

**SITUATION REPORT
INCIDENT COMMAND POST GOLD KING
GOLD KING MINE RELEASE INCIDENT
U.S. ENVIRONMENTAL PROTECTION AGENCY**



Gold King Mine adit stabilization (9/24/2015)

Subject: EXECSUM / SITREP #43
Gold King Mine Release Incident
San Juan County, Colorado
Latitude: 37.8945 Longitude: -107.6384

From: Situation Unit, Incident Command Post Gold King
Date: 29 September 2015
Reporting Period: 0700 22 September 2015 through 0700 29 September 2015
Website: www.epa.gov/goldkingmine



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EXECUTIVE SUMMARY

Situation Summary

United States Environmental Protection Agency (U.S. EPA) Incident Command Post Gold King (ICPGK) is comprised of U.S. EPA Regions 8, 6 and 9.

Highlights, Key Updates/Changes

- ICPGK is operating under a 2-week Incident Action Plan (IAP) covering the period of 22 September 2015 through 06 October 2015.
- Preparations continue for treating mine discharge over the winter.
- Incident Command (IC) is ending outreach with private well owners and will not accept sampling requests after 30 September 2015.
- ICPGK is focusing on residential sampling data reviews and sending letters to residents.
- U.S. EPA Region 9 is assisting the Navajo Nation (NN) Emergency Operations Center (EOC) in establishing an Incident Command System (ICS).
- ICPGK continues to monitor relations with the Navajo Nation.

Objectives

- Ensure health and safety of the public and responders.
- Continue implementation of private well sampling and water deliveries.
- Establish strategy for private wells exceeding MCL for drinking water.
- Continue coordination with federal, state, tribal and local stakeholders.
- Continue management of mine water discharge.
- Continue mine dump and portal stabilization.
- Assessment of sediment impacts.
- Implement transition plan to reduce river and sediment sampling.
- Implement alert and notification plan during mine site operations.
- Explore real time monitoring options.
- Continue water and sediment sampling along the Animas and San Juan Rivers.
- Continue to make personnel adjustment for right-sizing the organization.

Command Emphasis

For this operational period, the ICPGK command emphasis is:

- Safety of responders and the public
- Visitors to the mine site are required to go through a safety briefing. See mine site safety plan.
- Personnel entering Southern Ute Tribal lands must be escorted by a Southern Ute staff member.
- Ensure information flow between ICP and Stakeholders is transparent.

The metrics provided in this Situation Report represent quantities reported for work completed from 0700 22 September 2015 through 0700 29 September 2015. Press releases are presented in Attachment 1.



1.0 BACKGROUND

The Gold King Mine (GKM) near Silverton, Colorado is an historic gold mine at an elevation of approximately 11,300 feet above mean sea level. The mine discharge includes acidic mine drainage that is a contributor of heavy metals into the Cement Creek drainage of the Animas River watershed. The GKM workings have been inaccessible since 1995 when the mine portal collapsed.

On 5 August 2015, up to three million gallons (estimated) of water containing sediment and dissolved metals was suddenly released from the Gold King Mine adit. This water discharged into Cement Creek which feeds into the Animas River, and eventually flows into the San Juan River.

The ICPGK (located in Durango, Colorado) continues to assess and mitigate effects from the release.

2.0 OPERATIONS

2.1 Mine Operations

A summary of mine operations is presented below.

- Continued monitoring of water quality at 6 locations twice daily. Associated metrics are summarized below.

Parameter	Units	Quantity							
		September 2015							Period Average
		22	23	24	25	26	27	28	
Flow Rate	gpm	554	595	593	605	598	599	599	592
pH Adit Discharge	SU	3.47	3.89	3.59	3.56	3.59	3.48	3.55	3.59
pH Discharge to creek	SU	5.25	4.68	*	*	*	*	*	4.97

Note: * Not reported

- Performed treatment of mine discharge via adding lime and sodium hydroxide to creek water.
- Completed first coat of shotcrete outside the mine adit/portal for stabilization. Shotcrete stabilization continues.
- Completed the removal of affected rock from Cement Creek.
- Constructing ponds at Gladstone.
- Regraded the area of the former Gold King Mine sediment ponds.
- Continued developing a plan for removing and managing sediment from the Gold King Mine.



