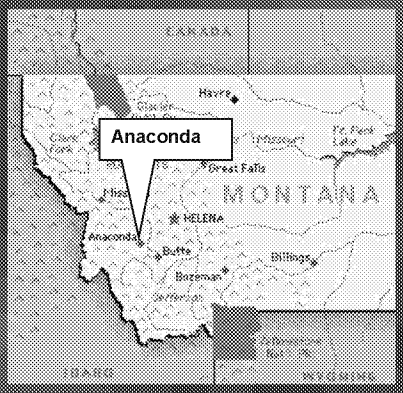
Anaconda Smelter NPL Site Proposed Plan

Anaconda Regional Water, Wastes, and Soils OU Proposed Plan for a ROD Amendment



Charles Coleman, RPM

Proposed Changes to the Surface Water Remedy

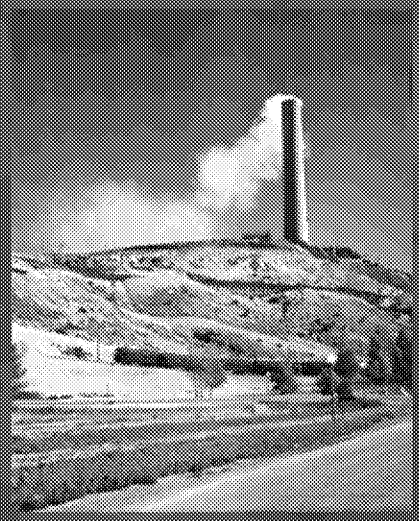
- Expand and enhance the current soil remedy to minimize contamination to surface waters;
- Provide a process to waive State of Montana acute and chronic water quality standards for copper, cadmium, lead and zinc, if necessary; and
- Replace with Federal water quality standards.

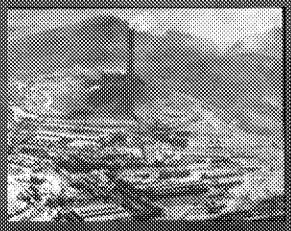
Public Input

- Original Proposed Plan was released in 2017.
- This Proposed Plan has be revised based on public comments received:
- No waivers until work is complete;
- Evaluation of impacts to endangered species (i.e., bull trout).

Site Background and Overview

- The Anaconda Smelter NPL Site contains the former Anaconda Company copper smelters that operated from the 1880s to 1980
- Wastes disposed over 6,000 acres
- Smelter emissions fallout dispersed arsenic, cadmium, copper, lead and zinc concentrations in soils over 170 square miles





Site Background and Overview (cont.)

- PRP Status – Atlantic Richfield Company
- Site Lead – EPA
- Site listed in 1983
- Records of Decision (RODs) completed for five operable units (OUS)
  - Mill Creek (1988)
  - Flue Dust (1991)
  - Old Works/East Anaconda Development Area (1994)
  - Community Soils (1996; amended 2013)
  - Anaconda Regional Water, Wastes and Soils (1998, amended 2011)

