

The Long Road to Superfund

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The spill of an estimated 3 million tons of mine waste from the Gold King Mine on Aug. 5, 2015, was the catalyst that prompted Silverton and San Juan County to formally request Superfund on Monday, Feb. 22. But it was the culmination of a long history. The following chronology was developed with information from the Animas Rivers Stakeholders Group (ARSG) and by the *Silverton Standard* archives:

1959-1961

Standard Metals extends tunnel beyond Gold King property to the Sunnyside Mine workings and re-names it the American Tunnel (AT).

1978

June 4, 1978 — Lake Emma floods the Sunnyside mine, forcing a temporary closure.

Fall 1978 — Treatment plant commissioned for the treatment of American Tunnel (AT) discharge. Re-designed and upgraded 1988-1989.

Summer 1991 — Sunnyside Mine closes.

1993

November 1993 — Technical Revisions to the Reclamation Plan, including bulkheads installations, approved by the MLRB (Mined Land Reclamation Board).

1994

May 1994 — Sunnyside Gold Corp. (SGC) filed for Declaratory Relief requesting that the Court determine whether seeps and springs that occurred after proposed bulkheading would be subject to the NPDES requirements.

Summer 1994 — Water Quality Control Commission (WQCC) hearing on implementing new “goal based” water quality standards; resulted in ARSG accepting the challenge to determine conditions, determine feasibility for remediation, and make recommendations for achievable water quality standards throughout the Animas Watershed.

Fall 1994 — Animas River Stakeholders Group formed, and Bill Simon hired as Coordinator.

1995

1995 — Mogul and Grand Mogul mines purchased at tax sale by Salem Minerals Inc. Later transferred to San Juan Corp. (Todd Hennis, president of both).

1995 — Proposed Sunnyside Gold Corp. (SGC) consent decree open for public comment; ARSG had not yet reached consensus therefore did not comment. Individuals, landowners, etc., were encouraged to comment on their own.

1996

May 1996 — SGC and WQCD entered into the Consent Agreement. “A” list remediation projects: Sunnyside Mine Pool, S. Fork Cement Cr Mine Waste dump, Surface Mill Tailings at Eureka, Gold Prince Mill tailings and bulkhead, Koehler Longfellow Portal and Mine Waste Dump, Boulder Creek Mill Tailings, Pride of the West Mill Tailings. “B” list projects: Columbus Mine Portal, London Portal

1996 — SGC/State of Colorado Consent Decree (CD) approved.

1996 — SGC begins group A remediation projects including Koehler dump removal, Longfellow mine waste remediation, and the Koehler/Junction red sludge pond cleaning below these two sites. Lead Carbonate Tailings Pond was removed in 1995 as an “A List Project.” Eureka Tailings removal was completed in 1996. A List projects completed in 1997 included Ransom Tunnel bulkhead, Boulder Creek Tailings removal, Pride Tailings removal, Gold Prince bulkhead, tailings and waste dump isolation. Alkaline injection into the mine pool was also a CD project as was the treatment of Cement Creek.

Summer 1996 — American Tunnel first bulkhead installed. (Valve closed on July 29, 1996, then opened to meet Town of Silverton’s need to stop a “call” on water in the Animas. Valve closed for good on September 9, 1996. SGC begins treating CC as part of CD.

1997

April 1997 — Joint petition to amend CD (#1). Added Appendix to preserve historic structures at the Gold Prince and add the Ransom Portal mitigation.

October 1997 — Completed projects: Sunnyside Mine pool, American Tunnel waste dump, Surface Mill tailings at Eureka, Gold Prince, Koehler/Longfellow Mine dumps, Boulder Creek tailings, Pride of the West tailings, Ransom Portal.

1999

January 1999 — Joint petition to amend CD (#2). Added additional “B” List projects (Mayflower Facility – Upland Hydrologic control, Tailing Pond #4 surface drainage modification, and Tailing Pond #4 upland groundwater diversion).

