

A “Snap Shot” of Monitoring Being Done After the Animas River Gold King Mine Spill Incident

(As of: 11/24/15)

This handout is meant to be a *simple* quick list of the types of monitoring occurring after the Gold King Mine Spill Incident. It is not meant to provide any monitoring data or analyses of it or to identify needs or gaps. It is a “broad brush” look at who is doing what. Please contact the various entities for more information or visit their Web sites. If there are additional entities who would like to state what they are doing, this document can be expanded. These reports are listed in alphabetical order.

1. Animas River Stakeholders Group (ARSG)

Provided by: Peter Butler, Co-Coordinator of ARSG, 970-259-0986 or Cell: 970-317-0584
butlerpeter2@gmail.com
Web site: <http://animasriverstakeholdersgroup.org>.

The ARSG has not done much monitoring in recent years because many government agencies are taking samples. We spend a lot of time analyzing the results. This year we collected water samples for tributaries to Mineral Creek for which there is very little data. We also collected samples at the Bandora mine in South Mineral Creek and the Royal Tiger mine and Silver Lake high up in Arrastra Gulch. ch.

2. Animas Watershed Partnership

Provided by Ann Oliver, AWP Coordinator
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Web site: <http://animaswatershedpartnership.org/>

The Animas Watershed Partnership has conducted several water quality sampling efforts since 2002, focused on understanding nutrient loading, turbidity and sedimentation and bacterial levels, in the mainstem, Lightner Creek and the Florida River. This data is currently available upon request and will soon be available on the Colorado Data Sharing Network. Currently, Animas Watershed Partnership is engaged in the following Water Quality sampling efforts:

-AWP is sampling nutrients, -E.coli and turbidity, at 5 sites: the Animas River just upstream of Florida; Florida River just upstream of Animas; Salt Creek at CR309a, Salt Creek at CR307 and Florida River at CR307. Sampling at each site occurs every two weeks from May to December, for a total of 20 sampling visits to each site. Water samples are analyzed for levels of Total Nitrogen, Total Phosphorus, and E. coli. Turbidity is also measured.

3. Bureau of Reclamation

Contact:

Marc Miller, P.E. | Civil Engineer - Southern Water Management Team
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The Bureau of Reclamation conducts water sampling and analysis on the Animas River at the following locations in Durango:

- 32nd Street bridge (quarterly)
- 9th Street bridge (monthly)
- Santa Rita Park (monthly)
- BMX track bridge approximately 1/2 mile downstream of Santa Rita Park (monthly)
- and also in Farmington at the bridge just upstream of Animas/San Juan confluence.

Our office in Farmington conducts sampling on the San Juan River at various locations and I can get you that if you need it. Let me know if you need any additional information.

[4.City of Durango](#)

Contact: Dave Ferguson, Water Treatment Superintendent, Utilities Department
City of Durango 970-375-4887 Dave.Ferguson@durangogov.org

The City of Durango provided metals monitoring results required by Colorado Department of Public Health and Environment (CDPHE), Drinking Water Compliance Assurance Section, for potable water produced after the Gold King Mine spill event. The purpose of the increased sampling was to determine if the mine spill had any effect on the finished water quality of the City of Durango Public Water System. The City reported that they pumped very little (16.76 MG) from the Animas River after the spill and that the pumping season is now over. They also provided in-house (not certified) monitoring results from the Animas River during post spill pumping operations. Both are available upon request. The City did not sample any sediment from the Animas River bed.

[5.Colorado Department of Public Health and Environment](#)

CDPHE has a routine monitoring station on the upper Animas River near Silverton below Mineral Creek that is sampled every other month. In response to the spill, CDPHE added another site to be collected on the same date as the Animas station. This second site is located at the mouth of Cement Creek. Testing includes field parameters, nutrients and a suite of metals.

- ✓ General page on the Gold King incident: <https://www.colorado.gov/pacific/cdphe/animas-river-spill>.

