

**Butte • Anaconda • Deer Lodge • Missoula
Clark Fork River Communities**

Cfwep.Org

Answers to SuperFund

**Remediation and Restoration
What are they?**

Superfund: 101

What does it mean to you?

What is happening now?

What is going to happen?

How **you can get involved.**



**All You Want to Know About the Clark Fork
Environmental Cleanup.**

Clark Fork Watershed Education Program • Cfwep.Org

How to Use This Guide

It is hard to grasp the full meaning when one hears the following:
“The Upper Clark Fork River basin from Butte to Missoula is the largest complex of Superfund sites in America.”

This publication will guide citizens in their basic understanding of this statement in the following ways:

If you need assistance using this guide, or have questions about a particular section, please feel comfortable contacting us, the Clark Fork Watershed Education Program (Cfwep.Org), either online at www.cfwep.org, via email info@cfwep.org, telephone 406-496-4832 or come visit us on the campus of Montana Tech of the University of Montana, Main Hall 008, 1300 West Park Street in Butte. There are also numerous groups and individuals whose contact information is listed for specific clean up areas.

This document is designed to allow an individual to gain a basic understanding of everything he/she wants to know about the Superfund cleanup process in the Upper Clark Fork Basin. Included within are:

- A broad historical overview of the entire area and its damages
- A map and timeline to put the damages in perspective
- Individual descriptions of cleanup sites;
- Contact information for agencies, individuals and groups involved in the cleanup.
- A number of Superfund and cleanup-related definitions to help one navigate the guide.

Citizens can use this as a guide and directory in their basic understanding of the Upper Clark Fork cleanup in the following ways:

- To provide a clear definition of cleanup on the larger scale of the entire Upper Clark Fork River, from its headwaters in Butte to its confluence with the Blackfoot River near Missoula.
- On the local scale, to clearly define and describe individual cleanup sites near the specific communities of Butte, Anaconda, Deer Lodge and Missoula.

For starters, it means a lot.

Just the massive size alone makes the Upper Clark Fork basin Superfund complex a complicated animal to understand – over 20,000 square miles make up the watershed from Butte to Missoula. Within this area are literally, dozens of individual cleanup sites. Each site has its own project managers, cleanup designs and schedules. Add to these issues a jumble of state and federal acronyms, standards and legal distinctions and definitions, and you’ve got a mess almost as daunting as the one that’s being cleaned up!

A two-page spread in the publication’s center includes a map of the entire watershed from Butte to Missoula. Also included on the center spread is a timeline that tracks important events. The timeline begins in the late 1800s when historical damages first began to occur in the Upper Clark Fork; it extends into the future, based on anticipated dates of cleanup and long-term treatment and management.

Lastly, the center map of the watershed is further divided into four smaller areas, named for the largest community

in that area: (1) Butte; (2) Anaconda; (3) Deer Lodge; and (4) Missoula. Each one of these areas is covered in further detail in the corresponding sections of the guide.

Each local section of the guide includes:

- A brief overview and description of each cleanup site within the area (some areas, like Butte and Anaconda, have several sites)
- Basic information on the area and sites’ present and future cleanup status; and
- A directory of individuals and groups in charge for each site that citizens may contact for more information and site updates.

Above all, everything in the guide is very important. There are hundreds of millions of dollars already spent on the cleanup and even more to come. As citizens of our communities, we have the great opportunity to get involved to help improve our future and our environment. We also have a responsibility to ourselves, our children, our grandchildren and so on.

By Matt Vincent
Cfwep.Org Director

Cfwep.Org: “Teaching Science Education @ Your Location!”

After months of careful thought and deliberation, the Clark Fork Watershed Education Program is proud and excited to unveil our organization’s new name... Cfwep.Org. Following is an introduction to our new image, which includes some answers to the burning questions you may have:

How do you pronounce it?

SEE• FWEP Sound funny? Perhaps, but we aren’t concerned. Cfwep.Org prides itself in being a regional leader in place-based education. It’s what we do and it’s who we are, regardless of how awkward the name might sound. After all, what local watershed organization has an acronym that rolls off the tongue? The BHCW (Big Hole Watershed Committee)? GHWG (Granite Headwaters Watershed Group)? MRWA (Milk River Watershed Alliance)? There just isn’t one. Cfwep.Org epitomizes the sound of place-based education, regardless of location. We talk the talk, but more importantly, we walk the walk.