August 1999 — Steve Fearn becomes principal of Gold King Mines Corp. (including the Anglo Saxon and Harrison MS claims) purchased from CCTC, an Oklahoma company. Tom Warlick becomes holder of the first mortgage. Fearn sealed four portals on Gold King property and noted that drainage flow had recently increased.

September 1999 — Mogul discharge begins increased flow

1999-2001 — Gold King discharge increases from 2.7–7 GPM to 31 to 72 GPM; metal load remains about the same however.

1999-2003 — Mogul mine discharge increase is noted in the fall of 1999; eventually increasing up to 200 gallons per minute. ARSG data after 2003 also indicated an increased flow since our 1997 sample.

1999-2003 — Sunnyside did supplemental CD projects, Mayflower Mill/TP#1 upland diversions, TP4 toe ditch liner and upland diversions.

2001

May 2001 — Last sample taken from AT #1 bulkhead. Sunnyside Mine pool thought to have reached equilibrium. (This condition was required to be met before additional bulkheads could be installed downstream in the AT).

August 2001 — American Tunnel second bulkhead installed; valve closed on Aug. 31.

2002

Fall 2002 — Gold King Mines Corp. (GKMC) purchased the Mogul mine from San Juan Corp. (SJC, Hennis, president) for a note. As additional surety to secure the note, GKMC gave SJC a second mortgage on the Anglo Saxon and Harrison MS (which included the water treatment facilities and settling ponds, respectively, at Gladstone).

Fall 2002 — SGC and GKMC enter into agreement(s) for GKMC to take over the SGC treatment plant, treat Cement Creek for 6 months and the remaining discharge from the AT, (which allegedly is the historic flow originating from fault zones in the Gold King property and which they were interested in treating as part of their mining plan). SGC had previously leased the Harrison and Anglo-Saxon claims from GKMC. GKMC intended to use the treatment plant to treat Gold King mine discharge as part of their mining plan. GKMC agreed to install bulkheads at the Mogul and Koehler mines. SJC became owner of Herbert Placer.

December 2002 — American Tunnel 3rd bulkhead installed; valve closed on Dec. 3.

2003

2003 — Mogul bulkhead was completed in August 2003 and Koehler bulkhead completed September 2003 by GKMC.

2003 — Sunnyside completes a supplemental Power Plant Tailings Project and the construction of a reactive treatment wall below Mayflower Tailings Pond #4 as an amendment to CD.

January 2003 — CDPHE determined that the Terms of Consent Decree had been met.

January 2003 — CDPHE transferred the AT CPDES (discharge) permit to GKMC.

January 2003 — Gold King Corp. begins treatment of AT, treated Cement Creek till June 2003 and AT discharge until January 2004.

Related agreements between SGC and other parties (some dates provided elsewhere): Amendments #3 & #4. Amendment #5 projects completed: Power Plant tailings, Power Plant hydrologic controls, passive reactive wall construction (per presentation by Larry Perino, 10/2004).

Baumgartner Agreement (SGC funds to facilitate bulkheading of the Koehler Tunnel),

San Juan Agreement (Herbert Placer deeded to SJC, SJC transfer Mogul to Gold King Mines, SJC leases settling ponds to Gold King for water treatment)

Gold King Agreement (bulkhead Mogul, AT treatment plant and other buildings transferred to Gold King, Transfer AT discharge permit to Gold King, etc.)

June to Fall 2003 — Cement Creek was treated into 2003 except for a short period in 1999. The flows treated did vary from winter to just a portion in the summers. The flows treated ranged from ~450 gpm to ~ 1600 gpm.

July 2003 — Consent decree terminated.

July 4, 2003 — Large discharge from Red & Bonita is noted by Hennis and reported to the State. San Juan County had already installed a culvert to prevent the county road from washing out from the discharge.

Summer 2003 — GKC installs pipe from Gold King to Gladstone and begins treatment of GK discharge.