ARWW&S OU Remedy

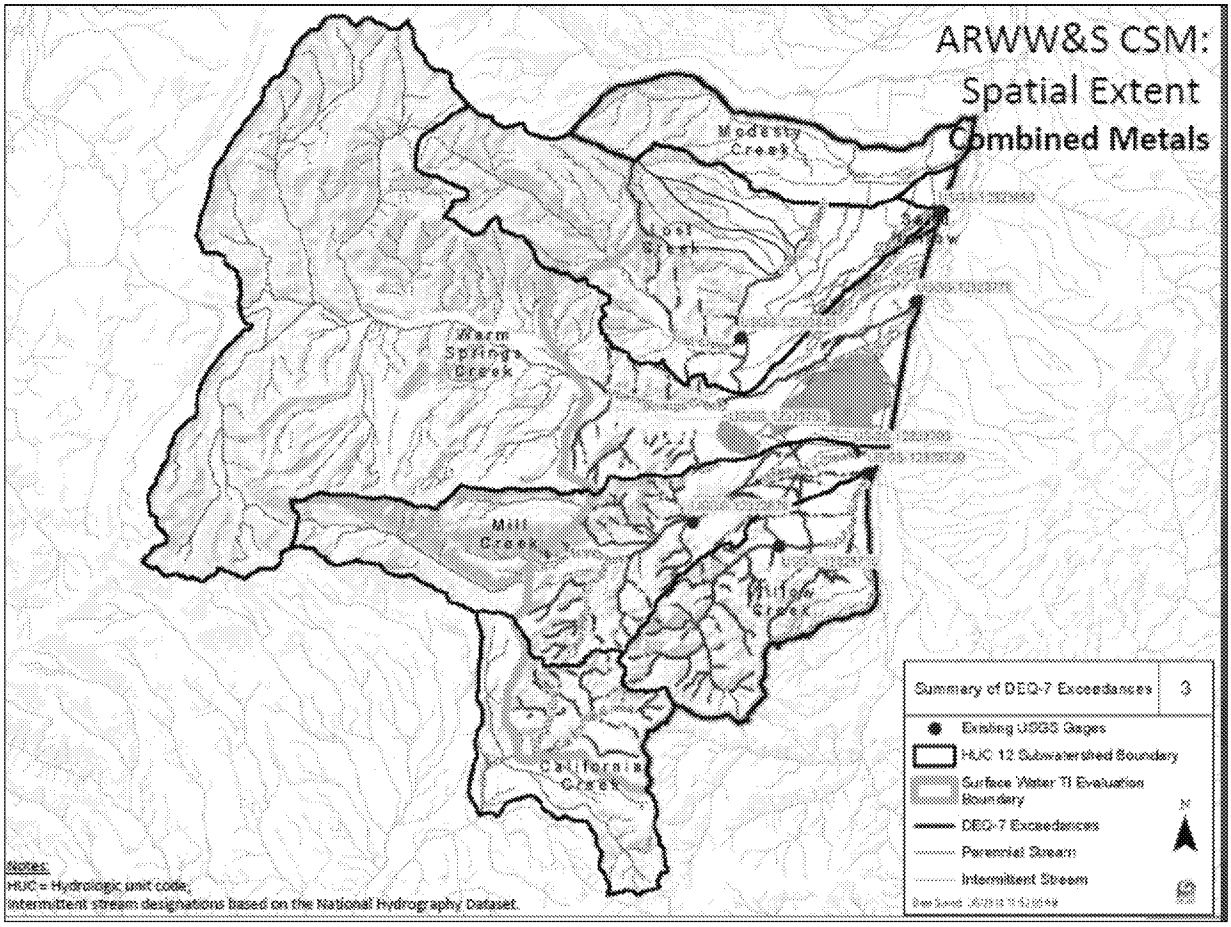
- The original Record of Decision (ROD) for the Anaconda Regional Water, Waste and Soils operable unit (ARWW&S OU) was signed in 1998.
- The ARWW&S ROD addresses the major waste disposal areas (tailings, slag), sitewide soils, surface water and groundwater.
- ARWW&S ROD was amended in 2011 to expand the remedy for soils, ground and surface water, which included lowering and waiving the drinking water standard for arsenic.
- Cleanup began in 2000 with over 12,000 acres remediated to date.

Remedy for Surface Water

- Minimize transport of contaminants to surface water to meet State of Montana surface water standards
  - Montana standards are based on Federal aquatic life water quality criteria, but use total recoverable metals concentrations instead of dissolved
- Return waters of the state to beneficial use
- The 1998 ROD allowed for an iterative process of completing remedial actions and monitoring, with consideration of additional work or conducting TI evaluations if standards are not achieved

Surface Water Remedy (cont.)

- The 1998 ROD required long-term surface water monitoring, short-term storm water performance monitoring, and specific actions for Mill, Willow, and Warm Springs Creek.
- The 2011 ROD Amendment expanded the surface water area of concern to include Lost Creek (in the north) and California Creek (to the south) and enhanced the remedy for Warm Springs Creek.
- Two surface water stations (upper and lower) on Lost, Mill, Willow and Warm Springs Creeks are currently monitored 6-8 times per year by the USGS.
- Data show frequent exceedances of State water quality criteria, especially during high flow events.


ARWW&S CSM:
Spatial Extent
Combined Metals
Modesty Creek
Lost Creek
Warm Springs Creek
Mill Creek
California Creek
Summary of DEQ-7 Exceedances
3
Existing USGS Gages
HUC 12 Subwatershed Boundary
Surface Water TI Evaluation Boundary
DEQ-7 Exceedances
Perennial Stream
Intermittent Stream
Notes:
HUC = Hydrologic unit code;
Intermittent stream designations based on the National Hydrography Dataset.

