

Long-Term Monitoring Plan

For the Gold King Mine Wastewater Spill

January 11, 2016



Governor Martinez created a Long Term Impact Team consisting of six executive agencies.

New Mexico's Team

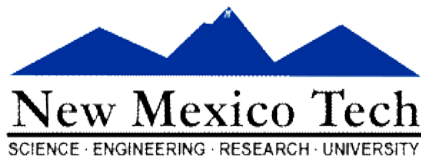
The following organizations are working together to protect public health, water quality and the environment.



New Mexico Department of Agriculture



All About Discovery!
New Mexico State University



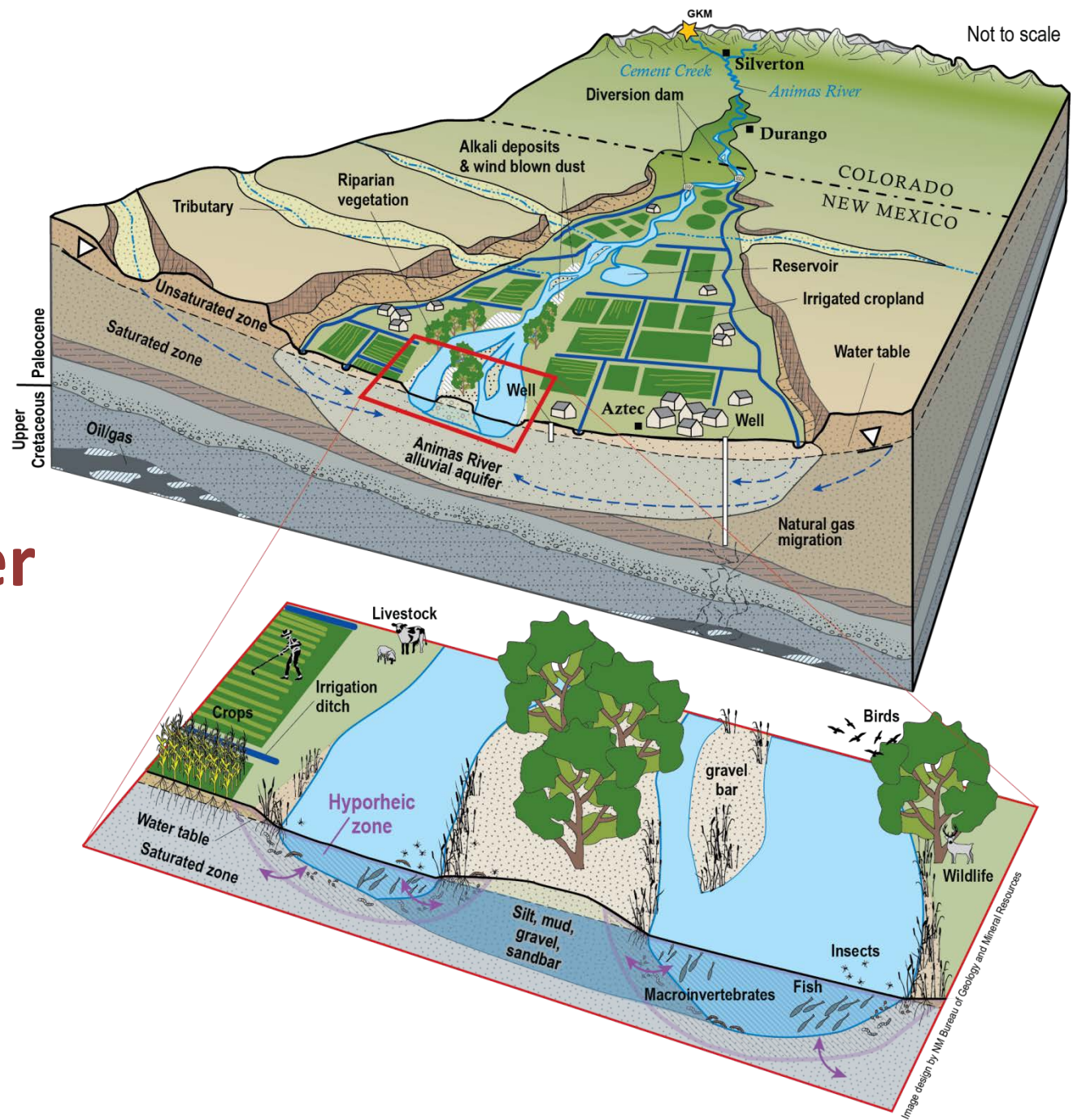
THE UNIVERSITY of
NEW MEXICO



**San Juan Soil and Water
Conservation District**



Animas River Watershed System



Long Term Monitoring Plan

- **Public Drinking Water Systems**
- **Surface Water Quality**
- **River and Irrigation Ditch Sediment**
- **Soil in Irrigated Croplands**
- **Hyporheic Zone (where ground and surface water mix)**
- **River-Aquifer Hydraulics**
- **Private Domestic Wells Under Influence of Surface Water**
- **Airborne Dust**
- **Plants and Animals**
 - **Benthic, aquatic and riparian organisms**
 - **Fish tissue**
 - **Wildlife**
 - **Livestock**
 - **Crops**
- **Human Biomonitoring**