6. Colorado Parks and Wildlife

Provided to the group by Matt Thorpe and Barb Horn, Colorado Parks and Wildlife (CPW)

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Matt Thorpe

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Water and Fish Monitoring Summary October 2015

Fish – CPW schedules periodic sampling of the fishery from above Silverton to the state line. Sampling has occurred about every five years since the Animas Stakeholders Group began remediation efforts (20 years or so). Data from these events, stocking information and data from sampling efforts around the Gold King Mine spill is available as it is finalized. CPW collects fish for respective agencies to conduct fish tissue analyses for public health evaluation by request. CPW has conducted fish tissue analyses and toxicity tests on the Animas and in other similar rivers to study the impact of elevated metals on fish health. Historic study results are compiled and available via Animas River Stakeholder Group reports. Macroinvertebrates and Physical Habitat – is part of the River Watch (RW) Program but not part of CPW regular monitoring protocol. CPW has supported the Animas River Stakeholders macroinvertebrate monitoring efforts and currently do not have a bug biological monitoring effort.

Water Quality – sampling is completed through the River Watch Program (RW) whether that is from CPW staff or trained and certified RW Volunteers. RW has helped with special studies that are short term in either time or space that helped determine contamination extent, develop restoration goals, and monitor remediation projects for example, thus more data and stations exist in the RW database than baseline monitoring.

RW's larger contribution is the baseline long term monitoring since summer of 2002 the below sites. RW will continue to monitor the following sites monthly for field (pH, temperature, alkalinity and hardness) and total and dissolved metals (13), hi/low flow nutrients (nitrate-nitrite, ammonia, total phosphorus, chloride, sulfate and TSS) for upper stations and monthly for lower stations (Baker's Bridge to Weaselskin). We have added stations when needed as well, such as Howardsville, this past year. All sites were selected in working with the Animas River Stakeholders Group and/or interests of volunteers.

Protocols and reporting limits follow for the most part CDPHE-WQCD field and laboratory. Laboratory samples are analyzed in CPW Fort Collins Research Center. Data has been provided to Animas Stakeholders Group, WQCD in basin and Regulation 93 hearing data calls, uploaded to the Colorado Data Sharing Network and EPA STORET and is available on CPW's website or by request as well. The price for volunteer data is time and data is not available for several months after collection.

Mainstem Sites	Tributaries
Howardsville, A68	Mineral Cr (at gauge)
13th St Br	Cement Cr (at gauge)
Above A72	Cascade Cr (Hwy 550)
A72	Lightner Cr (at mouth)- also by Wildcat Canyon
Baker's Br	Hermosa Cr (monitoring ended 9/2015)
Trimble Ln Br	Long Hollow (above La Plata Conf)
32nd St	La Plata (above and below Long Hollow Conf)
Hatchery	
ANIDURCO	
High Bridge	
Weasleskin Bridge	

In addition to the River Watch group, local CPW will continue to monitor fish populations in the Animas River. Various locations are sampled on the river by electrofishing to determine the presence/absence, size and weight of various fish species. From this information, our aquatic biologist, Jim White, is able to estimate the size, abundance, and overall quality of fish in the river. We have been monitoring the river for many years, so we are able to compare to previous years and identify any trends for the fishery. Jim White is our aquatic biologist and his email is j.white@state.co.us

[7. Environmental Protection Agency](#)

Contact: Cynthia Peterson
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- ✓ General Gold King Web site: <http://www2.epa.gov/goldkingmine>.
- ✓ FAQ Document: <http://www2.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response>.

- ✓ Data for Colorado (map and sampling data) : <http://www2.epa.gov/goldkingmine/data-gold-king-mine-response>.
- ✓ EPA's Draft Conceptual Monitoring Plan. <http://www2.epa.gov/goldkingmine/september-17-2015-epa-seeks-input-draft-monitoring-plan-following-gold-king-mine>.

8. Fort Lewis College

Provided by Heidi Setzler, Fort Lewis College Professor
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970-247-7450

An interdisciplinary group of faculty at FLC (chemistry, biology, environmental studies) sampled soils and plants from several Animas Valley Farms in Sept/Oct 2015. This was done to ensure at least some crop samples from 2015 were collected to determine heavy metal concentrations. The impact of the spill on produce cannot be determined, but samples can help us understand heavy metal concentrations in plants and soil, beginning in the year of the spill.

9. La Plata County

Contact: Leslie Jakoby – Public Works – 970-382-6376, Leslie.Jakoby@co.laplata.co.us

La Plata County has conducted third party independent sampling during the Gold King release. Samples include sediment, water column, and mine discharge. La Plata County has also reviewed and commented on sampling plans prepared by EPA, documents prepared by EPA, and sampling results collected by EPA, CDPHE and others. La Plata County continues engagement with EPA and area stakeholders through participation in meetings with EPA leadership and community advisory groups.