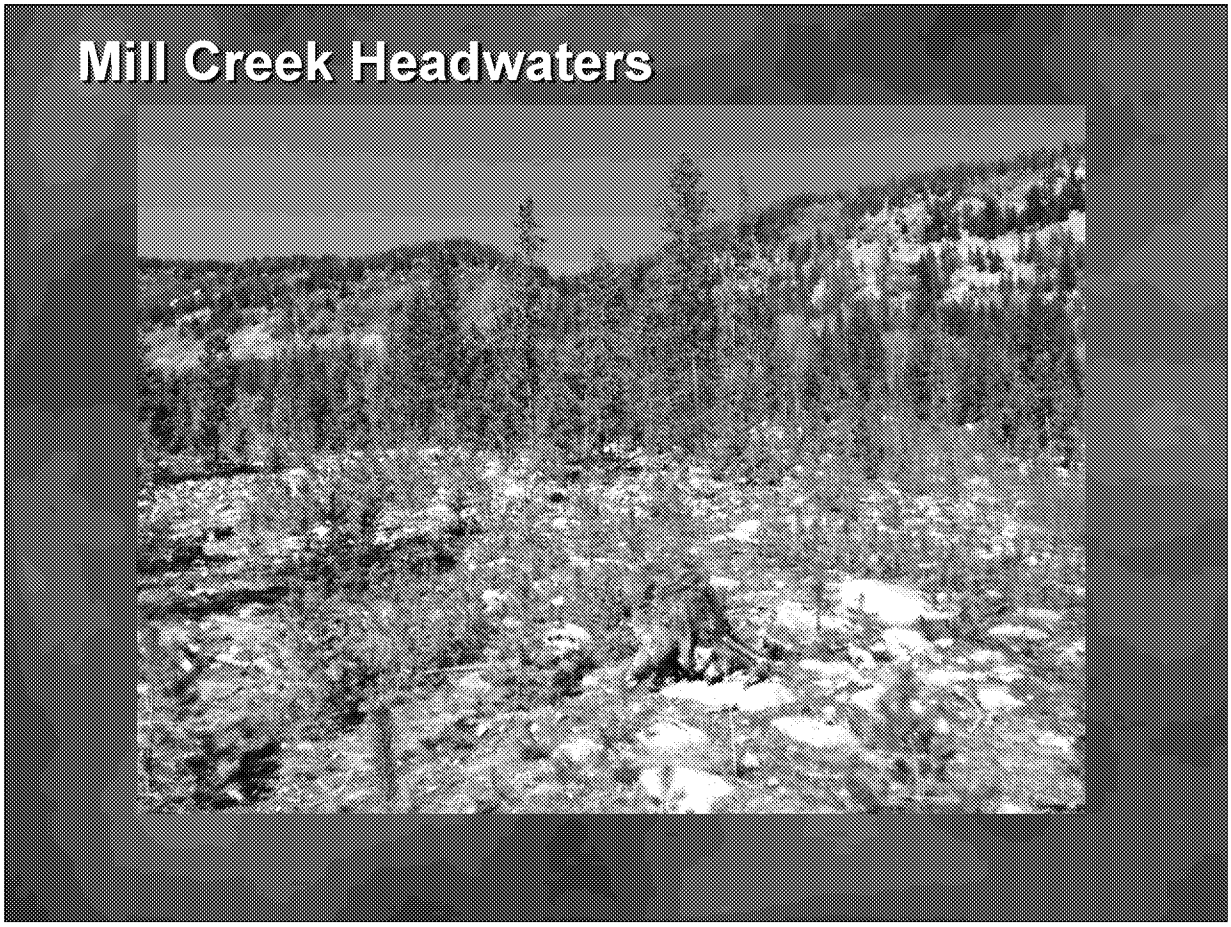
Why Changes are Needed

- Based on the existing data, in 2012 Atlantic Richfield informed EPA and DEQ that they do not believe planned response actions would meet State of Montana total recoverable metals surface water performance standards, and requested that a technical impracticability (TI) evaluation be completed to lead to a waiver of standards.