August 2003 — San Juan Corp. notifies GKMC it is in default of Lease on Herbert Placer due to failure to maintain adequate liability insurance.

September 2003 — GKMC unsuccessfully attempts to acquire insurance.

October 2003 — SJC demands GKMC cease using settling ponds.

November 2003 — District Court finds in favor of SJC; an agreement is worked out to permit continued operation of water treatment plant if insurance is acquired and a new short-term lease is negotiated.

2004

January 2004 — GKMC acquires liability insurance through SGC's parent company and a new short-term lease is signed between GKMC and SJC

January 2004 — Severe snowstorm closes County Road to Gladstone for one week. No access was available to run standby generator, resulting in significant freeze damage of water treatment equipment. The back-up lime treatment plant (Terry Tunnel portable plant) was re-activated and the plant came on line in February. This resulted in the discharge at Gladstone (AT treatment) out of compliance. Treatment continued but due to variable operating conditions, some excursions resulted in out of compliance parameters, which were reported to the CDPHE.

May 2004 — SJC alleges multiple defaults of new lease agreement. Issues largely stem from effects of January snowstorm damages.

May 2004 — Active water treatment had almost ceased, and the untreated flows were going into the settling ponds where the resultant precipitates were acidifying the two million gallons of previously lime treated sludges, creating a much larger environmental problem. In the words of one State official, "Gold King has had only a partial pallet of lime and it's not being used." Colorado Department of Health Hazardous Materials Sections threatens SJC with removal action of the abandoned sludges in the settling ponds. Steve Fearn of GKMC rebuts this however, pointing out that they had not run out of lime and had arranged for delivery of more lime. GKMC continued to treat the Terry Tunnel discharge until they were shut down by the Court.

July 2004 — GKMC lease with SJC was apparently modified so GKMC could install new equipment, new settling ponds, and restart treatment of AT. However, treatment not restarted due to SJC renewing litigation between GKMC and SJC. Or treatment not restarted due lack of funds to purchase lime. (Dispute between parties).

September 2004 — Simon first notices and reports on an increase of flow from Red and Bonita mine to 72 GPM.

September 2004 — GKMC receives Notice of Violation/Cease and Desist Order from CDPHE.

September 2004 — SJC demands GKMC vacate Herbert Placer settling ponds. SJC offers settling pond use to WQCD for emergency water treatment by WQCD or "another responsible party." Mark Pipfer, Director of WQCD, (allegedly) replies "we have zero interest in that".

October 2004 — Through action initiated by SJC, San Juan County District court ordered that GKMC cease and desist the use of the treatment settling ponds, due to GKMC's loss of lease on the settling ponds. GKMC complies with Court Order and ceases treatment.

October 2004 — EPA calls SJC to see if the settling ponds can remain for use. SJC offers the use of the ponds to EPA for water treatment as long as EPA will guarantee reclamation of the ponds when the use is finished. EPA refuses. However, the EPA representative, C. Russell, stated that Mr. Hennis' offer was conditional upon his receiving total liability relief from discharges from his mine sources (in the area).

October 2004 — WQCD initiated enforcement action re failure to comply with AT discharge permit.

Fall 2004 — ARSG requests EPA to provide a Targeted Brownfields grant to San Juan County to investigate increasing discharges from Gladstone area mines, determine practical treatment plant designs and discharge sources for treatment.

Winter 2004-5 — ARSG requests BLM to explore potential operational entities and funding mechanisms for a new Gladstone area treatment plant. BLM contracts with San Juan County to accomplish this.

2005

2005 — GKMC develops a plan to construct new settling ponds on Anglo Saxon Claim and re-start water treatment plant. GKMC is unable to fund the project.

2005 — After waiting for results of GKC/SJC proceedings through 2004, Sunnyside reclaimed the settling ponds per reclamation plan and a court order to GKMC requiring removal of sediments (sludges). Sunnyside expends a lot of funds for lime to de-acidify the sludges from the period when untreated water was put in the settling ponds.

