

# Draft

## PROBLEM STATEMENT

### BODIE CREEK

#### Total Maximum Daily Load (TMDL) For Metals

East Walker River Hydrologic Unit, Mono County

Updated October 2002

## OVERVIEW

Section 305(b) of the Clean Water Act (CWA) mandates biennial assessment of the nation's water resources, and these water quality assessments are used to identify and list those waters that are not achieving water quality standards. The resulting list is referred to as the 303(d) list. The CWA also requires states to establish a priority ranking for these impaired waters and to develop and implement TMDLs. A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and it allocates the maximum pollutant load from point and non-point sources such that those standards will be met.

Bodie Creek was first included on the 1991 Section 303(d) list for impairment due to metals. The data that supported this listing was a Bureau of Land Management (BLM) 1990 Draft Resource Management Plan and Environmental Impact Report (RMP/EIR). The RMP/EIR cited mercury and arsenic exceedances in the creek and described historical mining impacts in the Bodie State Historic Park (BSHP) vicinity. Stream surveys that were conducted in the watershed in the late 1980's identified grazing impacts, as well.

## PROJECT AREA DESCRIPTION

### Geography

Bodie Creek is located in the Bodie Hills, a group of mountains east of the Sierra Nevada at the western edge of the Great Basin. The Bodie Hills, encompassing approximately 390 square miles, occupy portions of Mono County, California, and Lyon and Mineral counties, Nevada. Elevations range from 6000 to 10,236 feet, with most of the area between 7,000 to 9,000 feet. There are two principal watersheds in the Bodie Hills: the southern periphery drains into the Mono Lake Basin, while the majority of the watershed drains northeasterly into the East Walker River and then to Walker Lake in Nevada.

### Waterbody Description

Bodie Creek flows northeastward from its headwaters near Bodie State Historic Park, joins Rough Creek in Nevada approximately 8 miles downstream, then flows to the East Walker River. Streamflow in upper Bodie Creek is seasonal, with most flow occurring during the late fall through spring. Snowmelt runoff provides most of creek's seasonal flow. In most years, surface flow turns to subsurface flow approximately one mile downstream of Bodie State Historic Park. Water normally returns to surface flow where the creek flows over a bedrock outcropping several miles upstream of the California/Nevada state line.

### Land Use

The majority of the land around Bodie Creek is managed by the BLM. The Bodie State Historic Park (BSHP), designated in 1962, is located near the headwaters of Bodie Creek

# Draft

and is managed by California State Parks. BSHP consists of the remains of the town of Bodie, a gold mining boomtown whose heyday was in the late 1800's. The town is preserved in a state of "arrested decay," with a museum/visitor center and picnic area, in addition to the remnants of the town--homes, churches, stores, hotels and mining equipment. The small rural communities of Bridgeport, Lee Vining and Mono City are the nearest populated areas.

The area surrounding BSHP has been designated by the BLM as an Area of Critical Environmental Concern (ACEC). The 5,935 acre ACEC covers the zone of influence on historic and associated visual resources that deserve special recognition and management.

Private landholdings exist primarily downstream of the BSHP. The majority of private land is used for livestock grazing and recreation. Recreational activities in the area include hiking, biking, camping and off-road vehicle use.

## 303(d) LISTING BASIS

### **Beneficial Uses**

According to the 1995 Water Quality Control Plan for the Lahontan Region (Basin Plan), the beneficial uses of Bodie Creek are:

- Municipal and Domestic Supply (MUN)
- Agriculture Supply (AGR)
- Groundwater Recharge (GWR)
- Water Contact Recreation (REC-1)
- Non-contact Water Recreation (REC-2)
- Commercial and Sportfishing (COMM)
- Cold Freshwater Habitat (COLD)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Spawning, Reproduction, and Development (SPWN)

### **Water Quality Standards**

The Basin Plan specifies water quality standards that are protective of beneficial uses for all waters in the Lahontan Region, including Bodie Creek. Narrative and numeric water quality standards that are applicable to this TMDL include those for chemical constituents, non-degradation, pH and toxicity. Other relevant water quality objectives include California Toxics Rule (CTR) aquatic life protection criteria and Department of Health Services/USEPA primary and secondary drinking water standards. Specific water quality objectives for Bodie Creek are not defined in the Basin Plan.

### **Beneficial Use Impairment**

Bodie Creek has been affected by Comstock-era mining and later livestock grazing. In 1992, the State Water Resources Control Board's Toxics Substance Monitoring Program (TSMP) data indicated silver concentrations in fish liver tissue were above the statewide 95<sup>th</sup> percentile "Elevated Data Level". The sampling location for the TSMP fish tissue data was approximately 2.5 miles downstream of the majority of mining occurrences centered around BSHP. Mine tailings are present in the creek near Bodie

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State Park. The creek supports threatened Lahontan cutthroat trout, which may be impacted by elevated metals concentrations or pH in the creek.

## Status

Due to limited and dated information on metals concentrations in Bodie Creek, initial work on this TMDL is focused on assessing the current nature and magnitude of the metals impairment. This will be accomplished by reviewing available data, performing field reconnaissance and sampling for metals in the water column and sediments of Bodie Creek. Once the impairment has been adequately evaluated, subsequent work will focus on assessing potential natural and anthropogenic sources of pollutants, and determining pollutant reduction alternatives.

## Schedule

<b>Deliverable/Milestone</b>	<b>Date</b>
Data review/determine add'l data needs	July 2002
Summarizing field observations, data, and recommendations	Early December 2002
Conduct sampling/data analysis/impairment assessment	June –October 2003
Stakeholder meeting	November 2003
Draft Source Analysis	May 2004
Technical TMDL	August 2004
Implementation Plan	March 2005
Final TMDL to Regional Board	June 2005

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