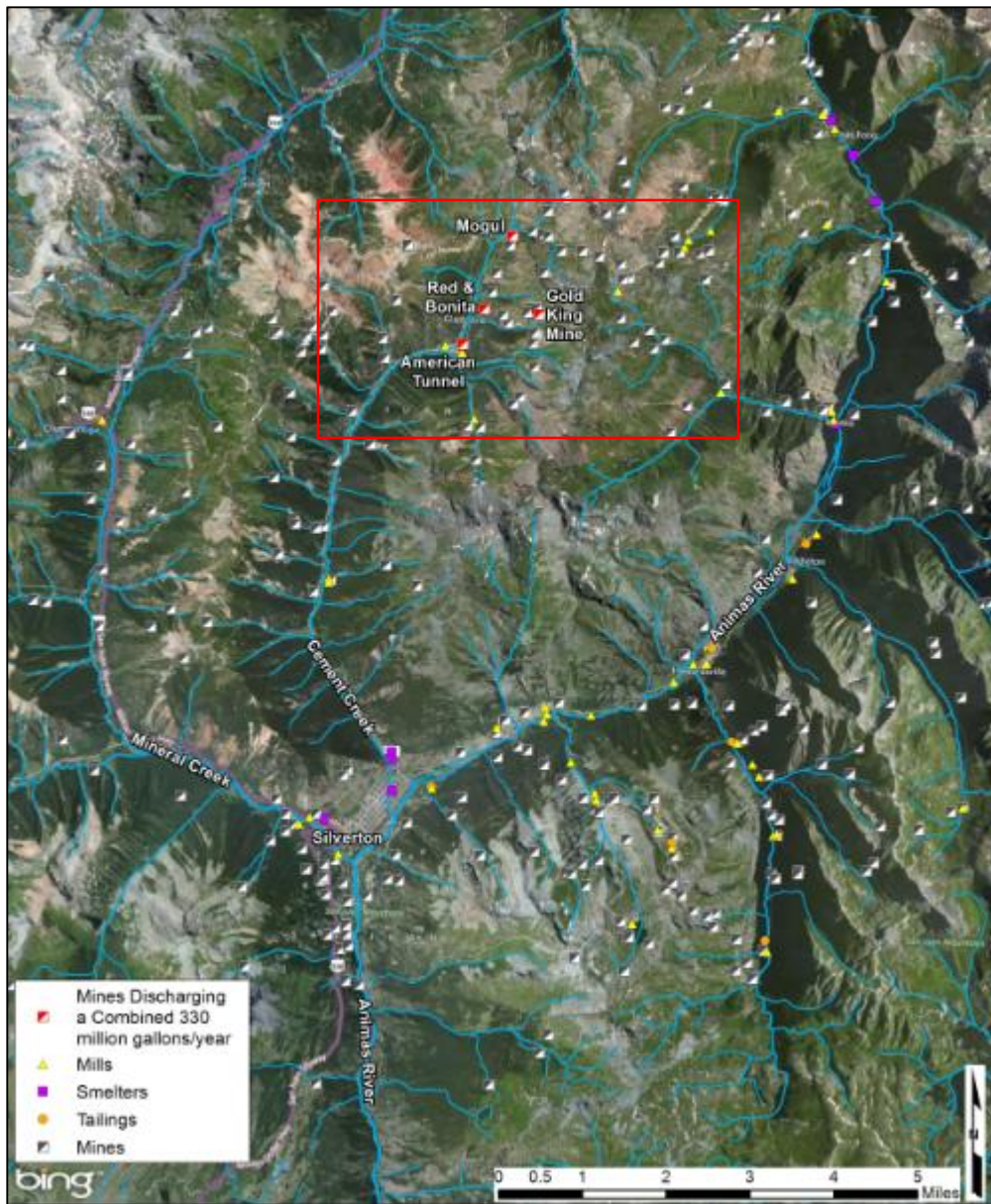



Gold King Mine Response and Recovery

October 26, 2015

Upper Animas River Basin



 Mines Discharging a Combined 330 million gallons/year

Work Completed in Upper Animas

- Since 1990, over 50 reclamation projects have been completed in the Upper Animas River Basin, including:
 - moving or capping contaminated tailings and waste rock, installing passive treatment and ponds, water diversions, and mine adit hydraulic controls including bulkheads to halt or allow the management of flow from discharging mines.
- Projects have been completed in each of the three major tributaries above Silverton: the Upper Animas, Cement Creek, and Mineral Creek drainages.
- Projects have been completed by private mining companies (Sunnyside Gold Corp., Gold King Mining and others), Federal agencies (Bureau of Land Management and United States Forest Service), State of Colorado agencies (Division of Mining Geology/Division of Reclamation Mining and Safety), and by stakeholder groups (Animas River Stakeholder Group and others) through CWA Section 319 Funds.

Gold King Mine Site Operations

- Stabilizing mine access to establish control of water flow over the winter.
- Piping water discharge approx. 4600 feet from mine to treatment ponds at Gladstone.
- Further entry and stabilization will occur next season.

Gold King Mine Adit: Shotcrete Stabilizing Opening



Treatment Pond



Temporary Water Treatment Plant



Water Treatment

- Temporary treatment plant installed to treat GKM discharge over winter and during mine site operations; treating ~550 gpm from GKM
- Water treatment performance:
 - Neutral pH effluent > 6.0, < 9.0
 - Dissolved solids will be reduced by removal of metals and formation of metal hydroxide sludge.
 - Total solids will be reduced by coagulation, flocculation, and settling through the clarifier.
 - Color is currently caused primarily by iron oxidation, and staining is caused both by iron and manganese in the mine water forming precipitates on rocks and in sediments. The treatment process will remove both iron and manganese by more than 90%, reducing the potential for color.
 - For metals of concern, the treatment process typically removes metals between 95% and 99%.

Groups Working on Animas Issues

The Animas River Stakeholders Group (ARSG) mission is to:

- Improve water quality impacts resulting from historic mining
- Consensus building
- Usually meets on the 4th Tuesday of the month in Silverton or Durango
- More information: <http://www.animasriverstakeholdersgroup.org/>

Other Groups Active in addressing water quality issues in the Animas River:

- Animas Watershed Partnership <http://animaswatershedpartnership.org/>
- San Juan Citizen's Alliance <http://sanjuancitizens.org/>

State of Colorado, La Plata County and San Juan County officials are also active in understanding concerns and options for addressing impacts to the Animas River.