What is Cfwep.Org?

Our new name is simply our old acronym with the added tag “dot Org,” to automatically direct our constituents

and prospective clients directly to our dynamic website, and to impress upon the same that we are “on line” and with the 21st century of education and technology. Therefore, the acronym still stands for Clark Fork Watershed Education Program. Cfwep.Org is an apolitical, non-advocacy, non-profit organization affiliated with Montana Tech of the University of Montana and the Montana Tech Foundation in Butte. We are housed in and part of the Department of Technical Outreach on Montana Tech’s campus.

We receive a majority of our funding through a contract with the State of Montana-Department of Justice’s Natural Resource Damage Program, the government entity charged with leading and managing the restoration of the Upper Clark Fork River Basin Superfund complex.

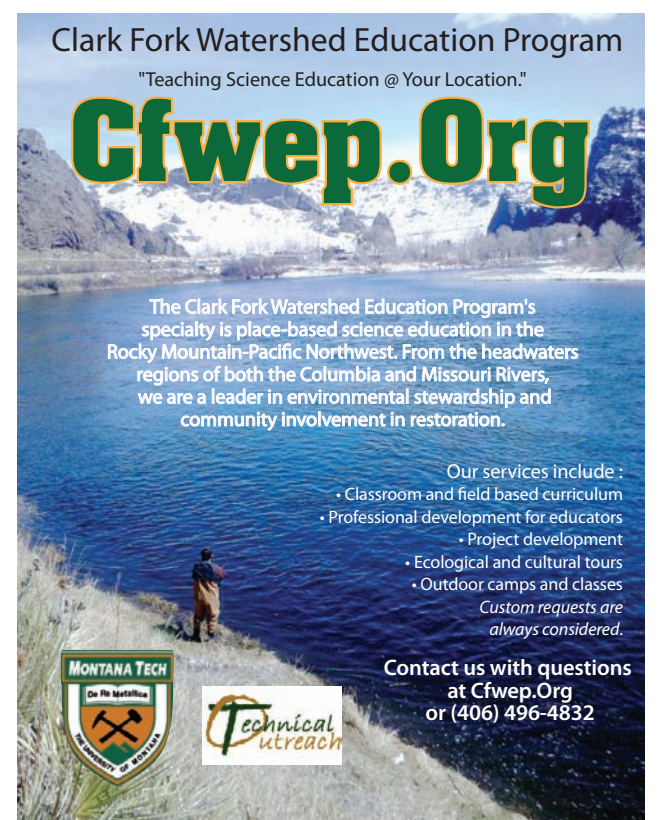
We are dedicated to fostering environmental stewardship and scientific decision making through place-based learning. To further instill this mission, we have added the tagline, “teaching science education at your location!”

Cfwep.Org started in 2005 as a place-based science education organization

serving the schools and communities in the Upper Clark Fork Superfund complex. We continue to excel in this area, but have expanded to serve schools and communities on both sides of the Continental Divide and across western Montana.

What is NOT Cfwep.Org?

Again, we are NOT a political nor advocacy group. While our name is similar, we are not the Watershed Education Network (WEN) or the Clark Fork Coalition of Missoula, although we regularly work with both.



Missoula/Bonner Superfund sites:

1. Milltown Reservoir and Sediments. This project involved the removal of the former Milltown Dam near the confluence of the Clark Fork and Blackfoot Rivers, and nearly 3 million yards of contaminated sediments from the floodplain upstream. Remediation is expected for completion near the end of 2011.

2. Clark Fork River. See information in Deer Lodge section.

Missoula/Bonner-area Restoration.

1. Milltown Restoration. In 2005, the NRDP received approximately \$13 million in total value for its natural resource damage claims, including the following:

- \$3.9 million for natural resource restoration from NorthWestern Corporation.
- NorthWestern's land (415 acres) and water rights at the site (2,000 cfs), which have an estimated value of about \$2.5 million
- a covenant from the U.S. Department of Interior (DOI) that the State's restoration of this site will meet Montana's bull trout obligations to DOI under the Streamside Tailings Consent Decree (value about \$1.4 million)
- implementation by ARCO's contractor, Envirocon, of the State restoration plan at the site in the remediation project area

(value about \$5 million)

In addition, Montana added additional monies from the 1999 ARCO settlement for restoration at the Milltown site.

