

An Overview of the Clark Fork Basin Superfund Complex see summaries on reverse

March 2021

Pre-Superfund

Mining activity started in Butte in 1864 with the discovery of gold and the Butte district evolved into the largest producer of copper in North America. Butte served as a globally important mining, milling, and smelting district during WWII. The mines produced waste piles and the mills and smelters produced large quantities of tailings that were disposed of in ponds or dumped into Silver Bow Creek. Smelters and mills in Butte and Anaconda also produced air emissions which distributed metal contaminants throughout the area, including arsenic, lead, mercury, aluminum, cadmium, copper, iron, silver, and zinc. Contamination was also caused in Butte and Ricker by the treating of wood for use as timbers in the mines and elsewhere.

1980s

Congress enacted Superfund in 1980 and EPA issued its first National Priorities List in 1983. It included three sites in the Clark Fork River watershed (Anaconda Smelter, Silver Bow Creek, and Milltown Sediments). The Montana Pole and Treating Plant site was added in 1987. Each site was divided into multiple portions, known as operable units, to address specific issues. Additional operable units were added over time and a few were combined or dropped. Emergency removals began in the 1980s to address immediate risks and remedial investigations and feasibility studies also began. The first record of decision (ROD) for cleanup was issued in 1984 to address the Milltown water supply. A ROD was issued for the community of Mill Creek in 1987. Amendments to those RODs were issued in 1985 and 1988.

1990s

Investigations and feasibility studies continued throughout the decade, and 10 additional RODs for cleanup were signed that allowed additional design and cleanup activities to begin. Three explanation of significant differences (ESD) documents were issued, and additional emergency removals were conducted at several sites.

2000s and beyond

Three additional RODs for cleanup were signed. Five ROD Amendments (RODAs) and seven ESDs were issued because revised cleanup standards or issues were identified during performance of cleanup. Design and cleanup continued, and the five-year review process ensured that cleanups were protective in the long-term.



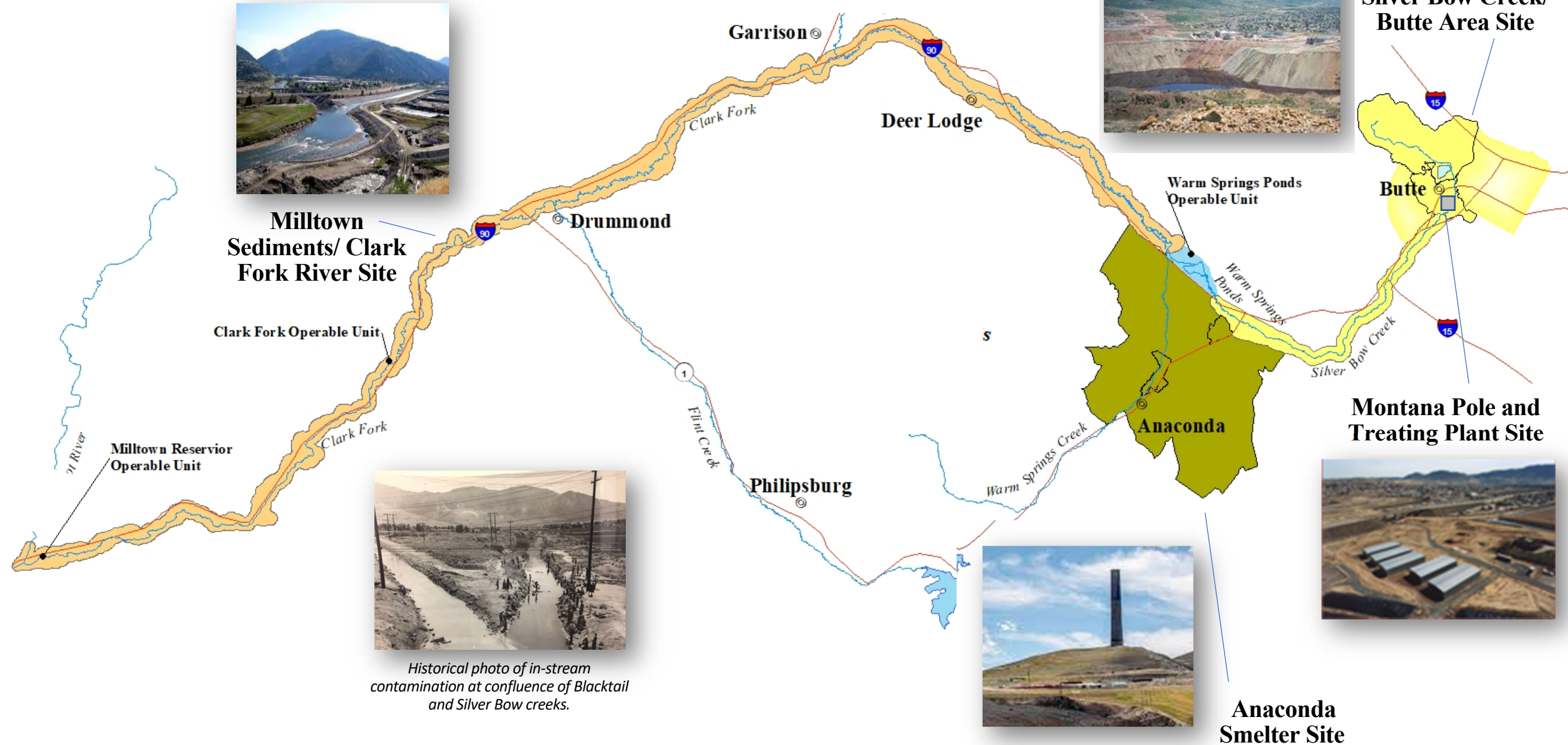
Historical photo of past mining in Butte that contributed to the contamination