Durango 8-7



Near Shiprock 8-9



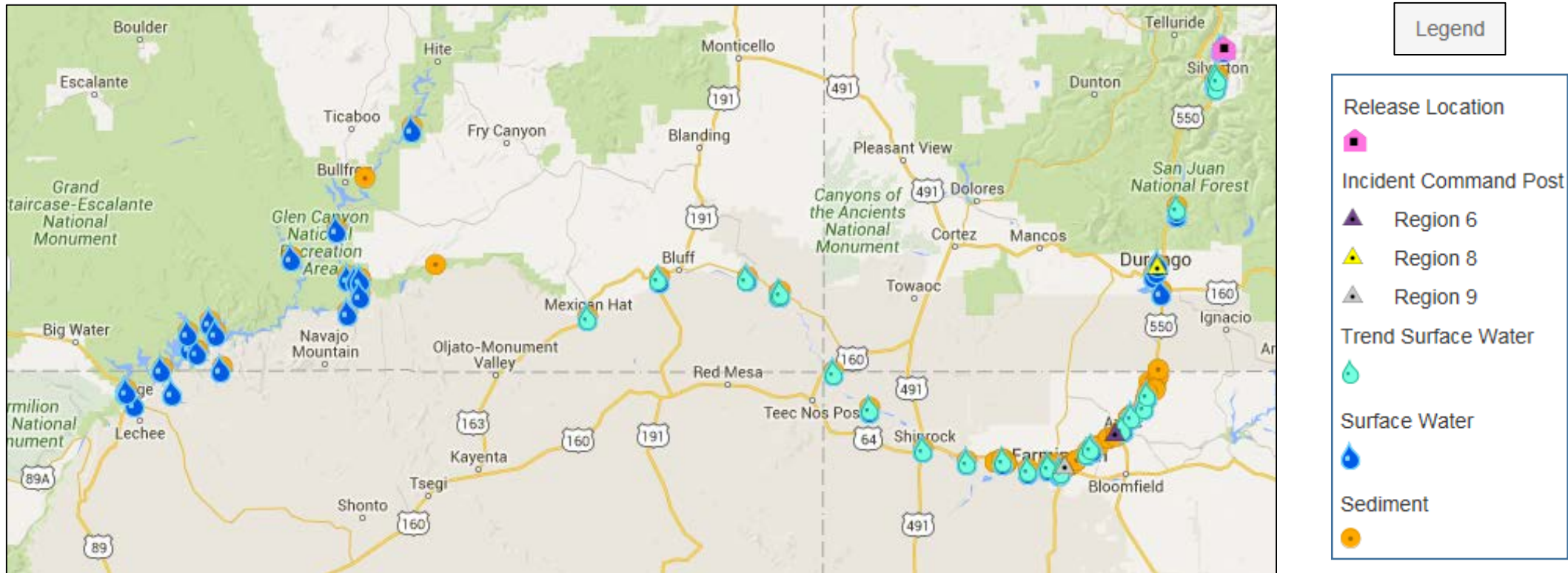
West of Farmington/