2. Clark Fork River. See information in Deer Lodge section.

3. Mike Horse/Upper Blackfoot. In 2008, state and federal officials announced a \$37 million settlement of litigation with Atlantic Richfield Co. and ASARCO to remove the aging Mike Horse Dam and the contaminated tailings behind it, and to clean up and restore the Upper Blackfoot River and Mining Complex. ARCO and ASARCO will each pay the state \$8 million. The state will also receive a \$19.77 million allowed claim in the ASARCO bankruptcy, and the U.S. Forest Service will receive \$1 million to oversee the state's implementation of the project and a \$230,000 allowed claim for past costs. The dam sits in a floodplain at the headwaters of the Blackfoot River. The tailings behind it will be moved to a repository on higher ground. The project will also include cleanup of tailings along the Upper Blackfoot River, Beartrap Creek and Mike Horse Creek and the state will restore those streams to eventually bring back westslope cutthroat and bull trout

Missoula/Bonner

MISSOULA/BONNER CONTACTS

Milltown Reservoir Sediments

EPA Web Link: <http://www.epa.gov/region8/superfund/mt/milltown/>

EPA contact:

Diana Hammer
Project Manager
Region 8, Montana Office
Federal Building
10 West 15th St., Suite 3200
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Montana DEQ contact:

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Helena, MT 59620

(406) 841-5039

klarge@mt.gov

Natural Resource Damage Program
MILLTOWN

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Clark Fork River
Tom Mostad, Environmental
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tmostad@mt.gov

Mike Horse
Greg Mullen
(406) 444-0228
gmullen@mt.gov

HAZARDOUS MATERIALS (HAZWOPER) TRAINING COURSES

DEER LODGE: MAY 6-7, 13, 15 · BUTTE, MAY 23-27 · ANACONDA, MAY 23-27

FREE OF CHARGE — A \$500 SAVINGS

Many contractors will soon be hiring for cleanup work on the Upper Clark Fork. Did you know that you must complete a hazardous materials (HAZWOPER) course to qualify for these jobs? Be sure to take advantage of these FREE HAZWOPER courses taking place in Butte and Anaconda this spring—a \$500 value.

Finish the course, and then attend a Career Fair in June to meet local contractors who are looking to hire for the Superfund cleanup.

For information on the Butte course, please call Matt Vincent at 496-4832.

For information on the Anaconda course, please call the Anaconda Job Service at 563-3444

Or, visit www.clarkfork.org for more info on the courses or Career Fair.

brought to you by:



Cfwep.Org

Deer Lodge • Clark Fork River

Deer Lodge Superfund sites:

1. Clark Fork River. This site includes the Clark Fork River basin from the out-fall of Silver Bow Creek at Warm Springs Ponds downstream to the Milltown site near Turah. The majority of cleanup will take place between Warm Springs Ponds and the confluence of the Little Blackfoot River near Garrison. Settled in the 2008 Montana v. ARCO proceedings

2. Grant-Kohrs Ranch Remediation. This is part of the Clark Fork River remediation and restoration, but is specific to the federal lands on the Grant-Kohrs Ranch, an historic unit of the National Parks System. The Montana Department of Environmental Quality (DEQ), with National Park Service oversight, is responsible for the cleanup and restoration

Deer Lodge-area Restoration:

1. Upper Clark Fork Remediation and Restoration. The aquatic and riparian resources of the Upper Clark Fork River from Warm Springs Ponds to the Milltown

Reservoir have been degraded by a variety of hazardous substances that were released over the last 125 years from mining-related operations in the Butte and Anaconda areas. This degradation poses limited human health hazards in specific areas and has drastically reduced trout populations in the Upper Clark Fork River as well as the loss of plants, wildlife and wildlife habitat along the river’s floodplain. The principal sources of contamination are:

- tailings and contaminated soils in the Upper Clark Fork River floodplain, which affect thousands of acres, and
- contaminated sediments in the river’s bed and banks.

The Montana DEQ, with EPA oversight is in charge of the remediation. The Natural Resource Damage Program will work alongside DEQ and EPA to integrate restoration work with the remediation.