Milltown Sediments/ Clark Fork River Site



Historical photo of in-stream contamination at confluence of Blacktail and Silver Bow creeks.



Lead and Support Agencies

Each site has a **lead agency** and a **support agency**. The US Environmental Protection Agency (EPA) is the lead agency for the Anaconda Smelter and Silver Bow Creek/Butte Area sites, although The Montana Department of Environmental Quality (DEQ) is the lead for the Streamside Tailings operable unit. DEQ is the lead for the Milltown Sediment/Clark Fork River and Montana Pole and Treating Plant sites.

A few useful and commonly used acronyms ...

- OUs** - Sites are often divided into distinct areas called **operable units** (OUs) to address geographic areas, specific site problems, or areas where a specific action is required. There are now 17 OUs in the Clark Fork Basin complex.
- CDs and RODs** - Cleanup work is conducted under legal instruments known as **consent decrees** (CDs) that are issued after a **record of decision** (ROD) documents the cleanup decisions. There have been 14 CDs and 15 RODs at these 4 sites.
- ESDs and RODAs** - If a ROD needs to be updated an **explanation of significant differences** (ESD) is used to document minor changes or a **ROD amendment** (RODA) is used to document major changes. There have been 10 ESDs and 7 RODAs at these 4 sites.

Some interesting numbers...

- **5 counties** (Silver Bow, Deer Lodge, Granite, Powell, and Missoula)
- **8 towns/communities** (Butte, Walkerville, Rocker, Opportunity, Anaconda, Deer Lodge, Milltown, and Bonner)
- **2 regulatory agencies** (EPA and DEQ)
- **8 government stakeholders** (US Fish and Wildlife Service; US Forest Service; US Bureau of Reclamation; US Geological Survey; National Parks Service; MT Fish, Wildlife and Parks; MT Department of Natural Resource Conservation; and MT Natural Resource Damages Program [NRDP])
- **1 tribe** (Confederate Salish Kootenai Tribe)
- **3 educational/ engagement groups** (Arrowhead, Citizens Technical Assistance Committee, and the Clark Fork River Watershed Education Program)
- **7 impacted creeks** (Silver Bow, Blacktail, Lost, Warm Springs, Willow, Mill, and Brown's Gulch)
- **1 river** (Clark Fork River)
- **1 wildlife management area** (Warm Springs)
- **1 inactive open pit mine** (Berkeley Pit)
- **1 former dam** (Milltown Dam)

Milltown Sediments/ Clark Fork River Site

- During Butte's mining heyday, mining waste flowed into the Clark Fork River and contaminated the sediment, surface water, and groundwater. Over 6 million cubic yards of contaminated sediment eventually accumulated behind the Milltown Dam which is above the confluence of the Clark Fork and Black Foot rivers.
- Notable areas: Milltown Sediments, which included the former dam, and Clark Fork River, which includes 120 miles of the Clark Fork River upstream from the dam location.
- Contaminants of concern are arsenic and various metals.
- A 2008 CD provided for performance of the Clark Fork River remedy (plus operation and maintenance) by the DEQ, using cash out money and funding, and for performance of natural resource damage actions by the State of Montana Natural Resource Damage Program.
- RODs for cleanup of Milltown Sediments and the Clark Fork River were issued in 2004 and the Milltown Dam was removed in 2008 allowing the Clark Fork River to run unimpeded for the first time since 1908. DEQ then began a phased cleanup of the 120-mile-long section of the Clark Fork River.
- The Clark Fork River ROD was amended in 2015 and DEQ continued its phased cleanup in the river.
- In 2021, DEQ completed cleanup at the Grant-Kohrs National Historic Site. Work on Phase 3 of the Clark Fork River will take place from 2021 to 2023 and will include removal of waste and reconstruction of 2½ miles of riverbank. Operation maintenance and monitoring continues in previously cleaned up areas.

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www.deq.mt.gov/Land/fedsuperfund/cfr

Clark Fork Basin Superfund Complex Site Summaries

For details, please visit the websites provided for fact sheets, reports, five-year reviews, and much more information. There are too many interesting details to be included in a single fact sheet.

