



# **GOLD KING MINE WESTCAS FALL CONFERENCE**

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# HISTORICAL BACKGROUND

- The Gold King Mine (GKM) was discovered by Olaf Nelson in 1887, with operations continuing until 1907.
- The mine was reopened in 1910 but closed shortly after due to litigation and labor problems.
- In 1918 a new company bought the mine and operated it until the fall of 1922
- The GKM shipped 711,144 tons of gold and silver ore while in operation.
- The GKM is currently owned by San Juan Corporation.

# Gold King Mine Spill

- On August 5, 2015, EPA was conducting an investigation of the GKM
  - explore the continual water releases from the mine
  - treat mine water
  - consider the feasibility of further mine remediation

[Video 9; Video 8; Video 5](#)
- The spill volume associated with the release on August 5, 2015 contained approximately three million gallons of water.
- Current discharge rates from the mine are averaging around 600 gallons per minute.

# What was in the spill water?

- Surface water samples near the spill area had high concentrations of metals that exceeded standards for drinking water.
- Several water quality parameters were exceeded:
  - pH, turbidity, sedimentation
- Metals of concern:
  - Arsenic, copper, lead, mercury and selenium.

# Gold King Mine Precautions

- Leading edge of the GKM plume reached the City of Aztec, NM around midnight on Friday, August 7, 2015.
- On Saturday, August 8, 2015 the Animas River was closed by emergency declaration-prohibiting contact with the water by people, pets, or livestock.
- Agriculture ditch head gates were closed; refrain watering livestock with river water.
- Residents on private water wells within the floodplain of the river, as a precaution, were asked to avoid contact with water from wells until they have been tested for contamination.
- N.M. Department of Game and Fish also recommend anglers not to fish in the Animas River and not to eat fish caught in the watershed.



## Gold King Mine Precautions- Continued

- Livestock watering and potable water stations were made available to San Juan County residents in New Mexico.
- Leading edge of the GKM plume reached Lake Powell on Wednesday, August 12, 2015.
- Lake Powell is a large body of water and experienced no significant impact to the lake; and downstream users saw not significant impact.
- On August 15, 2015 a signed declaration lifted the ban on use of the Animas River in New Mexico.

# Impacts to New Mexico

- Municipal and Domestic water supply intakes from the Animas River were closed prior to the arrival of plume.
- Municipal and Domestic water sharing efforts were initiated.
- No customers received contaminated drinking water and no customers went without service.
- Not all irrigation ditches could be closed; all ditches were flushed with river water for 12 hours prior to resuming irrigation.
- No evidence of fish kills or unusual animals mortality.
- Long term monitoring of spill impacts is needed.

# Treatment of Mine Water

- As water exits the mine, the water flows into a system of four treatment ponds. The treatment ponds provide retention time to allow the addition of lime to neutralize the pH and settle out the heavy metals.
- Due to existing ponds being located in an avalanche zone; a newly constructed treatment facility will begin taking mine drainage during the winter.
- A 4,800 foot pipeline will direct mine water to the new treatment facility.



# Animas – La Plata Project



# Gold King Mine Spill – Animas-La Plata Project

- Calling Tree activated, Project was notified spill was on the way
- Pumping Plant was not pumping at the time
- Partially isolated the Plant
- Fish Bypass closed and suction valves closed on each pump unit.
- No flow into Pumping Plant and not enough time to install bulk heads into diversion structure.

# Animas-La Plata Intake Structure





# Animas- La Plata Project Post GKM



# Animas-La Plata Project Impacts

- No real impacts to the Project.
- Offsite reservoir; water quality was not affected.
- EPA sampling was an extra step in cleaning the Pumping Plant.
- Sediment will be stored on site and will dry 6-8 months and will be retested and properly dispose of.
- The Animas-La Plata Operation, Maintenance and Replacement Association will not pump next year.



# Current Events

- The U.S. Department of the Interior released a peer review report issued by Bureau of Reclamation's Technical Service Center on Thursday, October 22, 2015 stating that the event could have been prevented.
- Long Term-Effects on New Mexico; the State of New Mexico is developing a comprehensive Road Map forward, to ensure that scientific attention and oversight is provided.
- Citizens Advisory Group is being formed to ensure that citizen and stakeholder concerns are being addressed.