2. Upper Clark Fork River Basin Restoration Fund (see 1999 Montana v. ARCO settlement)

DEER LODGE CONTACTS

Clark Fork River
EPA Web Link: <http://www.epa.gov/region8/superfund/mt/milltowncfr/cfr/>

Brian Bartkowiak,
Project Manager
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EPA contact:
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Region 8, Montana Office
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Helena, MT 59626
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edwards.kristine@epa.gov

Eric Mason - CERCLA Project Manager
Grant-Kohrs Ranch National Historic Site
266 Warren Lane
Deer Lodge, MT 59722
Deer Lodge (406) 846-2070

Montana DEQ contact:

Natural Resource Damage Program
Clark Fork River
Tom Mostad
444-0227

Big Sky Reclamation is a land reclamation contractor that works on numerous environmental clean up and superfund sites in Montana, Idaho, Wyoming and Utah. The primary focus of BSR is vegetation construction and management. Services are: Soil amending, seeding, weed control, fertilizing, erosion control, integrated site management and vegetation assessment. In addition to construction BSR acts as a consultant for numerous engineering firms. BSR is accredited and licensed by the Montana Dept. of Agriculture. Big Sky Reclamation employs 8 full time and has offices in Butte and Anaconda.



BSR

Big Sky Reclamation

Mark Moodry
President

Phone: 406-565-5626
Cell: 406-490-5377

A Brief History of the Upper Clark Fork River Basin

Many things have changed in the Upper Clark Fork since non-Indians began occupying its regions in the mid-1800s. Agriculture, timber, transportation, railroads and the advent of cities resulted in big environmental changes. However, it is the impacts from the Anaconda Company's mining and smelting operations that are the only focus of the Superfund cleanup. The exact details of the Anaconda Company's impacts are further described in the Remediation and Restoration sections, but first it is important to revisit what the areas around here were like before the damage. In order to restore, we must first recall...

The Confederated Salish-Kootenai Tribes were the original people to live here, beginning some 15,000 years ago after the last ice age. Their place names for locations are perhaps the best descriptions of what the watershed once looked like.

The Silver Bow Creek area near Butte was known as "the place where you shoot them in the head." This place name was in reference to the vast numbers of native bull trout and westslope cutthroat that were so plentiful they could be harvested with a bow and arrow.

The area where the Clark Fork and Blackfoot Rivers meet at the site of the former Milltown Dam near Missoula was called "the place of the big bull trout."

For thousands of generations, these places remained largely unchanged.

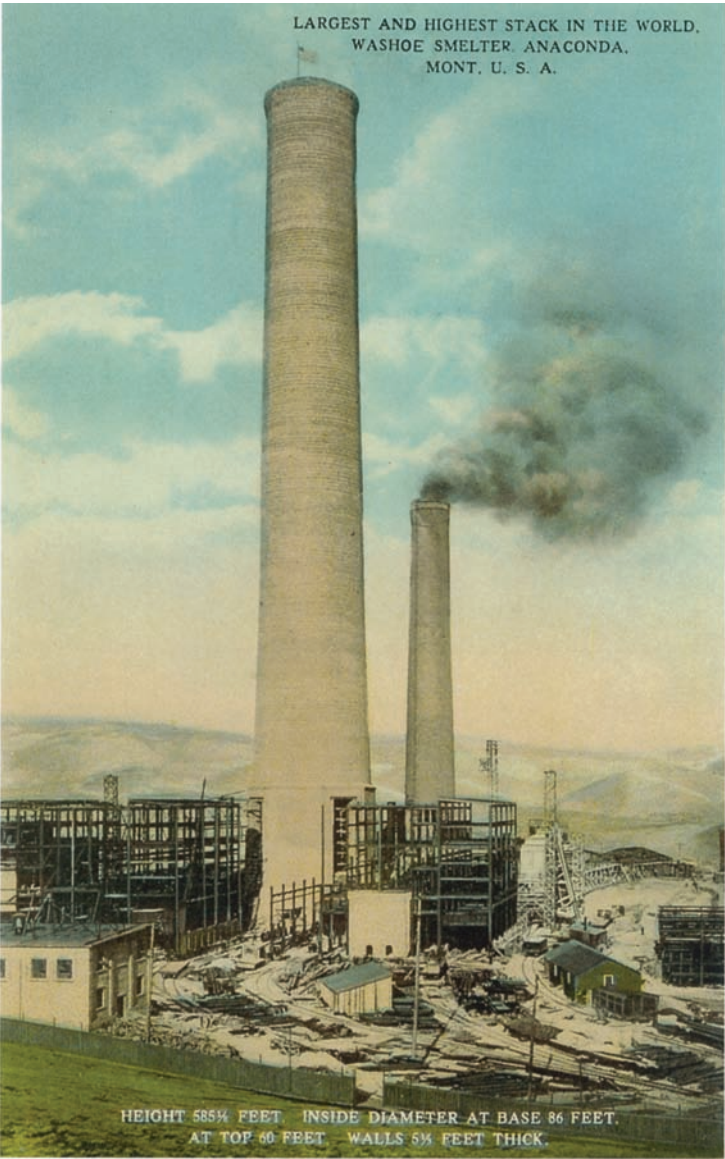
Fast forward to more recent times...