10. Mountain Studies Institute (MSI)

Contact: 970- 387- 5161

Mountain Studies Institute (MSI) conducted water quality monitoring at Rotary Park and benthic macroinvertebrate sampling before, during, and after the plume at multiple locations from Durango to Silverton. Daily water quality samples were taken until September 30th and storm events were sampled through October 26th with funding support from the EPA. MSI will be releasing graphs and a summary of the storm water data in the coming weeks. The benthic macroinvertebrate community and tissue analysis will be available in early 2016. MSI is seeking partnerships and funding to continue science communication and monitoring of special hydrograph events through next year.

INFO@MOUNTAINSTUDIES.ORG

- ✓ MSI conducted river monitoring through October and will be presenting their results. Find out more at: <http://www.mountainstudies.org/goldkingspill>.

✓ Explanatory document with graphs re: sampling done in August at Rotary Park in Durango:
http://static1.squarespace.com/static/53bc5871e4b095b6a42949b4/t/55e254ebe4b02c93b1bf8f8c/1440896235272/MSI+Rotary+Results_2015.08.28v3%5B1%5D.pdf.

11. San Juan Basin Health Department

Contact: Brian Devine, Environmental Health Communications
970-335-2030 Email: BDevine@sjbhd.org

The SJBHD does well testing only for bacteria as the agency does not have the capacity to test for heavy metals. For more comprehensive testing, including SJBHD's recommended annual testing, the state has a list of certified Safe Drinking Water laboratories (contact Brian to get this list). Green Analytical, in Bodo Park, www.greenanalytical.com, 970-247-4220 is the only local well tester. The SJBHD has a list of suggested tests to run. Contact Brian for a "Private Well FAQs" or find it on their Web site:

<http://sjbhd.org/public-health-news/gold-king-mine-incident/>. Also, www.wellowner.org is also a good resource but has more national-level information.

12. Great Old Broads for the Wilderness

Contact: Member, Anne Markward
970-779-8796

SW Colorado Great Old Broads have bought and mounted two cameras for permanent positioning to create long term monitoring of certain areas of the Animas - one hotspot just about 32nd Street, and one in the Bakers Bridge Area. If these go well, we hope to also install cameras along the Upper Animas next spring / summer. The goal is to have a consistent, long term record of water color and sediment loads. This information will be on the cloud, and shared with all interested parties.

13. Southern Ute Indian Tribe

Contact: Curtis Hartenstine, Water Quality Program Manager
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The Southern Ute Indian Tribe's Water Quality Program (WQP) is monitoring the Animas and has been doing so for almost 20 years. About 20 miles of the Animas River flows through the Reservation from just south of Durango to the New Mexico State line. The WQP has 4 sites on the Animas that are part of historical and Gold King Mine Release monitoring. These sites are located approximately 2 miles, 7 miles, 16 miles and 19 miles north of the New Mexico border to the Northern Border of the Reservation. Three of these sites are monitored with continuous reading sondes that capture pH, DO, temperature and conductivity measurements at 30 minute increments. Water chemistry is monitored for dissolved and total species of approximately 20 metals. Macroinvertebrates, nutrients, chlorophyll a. and bacteria are also monitored at various frequencies. The WQP provided recent historical data to assist in the determination of when the Animas River returned to pre release quality. Tribal Wildlife

staff annually monitor fish populations and combined with WQP to perform fish muscle toxicity tests on Trout and native species on the Animas. These toxicological data were collected before the spill and replicate studies will follow for several years.

[14. Five Rivers Chapter of Trout Unlimited](#)

Five Rivers Trout Unlimited

Provided by: Buck Skillen – President

fpope@bresnan.net

5RTU is actively supporting the sampling of water quality, sediment and the macro-invertebrate populations in the Animas River in the Town reach by providing volunteer time and funding. Members of 5RTU are volunteers with the River Watch water quality sampling efforts. Members of 5RTU are on the Steering Committee of the Animas Watershed Partnership and are active in the Animas River Stakeholders Group. 5RTU is an active supporter of CPW efforts towards the improving health of the Animas fishery.

[15. Other entities that do monitoring: USFS, BLM, and the Ute Mountain Ute Tribe.](#)