

Response to Comments

Corona Twin Peaks Mine Remediation Project Work Plan.

James Creek Valley Land Company, LLC (JCVLC) submitted two comments on the Corona Twin Peaks Mine Remediation Project Work Plan.

JCVLC Comment #1. JCVLC contends that the proposed subsurface chemical amendment system that is intended to reduce metal loading from the Corona Mine Adit to surface waters is an innovative technology that is unlikely to be effective in improving water quality.

Response. Central Valley Water Board staff acknowledges that the pilot scale subsurface chemical amendment system is an innovative technology. However, there are many strategies for treating acid mine drainage, and over the past 10 to 15 years the emphasis for sulfate removal from wastewater streams has moved away from the traditional chemical treatment, or “active treatment”, to innovative technologies such as biological treatment using sulfate reducing bacteria. They offer advantages such as high metal removal at low pH, stable sludge, very low operation costs, and minimal energy consumption. Sulfate-reducing passive bioreactors have received much attention lately as promising biotechnologies for AMD treatment and are discussed in more detail in the attached memorandum.

Central Valley Water Board staff believes the proposed technology is promising and has been shown to be effective in a number of other trials. However, without conducting the pilot scale testing of the subsurface chemical amendment, it is premature to declare that this innovative technology is unlikely to be effective in improving water quality. If the technology works, it will be cost effective technology that can be applied at the present mine site which has limited physical areas for treatment and no power source.

JCVLC Comment #2. JCVLC contends that the infiltration trench improvements and revegetation of the mine waste piles will diminish the limited available funds but have little or no beneficial impact on water quality.

Response.

Infiltration Trenches Improvements: Central Valley Water Board staff does not concur with this assessment. Prior to construction of the infiltration trenches in the late 1990s, the Upper (Boiler House) Adit was discharging directly to surface waters. Reported flow rates and water quality data associated with the pre-infiltration trench conditions are shown below in Table 1.

Table 1. Boiler House Adit Discharge Conditions (prior to 1998).

	Flow (dry season)	Flow (wet season)	Iron (mg/L)	Mercury (ng/L) dry/wet season	Nickel (mg/L)	pH dry/wet season
Boiler House Adit	2 gpm	40-50 gpm	50-120	15/60	50-120	6/5.5

Since 1998, drainage from the Boiler House Adit has been routed to the infiltration trenches and is not discharging to surface waters. Therefore, the infiltration trenches do provide a significant benefit to water quality and without the improvements to the infiltration trenches, which are

planned to increase their capacity, and to provide a more robust collection system and additional monitoring to help forecast any potential problem areas, these discharges likely would reoccur in the future.

Revegetation of Mine Waste Piles: As reported in the Remediation Work Plan, existing data collected by USGS (2007) and EnviroGeo (2007) show that metal laden particulates are present in sediment downstream from the Corona and Twin Peaks mines. Data collected by USGS (2007) and EnviroGeo (2007) also showed that drainage from the calcined tailings was capable of transporting metals including mercury and nickel off site. Therefore, the revegetation is designed to prevent this discharge in the future and improve the water quality downstream.

Regional Board staff concurs with the contention in the Remediation Work Plans that; “Minimizing erosion and the amount of the drainage will improve water quality in Kidd and James creeks by preventing the associated sediment and metals (including nickel and mercury) from entering the surface water. Increasing the amount of vegetative cover will also minimize the creation of airborne dust from the mine waste piles.”