Gold was discovered in Silver Bow Creek near Butte in 1864 and mining began.

By the 1880s, gold and silver mining had been replaced by copper, the metal that gave Butte its name, "The Richest Hill on Earth." America had entered the electrical industrial age,

and copper was its most demanded commodity. Butte entered its "war of the copper kings" era. The

copper kings: William A. Clark, Augustus Heinze and Marcus Daly, controlled an underground mining workforce of thousands. Miles and miles of tunnels and shafts were dug deeper and deeper. Tons and tons of ore were processed on a daily basis, producing pounds and pounds of copper. The copper was exported to electrify America



and other parts of the world. But the tons and tons of waste stayed in the Upper Clark Fork, spread throughout the water, air and soil. Forests were cleared of trees. Railroads were connected from coast to coast. Rivers



were dammed and harnessed for their water and electrical power generation. Profits and progress were the only regulators in what was still, environmentally, the Wild West, a place without laws. In 1908, nature called – literally. The biggest flood on record rolled across the barren, toxic landscapes at the headwaters regions of the Upper Clark Fork in Butte and Anaconda.

The raging waters carried away bridges, barns, homes and waste. Millions and millions of tons of mining wastes washed out of Butte and Anaconda and were laid down across thousands and thousands of acres of the floodplains of Silver Bow Creek and the Clark Fork River. William A. Clark's newly built Milltown Dam at the confluence of the Clark Fork and Blackfoot Rivers held back the majority of wastes, saving the Missoula valley floor. Everything upstream was ravaged. After the flood waters subsided, business as usual continued.

Marcus Daly died in 1900, but the company he founded, Anaconda, lived on to win the war of

the copper kings. The Anaconda Company grew and grew; so did the cities of Butte and Anaconda. And so did the mess. Anaconda's copper production process covered the following bases:

- Ore was mined in Butte. For most of the life of the company, the mining method was underground. As the amount of copper in Butte's ore body decreased, the deep mines proved too costly. Operations shifted to the surface with open pit mining. The Berkeley Pit started in 1955 and became the world's largest truck-operated pit mine before its closure in 1982. The Montana Bureau of Mines and Geology estimates that over 29 billion pounds of copper resulted from Butte ores.

- Once the ore was out of the ground, it was shipped by railroad 25 miles to the Anaconda Reduction Works and Smelter in the city of Anaconda. The ore was milled (crushed) and concentrated and then smelted into nearly pure copper. In 1902, the Anaconda smelter pumped out approximately 30 tons of airborne arsenic and over 100 tons of acid-producing sulfur every day. This amount increased, as did the areas over which it was spread as the stack was built larger in 1919 to its present size: 585-feet tall and 90-feet

across at its base.

»

- The copper from Anaconda was then shipped to the Anaconda Company's refinery in Great Falls. Here, the copper was purified and manufactured into wire, sheeting, piping, etc.

As part of the Berkeley Pit operations, a new concentrator was constructed in Butte that replaced the old one in Anaconda by 1960.

The federal Clean Air Act was passed in 1970, calling for costly improvements to the smelting operations in Anaconda.

The Clean Water Act passed in 1972 and required treatment of waters leaving the new concentrator in Butte, adding addi-



tional costs.

In 1977, the Anaconda Company sold and transferred everything – including its environmental liability – to oil giant Atlantic Richfield Corporation, better known as ARCO. ARCO closed the Anaconda smelter in 1980, the same year that the Superfund law was born.

The Berkeley Pit ended operations in 1982 and its underground pumps were shut off in 1983, the same year that the complex of Upper Clark Fork Superfund sites was born. Also in 1983, the State of Montana filed a massive lawsuit against ARCO for past environmental damages to our natural resources and the public's lost use of them. Both the Superfund law and the State of Montana v. ARCO lawsuit are described in their own section.

