

# Gold King Mine Release

San Juan River and Lake Powell, San Juan and Kane Counties, Utah



The Gold King Mine in Colorado following the release of contaminated water.

## Latest News

Utah Department of Environmental Quality (UDEQ) scientists believe that the highest levels of contaminants associated with the release have passed through the San Juan River. Water test results suggest that the plume carrying heavy metals presents little health risk to recreational users as it has been settled and diluted on its way to Lake Powell.

The Utah Department of Health (UDOH) and the San Juan County Health Department find that recreational exposures in the San Juan River are not expected to result in adverse health effects. Recreational users are recommended to bring their own drinking water and not rely on filtration/purification of river water. Visitors to the river, especially

in the case of children, should refrain from ingesting the water and are also encouraged to minimize skin contact with dirt and sand along the river. People who come in contact with sediment should rinse off promptly after contact, and as always, wash hands well with soap and water before eating.

Read the entire [press release](#) from 8-19-15

## **Background**

On August 5, 2015, the Environmental Protection Agency (EPA) began clearing material from the opening of the Gold King Mine north of Silverton, Colorado, to install a pipe to pump water out of the mine. At 10:30 A.M., the material blocking the tunnel entry suddenly gave way and a large buildup of water that had collected behind the debris was released into Cement Creek, a tributary of the Animas River. Based on measurements from a stream gauge on Cement Creek, approximately 3 million gallons of water was released from the mine.

Mine wastewater is a problematic legacy of mining in the West. When mine water comes into contact with pyrite (iron sulfide) that is exposed from mining activities, it reacts to form sulfuric acid and dissolved iron. This acid leaches other heavy metals, like copper, lead, and zinc, from the rock. These toxic metals can collect in large pools inside the mines or leak into nearby waterways. With an estimated 55,000 abandoned mines in the western United States, the contamination of rivers and streams from mine water discharge isn't unique to the Gold King Mine, although it generally does not occur on such a massive scale.

The Utah Department of Environmental Quality is maintaining a [webpage](#) with detailed, up-to-date information on the release and the efforts of Utah's State agencies to assess the immediate and long-term impacts. Click [here](#) to learn more.

## **Human Health Evaluations**

These health evaluations were prepared by the Environmental Epidemiology Program within the Utah Department of Health based on data collected by UDEQ.

### **Health Evaluation for River Sediment from 9-02-15**

Data collected by UDEQ on 8-15-15.

Exposure to contaminants in sediment from the San Juan River on 8-15-15 is not expected to result in adverse health effects for recreational users.

- No contaminant exceeded screening values.
- Recreational users should carry their own drinking water and not rely on filtering or purifying river waters.
- Visitors to the river, especially in the case of children, are encouraged to minimize skin contact with dirt and sand along the river.
- People who come into contact with river sediment should rinse off promptly after contact and, as always, wash hands well with soap and water before eating.

### **Health evaluation from 8-19-15**

Data collected by UDEQ on 8-17-15.

Exposure to contaminants in the San Juan River on 8-17-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, five contaminants exceeded screening values: [aluminum](#), [arsenic](#), iron, [lead](#), and [manganese](#).
- However, estimated recreational exposure doses did not exceed health-based guidelines.
- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.
- Visitors to the river, especially children, are encouraged to minimize skin contact with dirt and sand along the river.
- People who come into contact with river sediment should rinse off promptly after contact, and as always, wash hands well with soap and water before eating

For agricultural use, no dissolved metal contaminants, sulfates, nitrates/nitrites or pH values exceeded established livestock or irrigation guideline values.

### **Health evaluation from 8-16-15**

Data collected by UDEQ on 8-15-15.

Exposure to contaminants in the San Juan River on 8-15-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, seven contaminants exceeded screening values: aluminum, arsenic, barium, iron, lead, manganese, and vanadium.
- However, estimated recreational exposure doses did not exceed health-based guidelines.
- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.

For agricultural use, no dissolved metal contaminants, sulfates, nitrates/nitrites or pH values exceeded established livestock or irrigation guideline values.

### **Health evaluation from 8-15-15**

Data collected by UDEQ on 8-14-15.

Exposure to contaminants in the San Juan River on 8-14-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, eight contaminants exceeded screening values: aluminum, arsenic, barium, copper, iron, lead, manganese, and vanadium.
- However, estimated recreational exposure doses did not exceed health-based guidelines.
- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.

For agricultural use, no dissolved metal contaminants, sulfates, nitrates/nitrites, or pH values exceeded established livestock or irrigation guideline values.

### **Health evaluation from 8-14-15**

Data collected by UDEQ on 8-11-15.

Exposure to contaminants in the San Juan River on 8-11-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, seven contaminants exceeded screening values: aluminum, arsenic, barium, copper, iron, lead, and manganese.
- However, estimated recreational exposure doses did not exceed health-based guidelines.

- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.

For agricultural use, no dissolved metal contaminants, sulfates, nitrates/nitrites, or pH values exceeded established livestock or irrigation guideline values.

### **Health evaluation from 8-13-15**

Data collected by UDEQ on 8-10-15.

Exposure to contaminants in the San Juan River on 8-10-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, six contaminants exceeded screening values: aluminum, arsenic, barium, iron, lead, and manganese.
- However, estimated recreational exposure doses did not exceed health-based guidelines.
- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.

For agricultural use, no dissolved metal contaminants exceeded established livestock or irrigation guideline values.

### **Health evaluation from 8-12-15**

Data collected by UDEQ on 8-8-15 and 8-9-15.

Exposure to contaminants in the San Juan River on 8-8-15 and 8-9-15 is not expected to result in adverse health effects for recreational users.

- For recreational use of the San Juan River, five contaminants exceeded screening values: aluminum, arsenic, iron, lead, and manganese.
- However, estimated recreational exposure doses did not exceed health-based guidelines.
- Recreational users are recommended to bring their own drinking water. Do not rely on filtration/purification of river water.

For agricultural use, no dissolved metal contaminants exceeded established livestock or irrigation guideline values.

## Health Evaluations

- [Health Evaluation \(Sediment\) 9-02-15 \(Data collected on 8-15-15\)](#)
- [Health Evaluation 8-19-15 \(Data collected on 8-17-15\)](#)
- [Health Evaluation 8-16-15 \(Data collected on 8-15-15\)](#)
- [Health Evaluation 8-15-15 \(Data collected on 8-14-15\)](#)
- [Health Evaluation 8-14-15 \(Data collected on 8-11-15\)](#)
- [Health Evaluation 8-13-15 \(Data collected on 8-10-15\)](#)
- [Health Evaluation 8-12-15 \(Data collected on 8-08-15 and 8-09-15\)](#)

## Contaminant

### Information

- [Aluminum ToxFAQs](#)
- [Arsenic ToxFAQs](#)
  - Arsenic ToxZine
- [Barium ToxFAQs](#)
- [Copper ToxFAQS](#)
- [Lead ToxFAQs](#)
  - [Lead ToxZine](#)
- [Manganese ToxFAQS](#)
- [Vanadium ToxFAQS](#)

### Additional Links

- [Utah Department of Environmental Quality](#)
- [Environmental Protection Agency](#)
- [Colorado Department of Health & Environment](#)
- [New Mexico Environment Department](#)