Figure 1 - Stabilized Adit Portal (9/25/2015)



- Collected water and sediment sample from Gold King Mine for analyses. Provided split samples to La Plata County’s contractor for analyses; also provided video of sample collection to La Plata County’s contractor.
- Collected sample of dry pre-mixed shotcrete.
- Removed sediment/solids from Red & Bonita ponds and discontinued flow of Gold King Mine discharge to Red & Bonita ponds.

On 23 September 2015 a small volume of treated mine water overtopped the dike at the treatment ponds and increased turbidity in a localized are of Cement Creek. As a result, U.S. EPA followed the 7 September 2015 Notification Plan and made an Alert 1 notification to downstream stakeholders because the event was unlikely to cause physical or safety concerns downstream.

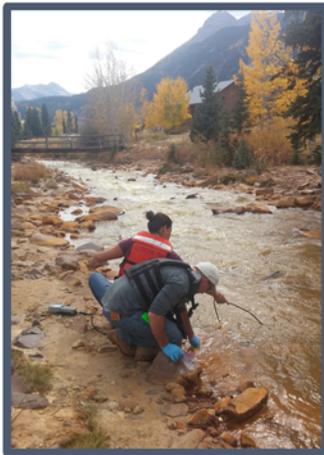


Figure 2 – Animas River Monitoring and Sampling Silverton, CO (9/28/2015)

2.2 River Sampling

Operational activities for surface water and sediment sampling are summarized below. Sample quantities are based on the SCRIBE database, and include field samples and quality assurance/quality control (QA/QC) samples.

		Table 2 - Operations Sampling Summary							
Matrix	U.S. EPA Region	Quantity							Cumulative
		September 2015							
		22	23	24	25	26	27	28	
Surface Water Samples	8	0	0	9	0	0	0	8	599
	6	5	4	5	4	0	0	5	518
	9	0	0	5	0	0	0	5	286
	Total	5	4	19	4	0	0	18	1,403
Sediment Samples	8	1	0	8	0	0	0	8	311
	6	5	4	5	4	0	0	5	522
	9	0	0	5	0	0	0	5	232
	Total	6	4	18	4	0	0	18	1,065

2.3 Private Well Sampling

U.S. EPA has collected and analyzed samples from drinking water wells located near the Animas River and San Juan River. There has been no sampling of private drinking water wells in U.S. EPA Region 9.

Private well samples that have metals concentrations greater than the Maximum Contaminant Levels (MCLs) and were collected from private drinking water wells during the first sampling event were sampled a second time to confirm the analytical results. In Region 8, the second round of samples at a given property were collected from the tap. Residents that have MCL exceedances have been notified.

A summary of private drinking water well sampling is presented below.



Table 3 – Private Drinking Water Well Sampling Summary										
Matrix	U.S. EPA Region	Quantity								
		September 2015								Cumulative
		22	23	24	25	26	27	28		
Private Drinking Water Well Samples Collected (from SCRIBE, includes QA/QC samples)	8	3	3	5	1	2	0	0	420	
	6	2	0	0	0	0	0	0	289	

Table 4 – Private Drinking Water Well Primary MCL Exceedances										
Matrix	U.S. EPA Region	Quantity								
		September 2015								Cumulative
		22	23	24	25	26	27	28		
Wells containing contaminant concentrations above MCLs during second sampling event	8	0	0	0	0	0	0	0	5	
	6	0	0	0	0	0	0	0	1*	

*Note: One well in Region 6 exceeded the MCL for lead and after further assessment by the State of New Mexico and the U.S. EPA, it was determined that the exceedance was not related to the GKM incident.

2.4 Mitigation Activities

No public water systems are currently affected by the release or response operations.

ICPGK continues to coordinate and deliver bottled drinking water to 5 residences in Region 8. Other public support activities completed are summarized below.

Table 5 – Completed Public Support (Cumulative)			
Activity	U.S. EPA Region	Qty. (gal)	Qty. (hay bales)
Potable Water Deliveries	8	105,600	
Livestock / Agricultural Water Deliveries	8	133,770	
	6	1,104,990	
Agricultural Food Deliveries	6		244

Table 6 – Ongoing Public Support							
Activity	Entity	22-28 Sep 2015			Cumulative		
		Deliveries (each)	Qty. (gal)	Qty. (hay bales)	Deliveries (each)	Qty. (gal)	Qty. (hay bales)
Livestock / Agricultural Water Deliveries	U.S. EPA R9	0	0		13	218,400	
	BIA	0	0		7	975,888	
Agricultural Food Deliveries	U.S. EPA R9	2		768	17		6,528

2.4.1 Water Tanks

On or about 15 August 2015, 15 black steel tanks (16,500 gallon capacity each) were delivered by the ERRS contractor to certain locations on the Navajo Reservation as part of the response to the Gold King Mine release incident. Prior to this period, 7 tanks had been removed, 4 tanks were removed on 23 September 2015 and 4 tanks remain on the Navajo Reservation.

