill facilities, located approximately ½ mile west of the ITDF site, were completed in intrusive igneous bedrock (granodiorite/quartz monzonite) and had an average depth to ground water of 167 feet bgs.

Ground water sampled in well WW-3 had total dissolved solids (TDS) content of 1410 mg/l; water from well WW-6 had TDS content of 1760 mg/l. Trace metals were below the ground water standards for these samples. Existing evidence, therefore, suggests that ground water in this area is Class II.

The project site has an arid climate. Average annual precipitation for Milford, UT, located approximately 9 miles southeast of the site, is 9 inches per year.

III. Tailings Characteristics

Bench-scale acid leach testing was carried out on a composite bulk sample from the flotation tailings pond in 2013. The test replicated expected operating conditions. Tailings and sulfuric acid were added to the first of six agitated tanks, and the tailings were moved sequentially through the tanks with acid added to each tank to maintain the necessary pH. This test generated a tailings slurry comparable to that which would be pumped to the ITDF during mill operation. Samples of this tailings slurry were analyzed for chemistry and mineralogy; however, liquids were not separated from the slurry for analyses. The slurry samples were dried to a moisture content of less than 0.1% and the dried samples were subjected to extraction with deionized water in the meteoric water mobility procedure (MWMP) and the synthetic precipitation leaching procedure (SPLP). The MWMP calls for equal masses of the sample and deionized water to be placed in a vertical column with the water placed on top of the sample, so it infiltrates through the sample and is collected at the bottom of the column. The resulting liquid is used in the analysis for selected solutes. Therefore, the analytical results from the MWMP should conservatively represent the concentrations of solutes that will be present in the tailings water stored in the ITDF. The SPLP results can be used to identify solutes that would be present in the tailings water, but it does not use a 1:1 ratio of sample to deionized water and so the solute concentrations from this extraction would not accurately mimic the concentrations in the tailings water.

Analytical results from these procedures are reported in Appendix C of CS Mining's permit application and summarized in Table 2 of the application. These results indicate that the tailings water would have TDS content of approximately 2400 mg/l, with significant content of calcium (550 mg/l) and sulfate (1500 mg/l); pH neutral to slightly alkaline, and trace metals at non-detectable levels except for antimony, which had an level of 0.019 in the MWMP extract solution as compared to the ground water standard of 0.006 mg/l.

After the mill start-up and disposal of tailings in the ITDF, tailings water will be sampled from the tailings water return line at the plant terminus of that line. Samples will be collected daily and analyzed for pH and electroconductivity. Following plant start-up and stabilization of the milling process, or after one month of operations (whichever comes first) a return-water sample will be collected and analyzed for pH, electroconductivity, TDS, major ions (Na, Ca, Mg, K, Cl, SO₄), alkalinity, nitrate + nitrite, metals from Table 1 of UAC R317-6, gross alpha and Ra 226 + 228. Additional sampling will be done at monthly intervals for 90 days and quarterly thereafter.

define background water quality, within the first year after permit issuance. Existing samples may be included in these eight, provided the same analytical methods were used. Following background monitoring, WW-3 shall be monitored semi-annually and the new wells and WW-6 monitored quarterly.

V. Closure Plan

One year prior to the final placement of tailings in the ITDF, CS Mining shall submit for DWQ review and approval a closure plan for the facility that is protective of waters of the state. The plan shall be based on an evaluation of the tailings for potential to leach contaminants, site conditions and the existing containment structures at the facility.