The Upper Clark Fork has been the largest complex of Superfund sites in America for close to 30 years. Cleanup activities have been ongoing for nearly that long. Still, extensive improvements in the environmental conditions throughout the watershed will continue for many years to come. As one present-day environmental group in Butte quips, "it's not easy cleaning up after copper kings."

Hopefully, this guide can at least make it easier to understand.

Cfwep.Org

Matt Vincent - Editor

Frank Ponikvar - Layout & Design

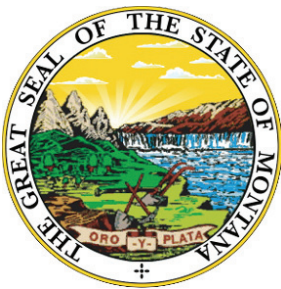


TREC, Inc.
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Bozeman • Butte • Casper, WY

- Engineering / Design
- Environmental Due Diligence
- Project / Construction Management
- Feasibility Studies
- Permitting
- Environmental Monitoring
- Database Management



The State of Montana vs ARCO lawsuit



In 1983, the State of Montana filed a massive lawsuit against the Atlantic Richfield Company (ARCO) to recover damages for:

- injuries to the water and land resources and fish and wildlife populations in the basin
- the public's lost use and enjoyment of these injured resources and populations

The Natural Resource Damage Program (NRDP) was formed in 1990 and is under the Attorney General in Montana's Department of Justice. NRDP performed an intensive assessment between 1990 and 1995 to determine the monetary cost, or damages, of these injuries. The damages claim totaled \$765 million dollars. More than half of this amount was assigned to the public's lost use and enjoyment of the damaged resources.



The lawsuit went to trial in 1997. The Confederated Salish and Kootenai Tribes were added to the lawsuit in 1997. The State and the Tribes reached the first of a series of settlements (described below) in 1999. This completed the settlement for the Tribes; the State reached additional settlements with ARCO in 2005 and 2008. In 2008, the State of Montana also settled a lawsuit to recover damages in the Upper Clark Fork River Basin against ARCO and ASARCO (another former mining company) on the Mike Horse Dam, a historic mining site located at the headwaters of the Blackfoot River near Lincoln. Also in 2008, but not located in the Upper Clark Fork River Basin, the State settled with ASARCO for injuries to natural resources at the former East Helena smelter site and at the Black Pine mine site near Superior.

Settlements 1999

\$230 million was awarded to the State for the following: \$129 million to establish the Upper Clark Fork River Basin Restoration Fund; \$86 million for the total cleanup (re-

(Continued on Page 12)



The Superfund Law: What is it?

In 1980, U.S. Congress passed what is known as the Superfund Law. The law was created to clean up the nation's most polluted areas. Superfund was a very important law for the environment. Unlike the Clean Air (1970) and Clean Water Acts (1972) that set pollution limits for active industrial sites, Superfund was the first law to address old industrial messes that were made by companies long before regulations like the Clean Air Act and Clean Water Act prevented it. A National Priorities List (NPL) of these historically polluted sites was compiled in 1982. Hazardous substances on these sites posed serious risks to both humans and the environment. All of the sites that make up the Upper Clark Fork River Basin complex were on that list by 1983. There are four sites on the national list that make up the Upper Clark Fork River Basin complex. Each one of these sites has a number of sub-areas. Montana has 17 total sites on the national priorities list.

The law was called "Superfund" because it created a trust fund using taxes levied on some of the country's most polluting industries, such as chemical and petroleum corporations. U.S. citizens also pay into the Superfund. More information on the federal Superfund law can be found on the Internet at the EPA's website: <http://www.epa.gov/superfund/>.

The Environmental Protection Agency (EPA) is the lead agency in charge of Superfund. EPA's responsibility is to identify what corporations and parties are responsible for cleaning up areas and to make sure the sites are cleaned up to meet state and federal environmental laws for air, soil and water (both surface and groundwater). These laws are the focus of remediation, as described below. The primary responsible party for the Upper Clark Fork River Basin complex of Superfund sites is ARCO, now a subsidiary of British Petroleum. The EPA is assisted in its Superfund supervisory role by the State of Montana's equivalent agency, the Department of Environmental Quality (DEQ).