Background Issues

To the extent possible, differentiate between the effects from:

- Natural geologic acid rock drainage
- Historical acid mine drainage
- Historical mine waste spills into the Animas watershed prior to August 5, 2015
- August 5, 2015 blowout

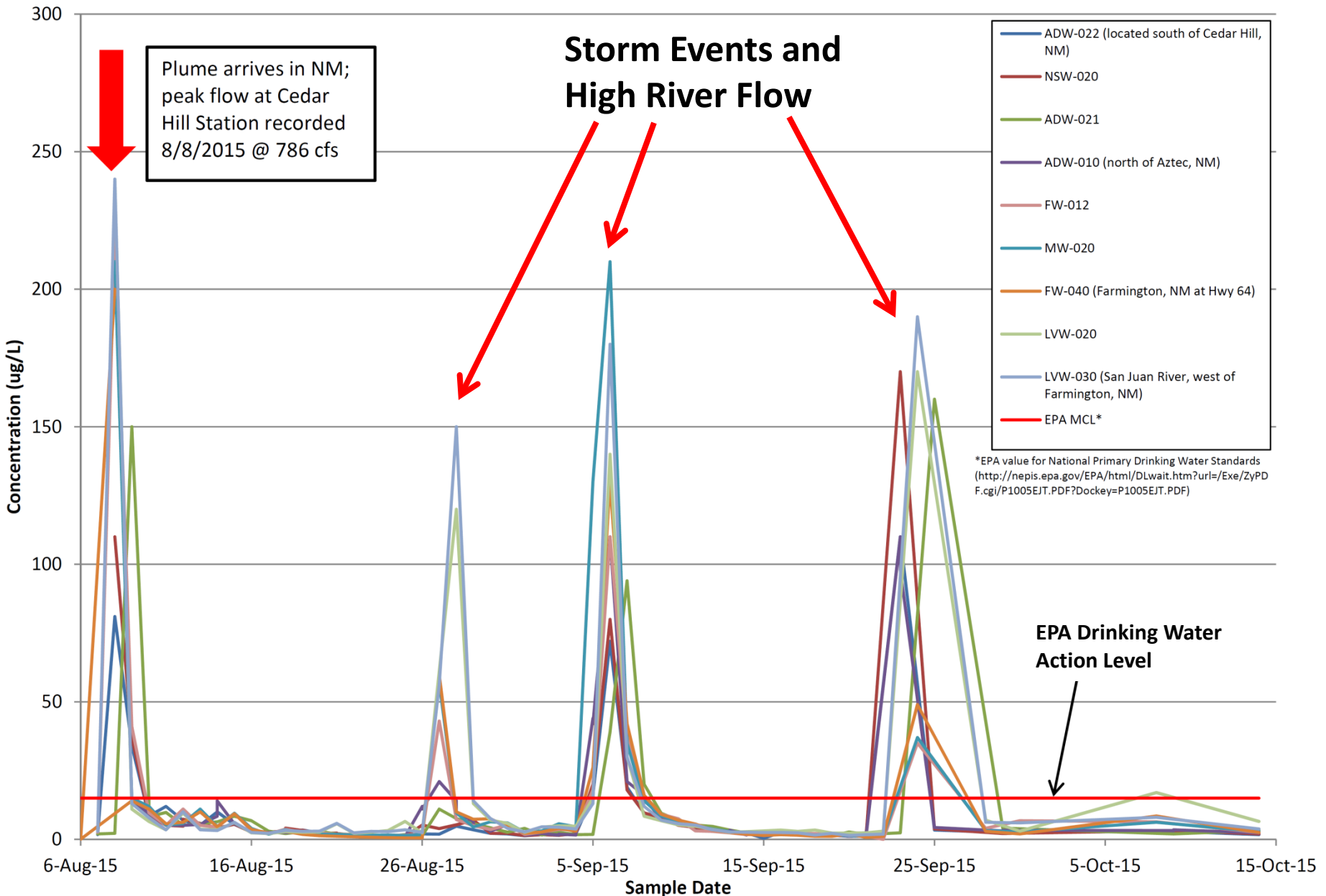
**Ferricrete deposit
in Cement Creek**



Transport and Fate of Solids Released by the GKM Spill



Total Lead in the Animas and San Juan Rivers New Mexico



EPA Statement on Agriculture

“We are certain that crops are safe for consumption. When the plume came through, irrigation ditches that impacted crops and livestock were shut down.”