Anaconda Smelter Site

- More than 300 square miles of land (including the communities of Anaconda and Opportunity) were impacted by smelter and ore processing wastes from copper concentrating and smelting conducted between 1884 and 1980. This included over 260 million cubic yards of mill tailings, furnace slag, and flue dust.
- Contaminants of concern are arsenic and various metals.
- Notable areas: Anaconda Regional Water, Waste & Soils [ARWW&S]; Old Works/East Anaconda; Beryllium Removal; Flue Dust; Arbiter Removal; Smelter Hill; Mill Creek; and Community Soils.
- A ROD was signed for the community of Mill Creek in 1986 and cleanup was complete in 1988.
- In the 1990s, RODs for cleanup were signed at ARWW&S (1998), OW/EADA (1994), Flue Dust (1991), and Community Soils (1996) and an ESD was issued (1995) for OW/EADA. Cleanup began at OW/EADA (including construction of the golf course) and was completed at Flue Dust.
- Cleanup to address arsenic in soils began in the 2000s at ARWW&S and Community Soils.
- The RODs for ARWW&S and Community Soils were amended in 2011 and 2013, respectively, and an ESD for Community Soils was issued in 2017 to address lead in cleanup. Waste management areas capped.
- In 2020, the ROD for ARWW&S was amended again and ESDs were issued for OW/EADA and Community Soils. The Beryllium, Flue Dust, and Arbiter areas were partially deleted from EPA's National Priorities List.
- Cleanup of contaminated soil, mine wastes, tailings, sediment, surface water and groundwater is more than 70-percent complete.
- EPA and Atlantic Richfield have set a goal for completion of construction activities by the end of 2025. The site will then be in operation and maintenance.

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www.epa.gov/superfund/anaconda-co-smelter

Silver Bow Creek/Butte Area Site

- Over 100 years of historical mining activities in and around Butte have contaminated soil, groundwater, and surface water in an area that stretches from Butte to Warm Springs and includes Butte, Rocker, 26 miles of stream and streamside habitat downstream from Butte, and the Warm Springs Ponds.
- Notable areas: Streamside Tailings, Mine Flooding [the Berkeley Pit], Warm Springs Ponds, Rocker, Butte Priority Soils, and West Side Soils.
- Contaminants of concern are arsenic and various metals.
- In 1987, the Butte Area was added to the existing site to make the Butte Area/Silver Bow Creek Site.
- In the 1990s, RODs for cleanup were signed for Streamside Tailings (1995), Mine Flooding (1994), Warm Springs Ponds (1990), and Rocker (1995).
- A ROD for cleanup was signed in 2006 at Priority Soils and an ESD was issued in 2002 for Mine Flooding.
- A new polishing plant was constructed for Mine Flooding that began discharging treated water offsite. Pumping from the Berkeley Pit began, and the water level in the pit has held steady since October 2019.
- An ESD was signed in 2014 for Rocker to address changes for arsenic in groundwater. The remedial investigation began at West Side Soils in 2019. NRDP began cleanup of the Parrott Tailings.
- Cleanup of Streamside Tailings was completed in 2019.
- Design and cleanup will continue for all but Streamside Tailings. In 2020, the ROD was amended for Priority Soils and a CD was signed to allow design and cleanup to progress. In the next few years, West Side Soils will move from investigation to ROD and then design and cleanup, if necessary. Warm Springs Ponds will move from an interim to a final ROD.

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www.epa.gov/superfund/silver-bow-butte

Montana Pole and Treating Plant Site

- From 1946 to 1984, the Montana Pole and Treating Plant operated a facility that treated a full line of post and pole wood products with an oily solution to slow decay. That treatment solution seeped into soils, groundwater, and surface water.
- The 40-acre site was added to EPA's National Priorities List in 1987 after an EPA emergency cleanup removed most of the heavily contaminated soil and equipment and minimized seepage to Silver Bow Creek.
- Unlike most other sites in the basin, the contaminants of concern are not metals, but instead include pentachlorophenol, polycyclic aromatic hydrocarbons, and dioxins.
- The DEQ-led site has undergone cleanup of soil, groundwater, and solid and hazardous waste. A water treatment plant continues to operate on the site and the treated water meets all ROD cleanup levels.
- Cleanup was successful for lowering some contaminants of concern. Dioxin levels in the soil did lower as a result of treatment but did not reach anticipated cleanup levels. A 2021 ESD detailed new cleanup levels for dioxin and pentachlorophenol to make the site more protective.
- Construction on the south side of the site is expected to begin in the summer of 2021 to place the treated soils in an engineered repository. The remaining 27 acres of the south side of the site will then be available for industrial use.
- A future decision document will address contamination remaining under the interstate.

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www.deq.mt.gov/Land/fedsuperfund/mtpole