Spring 2005 — San Juan County sponsors the Targeted Brownfields Initiative for Gladstone treatment possibilities. EPA begins data collection of key mine discharges and stream water quality.

November 2005 — SGC removed AT treatment ponds in accordance with their reclamation permit.

December 2005 — GKMC loses the Gold King Mine Properties including the treatment facility and land area proposed for new settling ponds (on the Anglo Saxon and Harrison MS claims) through foreclosure action by CCTC (Tom Warlick). SJC, as second mortgage holder on the two claims, acquires the Gold King mine property including the Anglo Saxon and Harrison MS.

2006

March 2006 — At the request of ARSG, GKMC applies for AT discharge permit renewal to keep the option open for a new operator to treat discharges in the Gladstone area. Permit renewal was denied.

May 2006 — San Juan County Attorney completes his BLM funded report on Gladstone treatment plant funding and operational potentials.

September 2006 — Targeted Brownfields Water Treatment Evaluation Report released.

September 2006 — Targeted Brownfields reports finalized. Reviewed and discussed by ARSG over several meetings. Potential funding sources explored. Sources for sludge disposal explored. High Density Sludge treatment plant determined to be effectual but problematic due to large sludge generation and disposal costs whether low or high density design. Todd Hennis suggests that a new rotary concentrator designed by Ionic Technologies, Inc might be added to increase efficiency.

2007

Spring 2007 — Discharge from Gold King 7 level breaches the ditch and erodes large portion of the mine dump down into North Fork of Cement Creek. Mr. Hennis has some maintenance on the ditch performed.

November 2007 — Addendum to the Water Treatment Evaluation Report released.

August 2007 — EPA and BLM assist Ionic Technologies in field testing of the rotary concentrator on American Tunnel and Cement Creek water. (Gold King was inaccessible due to length of unit). EPA contributed \$70K and BLM contributed \$41.1K to accomplish this field testing and associated activities such as SAP/QAPP, analytical, and statistical fees. SJC and Colorado Goldfields also contribute to the Ionic Technologies field testing.

2007 — Simon encourages that new and/or innovative water treatment technologies be explored. Several companies participate. (On-going)

2007 — Simon suggests that the ARSG explore developing a pilot demonstration plant designed to test various new and emerging treatment technologies that would serve the nation and eventually would result in a practical technology being chosen for permanent installation at Gladstone. (On-going)

2008

June 2008 — Hennis advises ARSG and EPA that Blue Sky Water technologies may have an alternative treatment technology. He requested EPA to do a split of water samples from the scheduled Ionic Technologies field test, but this was not accomplished.

2008-10 — Peter Butler begins exploring various permitting options that might be used to maximize flexibility and minimize permit requirements, including the legal possibilities of combining the discharges and waste streams of the Gladstone area mines owned by BLM, corporations, and private owners. ARSG

continues support of Good Samaritan legislation likely necessary for a collaborative, multi-party, and multi-source treatment facility. (www.goodsamaritaninfo.org)

Fall 2008 — Blue Sky Water Technology (Ionic State Modification or ISM) receives water samples shipped by ARSG from AT and GK 7 level for bench tests. ARSG also shipped water samples from those sources to Compliance Consultants for bench testing their ionic exchange process.

2008 — Field Test of Tusaar's tea bag type treatment of North Fork of Cement Creek using a two-phase transition metal immobilization process.

November 2008 — BLM reports on final test results of Ionic Water Rotating Cylinder demonstration run for Gladstone area waters.

2009

February 2009 — Blue Sky Water Technology presents results of AT and GK bench treatment test results from Fall, 2008 AT and Gold King 7 level sample water.

2010

Fall 2009-2010 — Contacts made with Biotech regarding their new treatment process undergoing initial startup treatment at the Wellington Oro mine near Breckenridge. Biotech is working out kinks and will contact us when ready to provide details and possibilities for use.