Because of settlements in the State of Montana v. ARCO lawsuit (described in the next section), the Montana DEQ – not the EPA – is the lead agency in charge of the cleanup at the Silver Bow Creek and Clark Fork River Superfund sites. EPA assists DEQ on these sites. In addition to the EPA's national priority list of Superfund sites, the State of Montana has its own version of the Superfund law to address cleanup sites that are not on the national list. Here is the DEQ's website on Montana's Superfund law: <http://www.deq.mt.gov/statesuperfund/Cecra.mcp.x>.

Remediation and Restoration? What's the difference?

Remediation

The word *remediation* comes from the root word "remedy," which means "something that corrects or counteracts," from the dictionary. In the Upper Clark Fork River Basin Superfund complex, remediation is the term used to describe the cleanup work required by the EPA or the Montana DEQ on Superfund sites. Both the EPA and DEQ require that cleanup work meets legal limits of contamination for air, water and soils. These limits ensure that contamination is cleaned up to a level that is safe for human health and the environment.

A number of remediation-type cleanups have been performed or are ongoing in the Upper Clark Fork. In places like Butte and Anaconda, some of the early actions back in the 1980s and 1990s were termed "removal" or "time critical" because humans and the environment were at a very high risk from the hazardous wastes left by historic mining and smelting. Wastes were removed or capped to protect humans and the environment. A list of all of Montana's federal Superfund sites can be found on the EPA Superfund website here: <http://www.epa.gov/region8/superfund/mt/>.

In general, remediation work performed under the Superfund Law works like this:

- 1) site is listed and responsible parties are identified;
- 2) the locations of hazardous substances and their threats to humans and the environment are investigated and studied;
- 3) EPA comes up with a list of cleanup alternatives and proposes one or a combination of those alternatives;
- 4) responsible parties and the public provides review and comments on the proposed plan;
- 5) EPA considers the public comments and

makes changes in the proposed plan which it believes are appropriate;

6) EPA issues a "Record of Decision," which is a more detailed description of the cleanup plan;

7) either an agreement to perform the Record of Decision is signed by the responsible party or EPA orders the responsible party to implement the ROD; and

8) the responsible party implements the Record of Decision. Once the clean-up is completed, there is usually long-term management and maintenance of the cleaned up site to allow for appropriate uses by private entities and/or the public.

Restoration

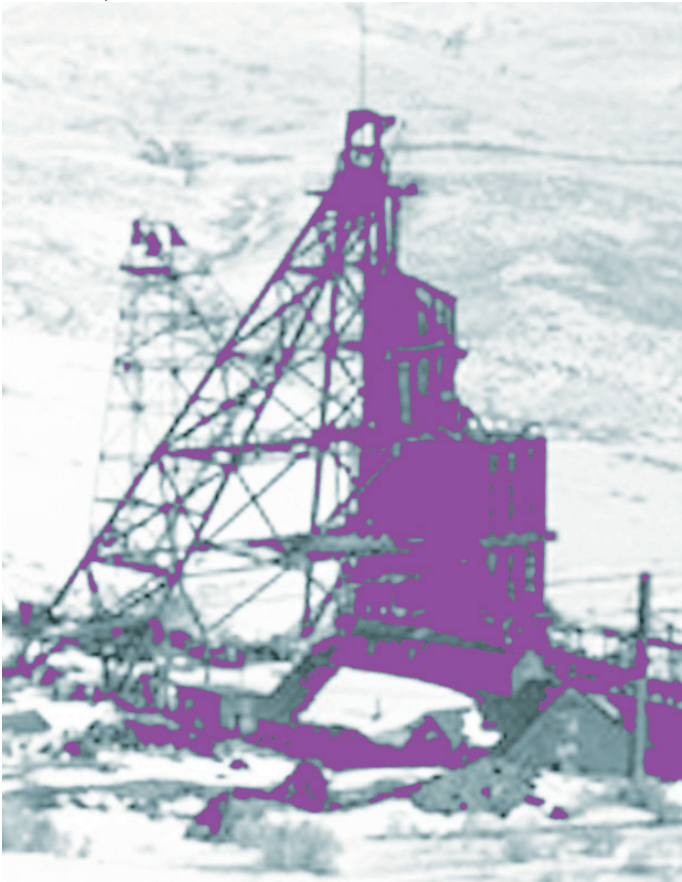
Restoration is generally defined as "the act of returning something to its original or former condition." In the case of the Upper Clark Fork River Basin, restoration returns resources to the condition they would have been in absent the injuries caused from mining, milling, and smelting. When compared to remediation (above), restoration is usually a much higher standard of cleanup. Whereas the EPA and DEQ are in charge of Superfund remediation work, the State of Montana-Department of Justice's Natural Resource Damage Program (NRDP) is the lead agency on restoration work. In areas of the Upper Clark Fork River Basin where remediation is ongoing, or has yet to begin, the NRDP, DEQ, and EPA work together to maximize the effectiveness of cleanup and the money available. This is accomplished by coordinating restoration and remediation activities to occur together. Two excellent examples of this coordination of remediation and restoration are the Milltown Dam project and the Silver Bow Creek cleanup. Restoration will be coordinated with the remediation at the Clark Fork River and Smelter Hill Area Upland site, too.