2.4.2 Other Mitigation Activities

ICPGK continues to work with U.S. EPA Region 8 Regional Incident Command Team (RICT) and U.S. EPA Headquarters EOC regarding individual properties potential sediment issues.



3.0 PLANNING

3.1 Environmental Unit

At the request of La Plata County, the EU provided flow data (including historical information) and field monitoring parameters from the mine. The information was provided to La Plata County, San Juan Basin Health, CDPHE, Colorado OEM and the Ute Indian Tribe.

EU is preparing letters containing analytical results for private properties where U.S. EPA collected sediment and/or drinking water samples. Additional resources were added to the ICP EU to address this task.

3.2 Resources

The table below summarizes staffing numbers for the federal entities and agencies active in the response.

Location	Agency / Entity	September 2015						
		22	23	24	25	26	27	28
Mine	U.S. EPA	4	4	4	4	3	3	3
	USCG	6	6	6	8	6	6	6
	U.S. EPA Contractors	27	28	29	24	24	24	24
	Other	8	2	0	0	0	0	0
ICPGK	U.S. EPA	18	16	17	18	14	16	18
	U.S. EPA Contractors	11	9	5	7	7	11	11
	USCG	0	0	0	0	0	0	0
	Other	4	3	3	0	1	0	2
U.S. EPA Region 6	U.S. EPA	0	0	0	0	0	0	0
	U.S. EPA Contractors	8	8	8	8	6	8	8
	USCG	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
U.S. EPA Region 9	U.S. EPA	1	1	1	1	1	1	1
	U.S. EPA Contractors	0	0	0	0	0	0	0
	USCG	3	3	3	3	3	3	3
	Other	0	0	0	0	0	0	0
Total		90	80	76	73	65	72	76

USCG = U.S. Coast Guard; Other = federal, state, local and tribal entities

4.0 FINANCE

4.1 Estimated Response Costs to Date

The table below summarizes estimated costs for the response.

U.S. EPA Region	U.S. EPA Cumulative Expended Payroll	U.S. EPA Cumulative Expended Travel	U.S. EPA Cumulative Other Charges	U.S. EPA Cumulative Contractors Cost	Total Cumulative Costs
8	\$1,022,962	\$216,213	\$46,109	\$6,025,334	\$7,310,618
6	\$572,213	\$140,350	\$12,989	\$2,522,963	\$3,248,515
9	\$627,360	\$96,500	\$-	\$1,910,951	\$2,634,811
Total	\$2,222,535	\$453,063	\$59,098	\$10,459,248	\$13,193,944



4.2 Estimated Burn Rates

The table below summarizes current estimated burn rates for the response.

U.S. EPA Region	Estimated Average Daily Burn Rate
8	\$131,500
6	\$39,950
9	\$53,562
Total	\$225,012

5.0 LOGISTICS

As of 28 September 2015, the following personnel needs remain to be filled:

- There is no identified backfill/replacement for the Incident Commander.
- There is no identified backfill/replacement for Operations Section Chief.

6.0 SAFETY

Safety performed the tasks summarized below during this reporting period.

- Safety revised/updated initial safety briefing presentation for current operations.
- Safety performed field inspections of: mine operations, river sampling operations and residential well sampling.
- Provided safety briefings to visitors and reporting personnel.

No recordable injuries or illnesses reported.

7.0 PUBLIC INFORMATION

7.1 Community Engagements and Public Events

Community engagements and public events that occurred during this period include:

- 22 September 2015
 - Animas River Stakeholders meeting.
 - U.S. EPA call with local, state and Tribal stakeholders to discuss conceptual monitoring.
 - Senator Ellen Roberts' office hosted a community meeting for local stakeholders.
- 23 September 2015: DCPHE and Silverton officials toured the mine site.

A summary of community engagements is provided below:

Description	U.S. EPA Region	September 2015						
		22	23	24	25	26	27	28
Community Engagement	8	3	1	0	0	0	0	0
	6	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0

7.2 VIPs/Congressional Visits

7.2.1 Occurred Events



Visits that occurred during this period include:

- 22 September 2015: Department of Justice and U.S. EPA Region 8 attorney visited the mine site.
- 23 September 2015: DCPHE and Silverton officials toured the mine site.