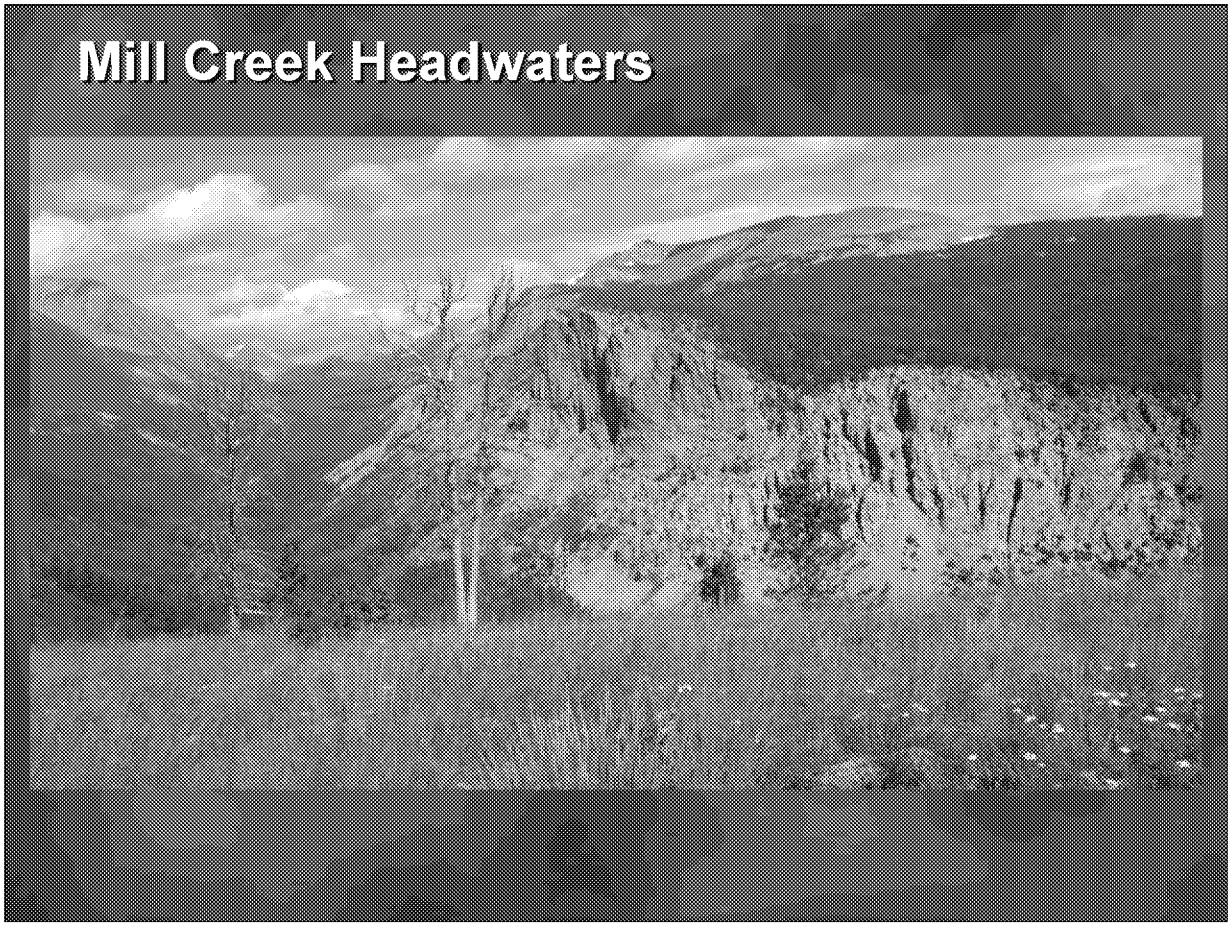
- EPA and DEQ determined that a TI evaluation was warranted.
  - EPA directed Atlantic Richfield to conduct TI evaluation
  - EPA and DEQ to provide oversight.