Near Kirtland 8-9



Near Farmington: Animas/
San Juan Confluence 8-8

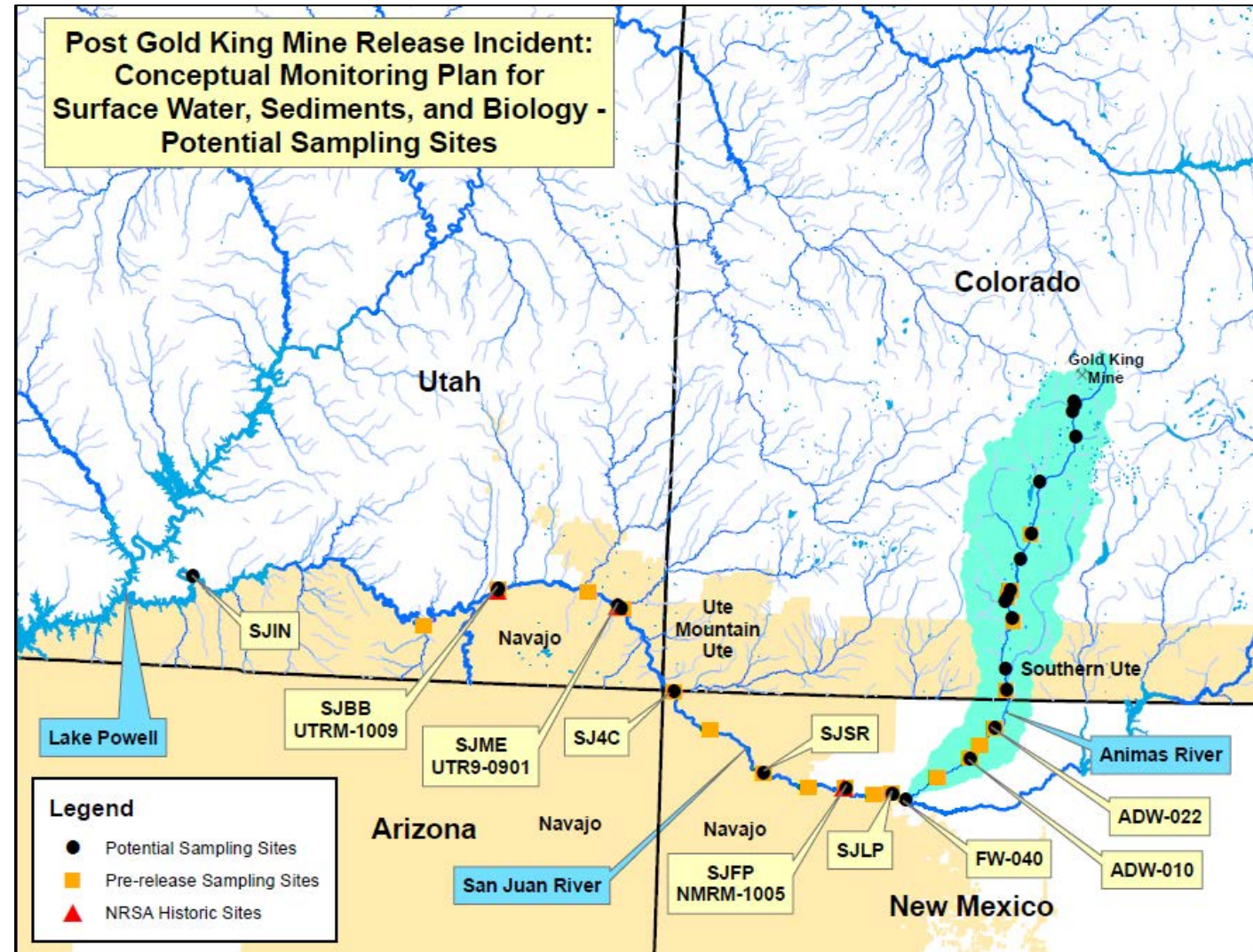