7.2.2 Anticipated Events

Known site visits and public events scheduled for the next 14 days are summarized below.

Planned Event	Anticipated Date
Southern Ute leadership visits the mine site.	9/29/2015
LaPlata County to collect adit water samples at the mine site.	9/29/2015
U.S. EPA was requested to speak at a Colorado Water Operators Association Conference	10/1/2015

7.3 Call Center

U.S. EPA Headquarters continues to operate a national call center (844-607-9700) and forward requests for sampling of private drinking water wells to ICPGK Operations via the PIO.

8.0 LIAISON

Federal, regional, local and other entities participating in the response are summarized below.

- U.S. EPA
- U.S. Coast Guard (USCG)
- U.S. Geological Survey (USGS)
- U.S. Army Corps of Engineers (USACE)
- U.S. Bureau of Reclamation (USBOR)
- U.S. Fish and Wildlife Services (USFWS)
- Colorado Office of Emergency Management (OEM)
- Colorado Department of Public Health and Environment (CDPHE)
- New Mexico Environment Department (NMED)
- New Mexico (NM) Department of Health
- NM Office of the State Engineer
- NM Department of Game and Fish
- State of Utah
- State of Arizona
- City of Durango
- La Plata County
- San Juan County
- San Juan Basin Health Department
- County of San Juan – New Mexico
- Southern Ute Indian Tribe (SUIT)
- Navajo Nation

9.0 SOURCE OF ADDITIONAL INFORMATION

For additional information, refer to www.epa.gov/goldkingmine.



**ATTACHMENT 1
PRESS RELEASES**



PRESS RELEASE # 1

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 22, 2015: Gold King Mine Data, September 22, 2015
(<http://www2.epa.gov/goldkingmine/gold-king-mine-data-september-22-2015>)

Surface water and sediment concentrations are now below recreational screening levels. The river system as a whole is being maintained at pre-event conditions.

It is important to keep in mind that metal concentrations in water and sediment may fluctuate. Fluctuations occur because of weather and other events that change water flow rates or volume. They can also occur if sediments are accumulating at a higher than normal rate at a particular site, before being washed away by the next high water event.

As the response to the mine release transitions to long-term evaluations, EPA will continue to monitor for any abnormal occurrences of metal concentration exceedances of risk-based screening levels.

EPA sediment samples collected on 9/16 and 9/17 from locations along the Animas Rivers.

- Open or download the data file:Region 8 Sediment Summary Table 09212015 (XLSX) (1 pg, 29 K)



PRESS RELEASE # 2

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 23, 2015: Gold King Mine Data

(<http://www2.epa.gov/goldkingmine/gold-king-mine-data-september-23-2015>)

Surface water and sediment concentrations are now below recreational screening levels. The river system as a whole is being maintained at pre-event conditions.

It is important to keep in mind that metal concentrations in water and sediment may fluctuate. Fluctuations occur because of weather and other events that change water flow rates or volume. They can also occur if sediments are accumulating at a higher than normal rate at a particular site, before being washed away by the next high water event.

As the response to the mine release transitions to long-term evaluations, EPA will continue to monitor for any abnormal occurrences of metal concentration exceedances of risk-based screening levels.

EPA surface water samples collected on 9/17 from locations in the Animas and San Juan Rivers.

- Open or download the data file: Region 6 Surface Water Summary Table 091702015-a (XLSX) (1 pg, 54 K)



PRESS RELEASE # 3

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 23, 2015: EPA Announces Gold King Mine Water Treatment System for Winter 2015-16 (<http://www2.epa.gov/goldkingmine/september-23-2015-epa-announces-gold-king-mine-water-treatment-system-winter-2015-16>)

(Washington, D.C.) -- The U.S. Environmental Protection Agency (EPA) announced today that a portable, temporary treatment system will be located in Gladstone, CO to continue treating water discharged from the Gold King Mine during winter 2015-16. This system will replace temporary settling ponds constructed by the EPA in August 2015.

The transition to the portable treatment system is necessary as winter temperatures at the mine site (elevation 10,500 feet) can reach -20F, making it unsafe to manually treat water at the mine site. The schedule calls for the treatment system to be operational by Oct. 14, 2015. EPA's contractor, ER LLC, awarded a subcontract Sept. 22, 2015 to Alexco Environmental Group (US) Inc. to complete the work.

