

## **Suction Dredge Hearing**

State Water Resources Control Board

June 12, 2007

Kyle Leach  
13197 Westhome Road  
Grass Valley, CA

I have lived in the Sierra Foothills for 10 years and I have been vacationing in the Sierras all my life. One of the best things about living here is the rivers. We live near the South Yuba, Bear and American Rivers and I've gotten to know a lot of really great places. I and my family and friends enjoy swimming, fishing, hiking, boating and occasionally gold prospecting.

Living in this area I have grown interested in the history of gold mining and I have spent considerable time studying mining's toxic legacy- Arsenic, lead and mercury in waste piles, tailings and in the rivers throughout the foothills-extending down into the reservoirs, delta and San Francisco Bay. It is known that many tons of mercury were lost to the environment during the gold mining era, much of which remains in the rivers and streams of the Sierras, polluting the sediment and water and poisoning the fish. I recently went snorkeling in the Deer Creek downstream of Nevada City with an amateur gold sniper. Using hand tools to remove the sediment, we were able to find several grams of free mercury and mercury-gold amalgam in cracks, potholes and crevices in the bedrock. I have heard of people finding pounds of mercury this way in the South Yuba and other local rivers.

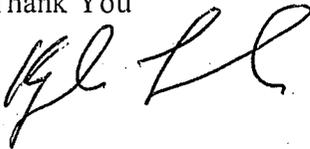
The biggest concern I have about suction dredging is that the dredgers are looking for gold in exactly the same places where mercury is currently buried beneath the sediment. Mercury and gold are the heaviest elements in the river environment and naturally migrate to the sediment bedrock interface. The action of the dredge picks up the large globs of mercury and breaks them into smaller and smaller particles. As much as 30 to 50% or more of the mercury picked up by the dredge is blown out the back of the sluice box as "flowered mercury" which adheres to clay or colloids in the water column and becomes very mobile. This mercury has more surface area and a mercury oxide surface coating and is also known as "active mercury" because it has a high potential to be converted to methylmercury, the most toxic form of mercury. When mercury particles are transported to the right environment with low oxygen concentrations and high biological activity, iron and sulphur reducing bacteria convert active mercury to methylmercury which enters the food chain and is biomagnified from micro-invertebrates to insects to small fish and up to game fish such as Bass and Brown Trout. Concentrations of over 1 part per million mercury have been found in larger fish in Sierra Foothills reservoirs, compared to the State action level of 0.3 ppm.

Most of the lower reservoirs and some stretches of rivers in our area now have fish consumption warnings- Do not eat more than one meal of fish a week, or none at all for pregnant women or small children. I have two kids who are at the age where I will soon take them fishing for the first time. Depending on where we go, I may have to tell them that the first fish they ever catch is poisoned with mercury and they can't eat it.

The State Water Resources Control Board has the mandate to protect the quality of the waters of the State of California. As a scientist, I believe that more study is needed to better understand the full effects of suction dredging on the environment, the fate and transport of mercury, the mercury methylation process, bioaccumulation, impacts to wildlife and the extent of human health effects.

It may or may not be possible to regulate suction dredging in the streams and rivers of the Sierras. The State Water Board should err on the side of caution. The evidence strongly suggests that suction dredging remobilizes mercury, which enters the food chain and is harmful to wildlife and people who eat fish. At a minimum, we need to know where the mercury hot spots are, and what areas to protect or clean up. If specific suction dredging methods are not proven to be safe for the environment, this method of gold mining should be banned from all sensitive waterways.

Thank You

A handwritten signature in black ink, appearing to be 'G. L. L.', written in a cursive style.