Fall 2010 — The Environmental Protection Agency conducted intensive water and soil sampling in the upper Cement Creek area in recent weeks to see if the area may qualify as a Superfund site.

2011

May 2011 — With the Environmental Protection Agency preparing to release its decision on whether a cluster of mines near Gladstone qualifies for Superfund designation, the Animas River Stakeholders Group is approaching a crossroads.

And the three coordinators of the group say the ARSG — open to anyone interested in Animas River water quality — is unable to reach a consensus on the possible Superfund designation.

August 2011 — A handful of abandoned mines near Gladstone are responsible for enough contamination of Cement Creek and the Animas River to justify Superfund listing, according to the Environmental Protection Agency, but that won't happen without community support.

In a Town Hall meeting Thursday, Aug. 18, EPA officials reviewed data from their fall 2010 sampling of Cement Creek and the Animas River. They say water quality is worsening, with zinc, lead and other heavy metals at elevated levels.

This in turn is being blamed for the loss of three of four trout species since 2005 in the upper Animas.

September 2011 — A brief Environmental Protection Agency presentation on the possibility of using Superfund to address water quality issues on Cement Creek was greeted with some skepticism at Town Hall on Monday night, Sept. 12. Some attending the meeting even questioned whether there was enough data to support the conclusion that there was a serious problem.

October 2011 — Sunnyside Gold Corp. has offered to contribute up to \$6.5 million to address water quality issues in Cement Creek and the Animas River, including up to \$5 million to operate "a cost-effective" treatment plant to process tainted water spewing from mine portals above Silverton.

In an Oct. 4 letter to the Animas River Stakeholders Group coordinators and BLM district manager Lori Armstrong, Sunnyside's president, Lauren Roberts, said the company "does not view that a Superfund listing would be constructive and would vigorously contest any alleged liability under Superfund."

October 2011 — Sunnyside Gold Corp. wants the Silverton Town Council to support its approach for a collaborative process for addressing water quality problems associated with dormant mines above Gladstone.

Sunnyside, as a former mine operator in the area, has been identified by the EPA as one of several "potentially responsible parties" that could be held liable for cleaning up the problem if the sites were placed on the National Priorities List.

"We're trying to convince you that a collaborative process is the best way," Larry Perino, Sunnyside Gold Reclamation manager, told the Town Council. "It would be helpful if you let the EPA know what your thoughts are."

November 2011 — Some members of the Animas River Stakeholders Group are asking the Environmental Protection Agency to "hold its fire" on seeking Superfund listing for Cement Creek mine drainages.

And Sunnyside Gold Corp. President Lauren Roberts warned the EPA that it will face a lengthy legal fight if it seeks to nominate the sites for the National Priorities List under the so-called Superfund legislation.

2012

April 2012 — The Environmental Protection Agency has something to say to Silverton: “We heard you loud and clear,” said Mark Hestmark, acting office director for ecosystems protection and remediation at the EPA’s regional office in Denver.

“We are going to set aside the whole Superfund listing in the interest of continuing to collaborate with you and the Animas River Stakeholders Group, as we have for the last 17 years,” Hestmark said in a meeting with town and county officials.

September 2012 — Building a treatment plant to remove heavy metals from abandoned mines along Cement Creek may cost an estimated \$6.5 million, and operating it could cost another \$910,000 a year, according to a Sunnyside Gold Corp. consultant.

Sunnyside Gold Corp. last October offered to contribute up to \$6.5 million to address water quality issues in Cement Creek and the Animas River, including up to \$5 million to operate “a cost-effective” treatment plant to process tainted water spewing from the mine portals above Silverton.

But that \$5 million for operations would only keep the plant running for some five years, according to the report by MWH Global, of Boise, Idaho.

2013

June 2013 — Sunnyside Gold Corp. and the Environmental Protection Agency are conducting talks aimed at a comprehensive settlement to resolve possible water quality liability issues related to past Sunnyside operations in the basin.