This system will treat the approximately 550 gallons per minute (gpm) of water that continue to flow from the mine, including the discharges related to ongoing work in the mine to stabilize conditions. The system is designed to handle up to 1,200 gpm. The objective of the treatment system is to neutralize the mine discharge and remove solids and metals. Although the Gold King Mine discharge is just one of many into Cement Creek, the treatment will remove a portion of the metal loading to Cement Creek.

The EPA continues to evaluate data to determine the impact of the Gold King Mine on water quality.



PRESS RELEASE # 4

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 24, 2015: Gold King Mine Data, September 24, 2015
(<http://www2.epa.gov/goldkingmine/gold-king-mine-data-september-24-2015>)

Surface water and sediment concentrations are now below recreational screening levels. The river system as a whole is being maintained at pre-event conditions.

It is important to keep in mind that metal concentrations in water and sediment may fluctuate. Fluctuations occur because of weather and other events that change water flow rates or volume. They can also occur if sediments are accumulating at a higher than normal rate at a particular site, before being washed away by the next high water event.

As the response to the mine release transitions to long-term evaluations, EPA will continue to monitor for any abnormal occurrences of metal concentration exceedances of risk-based screening levels.

This data submission presents data for surface water and sediment samples collected on 9/15 from the San Juan River.

- Open or download the data file: Region 9 Sediment Summary Table 09182015 (XLSX) (1 pg, 24 K)
- Open or download the data file: Region 9 Surface Water Summary Table 09182015 (XLSX) (1 pg, 38 K)



PRESS RELEASE # 5

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 25, 2015: Gold King Mine Data, September 25, 2015
(<http://www2.epa.gov/goldkingmine/gold-king-mine-data-september-25-2015>)

Surface water and sediment concentrations are now below recreational screening levels. The river system as a whole is being maintained at pre-event conditions.

It is important to keep in mind that metal concentrations in water and sediment may fluctuate. Fluctuations occur because of weather and other events that change water flow rates or volume. They can also occur if sediments are accumulating at a higher than normal rate at a particular site, before being washed away by the next high water event.

As the response to the mine release transitions to long-term evaluations, EPA will continue to monitor for any abnormal occurrences of metal concentration exceedances of risk-based screening levels.

EPA sediment samples collected on 9/21 and 9/22 from locations along the Animas Rivers.

- Open or download the data file: Region 6 Sediment Summary Table 09242015 (XLSX)(1 pg, 56 K)

EPA surface water samples collected on 9/19 from locations in the Animas and San Juan Rivers.

- Open or download the data file: Region 6 Surface Water Summary Table 09242015 (XSLX)(1 pg, 56 K)



PRESS RELEASE # 6

U.S. EPA Website (<http://www2.epa.gov/goldkingmine>)

September 28, 2015: Gold King Mine Data, September 28, 2015
(<http://www2.epa.gov/goldkingmine/gold-king-mine-data-september-28-2015>)

Surface water and sediment concentrations are now below recreational screening levels. The river system as a whole is being maintained at pre-event conditions.

It is important to keep in mind that metal concentrations in water and sediment may fluctuate. Fluctuations occur because of weather and other events that change water flow rates or volume. They can also occur if sediments are accumulating at a higher than normal rate at a particular site, before being washed away by the next high water event.

As the response to the mine release transitions to long-term evaluations, EPA will continue to monitor for any abnormal occurrences of metal concentration exceedances of risk-based screening levels.

EPA sediment samples collected on 9/16 and 9/17 from locations along the Animas Rivers.

- Open or download the data file: Region 8 Sediment Summary Table 09262015 (XLSX) (1 pg, 41 K)

This data submission presents data for surface water and sediment samples collected on 9/2, 9/3, 9/8, 9/9, 9/11, 9/12, 9/13, 9/17, 9/18, 9/19, 9/20, and 9/21 from the Animas River.

- Open or download the data file: Region 8 Surface Water Summary Table 09182015 (XLSX)(1 pg, 11 K)
- Open or download the data file: Region 8 Surface Water Summary Table 09202015 (XLSX)(1 pg, 18 K)
- Open or download the data file: Region 8 Surface Water Summary Table 09242015 (XLSX)(1 pg, 56 K)
- Open or download the data file: Region 8 Surface Water Summary Table 09252015 (XLSX)(1 pg, 88 K)
- Open or download the data file: Region 8 Surface Water Summary Table 09262015 (XLSX)(1 pg, 69 K)