Surface Water TI Evaluation Analysis

- Surface water treatment screened out from detailed analysis
  - 2011 Arsenic TI evaluation concluded that it was too costly and required significant land disturbance, and would not address tributaries
- No barren areas with slopes less than 3H:1V were identified for further in situ soil treatment
- Soil removal of well-vegetated areas screened but removed from detailed analysis
  - Greater harm than good
- Supplemental work limited to storm water engineered controls, BMPs, and steep slope reclamation


Mill Creek Headwaters

Mill Creek Headwaters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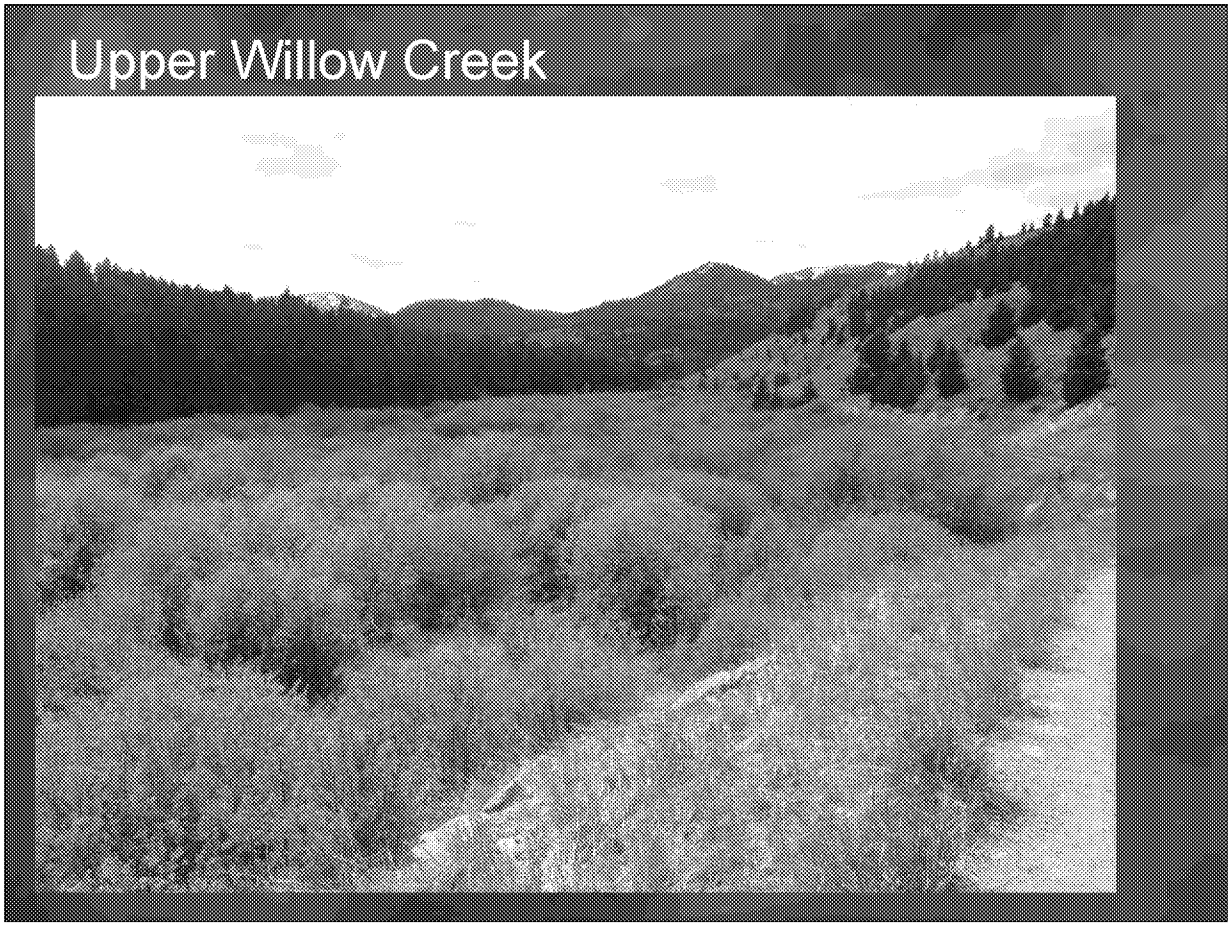
Upper Willow Creek

Preferred Alternative

- Expand and enhance the current soil remedies, including:
  - Additional storm water controls and BMPs
  - Enhanced steep slope reclamation
- Develop process to waive Montana DEQ-7 surface water total recoverable standards for Cu, Cd, and Pb, if necessary.
- Replace with federal water quality standards that are based on dissolved analysis.
- Continue to monitor surface water quality.

Protectiveness Summary

EPA believes the preferred alternative plan will:

- Protective of human health and the environment;
- Comply with new ARARs (federal standards);
- Cost effective; and
- Effective over the long term with fewer short term impacts