<http://www2.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response>

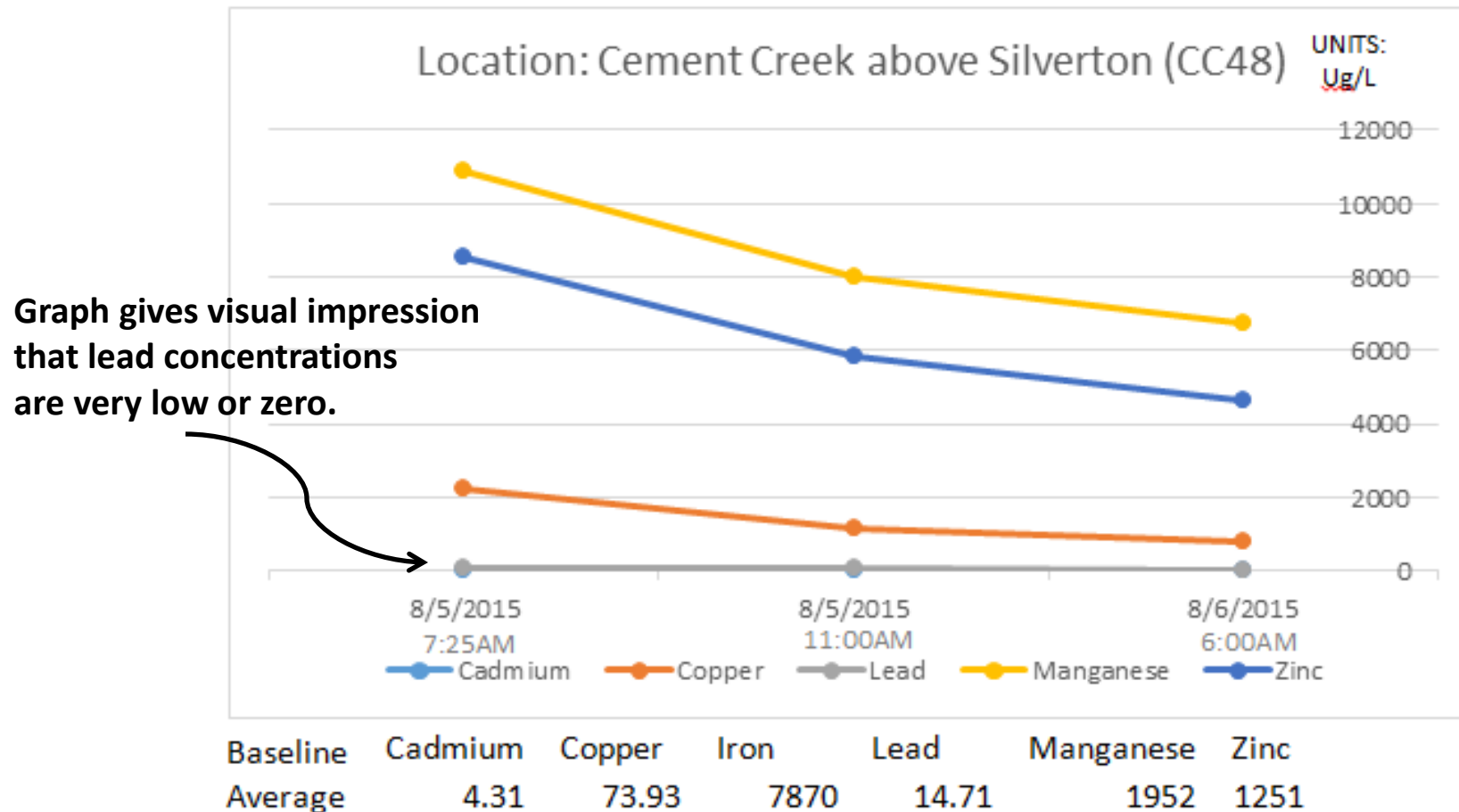


**Willett Irrigation
Ditch**

**Farmington, NM
August 8, 2015**

EPA Graph of Dissolved Metals in Surface Water

(Provided by EPA to NMED on August 7, 2015)



EPA Risk Levels for Lead in Sediment

mg/Kg (parts per million)

| EPA Screening Level for GKM Spill | EPA Screening Level for Residential Soil | EPA Screening Level for Plants | EPA Screening Level for Soil Invertebrates | EPA Screening Level for Birds | EPA Screening Level for Mammals | EPA Superfund Cleanup Level (Dallas, TX site) |
|-----------------------------------|--|--------------------------------|--|-------------------------------|---------------------------------|---|
| 20,000 | 400 | 120 | 1,700 | 11 | 56 | 500 |

Terrero Mine in Pecos, NM Before Cleanup

- **Acid rock drainage into Willow Creek**
- **Periodic fish kills in the Pecos River**



Terrero Mine After Cleanup