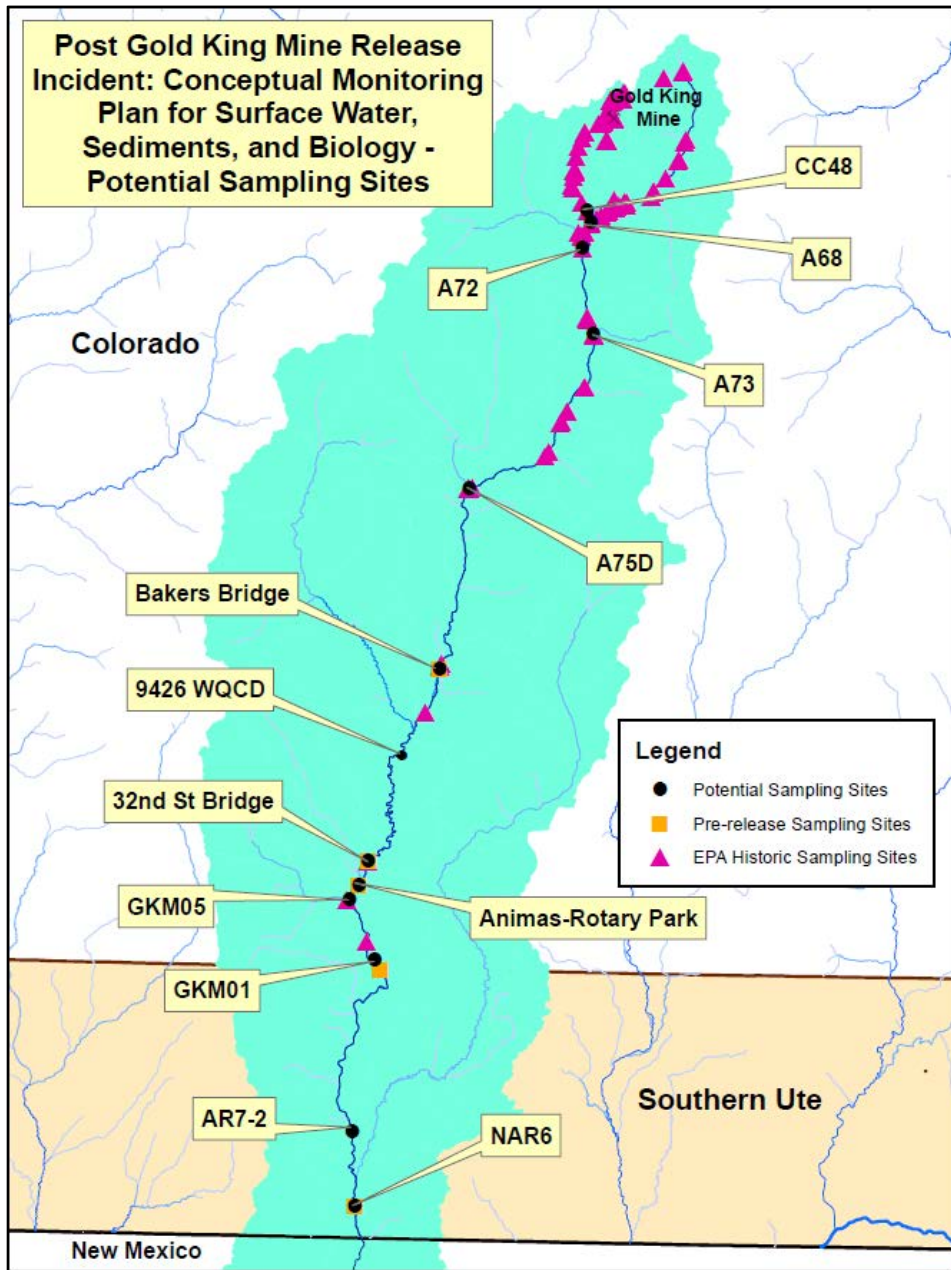
EPA Sampling Locations During Gold King Mine Response