Mike Holmes of the EPA said the agency has been “working with Sunnyside Gold, exchanging information on settlement issues — liability issues for a long-term settlement.”

2014

January 2014 — San Juan County commissioners have expressed concern that the Animas River Stakeholders Group is not making enough progress in addressing the mine waste that is contaminating Cement Creek.

And a former BLM representative to the stakeholder’s group has been circulating a petition urging state and federal officials to “undertake more effective action in restoring the health of the Animas River.”

“How long is this going to go on?” asked San Juan County Commissioner Scott Fetchenhier at a board meeting last month. “The levels (of heavy metals) are going back up and it is affecting fish and the invertebrates they feed on. How long do you allow this to continue before you say enough is enough?”

County Board Chairman Ernie Kuhlman worried that all he is seeing is “more studies and more studies” as the “quality of water is coming down on Cement Creek.”

And County Commissioner Pete McKay said, “it’s getting harder to explain when asked what we’re doing.”

February 2014 — The Environmental Protection Agency has proposed sealing the Red & Bonita Mine above Gladstone to stem acid-mine drainage flowing into Cement Creek and ultimately into the Animas River. The action, proposed for 2015, has the potential of greatly improving water quality downstream, with little downside, state and federal environmental officials said last week at a meeting of the Animas River Stakeholders Group.

Steven Way, coordinator for the EPA’s efforts to address contamination on Cement Creek, said the project may cost up to \$1.5 million and “it’s anticipated that the EPA would pay for it.”

April 2014 — Sunnyside Gold Corp. has unveiled a 9-step “Game Plan” to address water quality problems on Cement Creek, pledging up to \$10 million for the “implementation of a preferred solution” by June 2017.

The plan was announced in an April 21 letter to the Animas River Stakeholders Group from Larry Perino, reclamation manager for Sunnyside Gold.

Sunnyside Gold, which has previously committed \$6.5 million for construction of a treatment plant to reduce metals loading in the creek, said that by 2017, that fund will have grown to \$10 million.

And the company said it anticipates “opportunities to garner additional support from other parties.” But Perino reiterated the company’s position that its offer is contingent on the company “obtaining satisfactory documentation that it has no liabilities in the District.”

2015

March 2015 — The Environmental Protection Agency is asking Silverton for permission to test the soil in the town's parks, streets and schoolyard to determine if the area is contaminated with heavy metals such as lead, arsenic and cadmium.

Summer 2015 — Work being done to bulkhead the Red & Bonita mine.

Aug. 5, 2015 — An EPA crew trying to reopen the Gold King Mine triggers a disaster, as up to 3 million gallons of mine waste pour from the mine portal into Cement Creek.

October 2015 — A new, \$1.5 million temporary water treatment plant is now operating at Gladstone, EPA officials say, treating the continuing discharge of acid-mine drainage from the Gold King Mine. "The system is now operating 24 hours a day," according to an EPA statement issued Tuesday, Oct. 20. "It is treating flows from 200 to 800 gallons per minute, which includes all the flow from the mine, plus water that has been stored in ponds prior to start-up."

The agency reported that "based on field testing, treatment effectiveness appears to be very good so far."

November 2015 — Both the Silverton Town Council and the San Juan County Board of Commissioners have directed their staff to begin talks with the EPA and Colorado Department of Public Health and the Environment for a Superfund listing for a cluster of abandoned mines on upper Cement Creek. It's a decision years in the making, but spurred by the Aug. 5 Gold King Mine blowout that sent 3 million gallons of acid-mine drainage down the Animas River, triggering emergency declarations in four states.

2016

February 2016 — It was unanimous.

In a historic vote, the Silverton Town Council and San Juan County commissioners agreed Monday night to request Superfund listing for 46 mining sites and two study areas in the county.

The votes by both boards comes six months after the Aug. 5, 2015 Gold King Mine spill and after years of resistance by local officials to such a designation.