- EPA and NN EPA agree that the San Juan River is now safe for irrigation and livestock.



Post-Gold King Mine Release Incident: Conceptual Monitoring Plan for Surface Water, Sediments, and Biology

- Objectives
- Monitoring (locations, frequency, analytes)
- Data Management and QA/QC
- Decision model for continued monitoring
- Stakeholder input



Resources Available to Assist Tribes in Developing Emergency Planning and Response Readiness Programs

Emergency Planning and Community Right-to-Know Act (EPCRA)

- Emergency planning
- Chemical reporting
- Emergency release notifications



EPCRA Sections

- 301 Establish State Emergency Response Commissions (SERCS);
Tribal Emergency Response Commissions (TERCs) &
Local Emergency Planning Committee (LEPCs)
- 302 Covered substances & facilities; set up notification
- 303 Comprehensive emergency response plan (LEPC)
- 304 Emergency release notification
- 311 Hazardous chemical inventory (MSDS)
- 312 Hazardous chemical inventory (Tier I or Tier II)
- 313 Toxic chemical release reporting (TRI)
- 321-29 Miscellaneous

Benefits of TERCs

- Proven, regulation based structure for emergency planning to serve relevant community needs
- Forum for Emergency Management, Public Health, and Environmental Management Collaboration
- Focal point for hazardous materials inventory information, hazard assessment and hazard awareness
- Demonstrated vehicle for training, grant and technical assistance coordination for chemical emergency preparedness and response
- Can support all-hazards planning and preparedness

Tribal Options for EPCRA Implementation

- Directly implement program within Indian Country
- Enter into cooperative agreements with another tribe, consortium of tribes, or a state
- Cooperative agreement with SERC
 - Tribe chooses to implement some requirements
 - State implements remainder
- Authorize SERC to perform functions of TERC within Indian Country
 - Tribe establishes a LEPC or joins off-reservation LEPC that works with the SERC
- Tribal chief executive officer operates as the TERC when a TERC is not established or cooperative agreement not developed

Information Resources

- EPRCA Implementation in Indian Country
<http://www2.epa.gov/tribal/emergency-planning-and-right-know-programs>
- U.S. EPA EPCRA Hotline: 1-800-535-020
- National Response Center: 1-800-424-8802
- EPA REGION 9 SERC, TERC and LEPC Liaison
Bill Jones
Emergency Prevention and Preparedness Section, Superfund
Division
(619) 235-4776, jones.bill@epa.gov

Information Resources (continued)

- Regional Response Team: <http://www.rrt9.org/>
 - Meets quarterly in locations throughout the Region
 - Great exercise, training and coordination opportunities
- EPA Tribal Portal: <http://www2.epa.gov/tribal>
- FEMA: <https://www.fema.gov/preparedness-resources-tribes>
- Inter-Tribal Councils in AZ, CA, NV
- Cal OES: <http://www.caloes.ca.gov/cal-oes-divisions/tribal-coordination>
- AZDEMA: <http://www.dem.azdema.gov/tribal/>
- ITERCNV: <http://www.itercnv.org/about.htm>
- Tribal Emergency Management Assn.: <http://itema.org/>

Grants – Some Examples

- General Assistance Program [EPA]
- Brownfields 128(a) [EPA]
- Hazardous Materials Emergency Planning [DOT]
- Tribal Homeland Security Grant Program [FEMA]

Questions