In addition to the restoration settlements to address specific sites, like Milltown, Silver Bow Creek, and the Upper Clark Fork River, there is another program in place to fund a variety of other restoration projects in the Upper Clark Fork River Basin. The Upper Clark Fork River Basin Restoration Fund was established under the 1999 settlement with \$129 million dollars. Since 1999, roughly \$ 109 million has been approved for 118 projects in Butte-Silver Bow, Anaconda-Deer Lodge, Powell, Granite, and Missoula counties. The restoration grants program has mostly spent only the interest on this settlement money. Over \$100 million still remains in the fund. Under the restoration grants program, projects are eligible for possible funding if they propose to:

- Restore aquatic, groundwater, or terrestrial resources in the Upper Clark Fork River Basin that were lost or injured as a result of contamination by past mining and smelting operations;
- Replace these injured resources (aquatic, groundwater, or terrestrial) with equivalent or similar natural resources in the Upper Clark Fork River Basin. An example of this is the purchase of private, undamaged land or streams for both wildlife and the public's use.
- Replace the public's lost use of or service from a natural resource. The key example of this is replacement of Butte

and Anaconda's drinking water supply and distribution systems.

The restoration grants program under the Upper Clark Fork River Basin Restoration Fund is guided and managed by NRDP. Two other groups, the Upper Clark Fork River Basin Remediation and Restoration Citizens Advisory Council (Advisory Council) and the Governor's Trustees Restoration Council (Trustees Council), also make decisions on which projects are eligible for funding. The Governor of Montana is the Trustee of the settlement monies and has final decision-making ability. A long-range plan proposal developed by the Advisory Council is currently under consideration by the Trustees Council and the Governor. Unlike the existing annual grants program, this long range plan would significantly change the restoration grants program process.



Anaconda

The Smelter City

Anaconda Superfund Sites:

1. Silver Bow Creek/Butte Area. The Silver Bow Creek and Warm Springs Ponds areas are in Deer Lodge County and near Anaconda.

2. Anaconda Company Smelter. Location of the former Anaconda Minerals Company (AMC) ore processing and smelting facilities. Soils, surface water and groundwater are contaminated with heavy metals and arsenic. The site covers an area of approximately 300 square miles. Cleanup at the site has been ongoing since the 1980s and will continue.

- ACM Smelter Hill
- Community Soils
- Old Works/East Development

• Anaconda Regional Waste, Water, Soil. Includes the Opportunity Ponds, Warm Springs Creek and a number of other areas in the Anaconda-Deer Lodge area.

3. Clark Fork River. This site includes the Clark Fork River basin from the outfall of Silver Bow Creek at Warm Springs Ponds downstream to the Milltown site near Turah. The majority of cleanup will take place between Warm Springs Ponds and the confluence of the Little Blackfoot River near Garrison. Settled in the 2008 Montana v. ARCO proceedings.

Anaconda-area Restoration.

1. Anaconda Uplands. From the 1880s to 1980, large volumes of hazardous substances were released into the air by the Anaconda Smelter. These emissions were deposited onto the land, resulting in severe loss of vegetation and injuring nearly 17.8 square miles of land in the mountains surrounding the city of Anaconda. The loss of vegetation resulted in widespread erosion, topsoil loss, degraded wildlife habitat and significantly reduced wildlife in the area.

This claim area includes portions of:

- Smelter Hill (4,653 acres)
- Stucky Ridge (2,409 acres)
- Mount Haggin Game Management Area (4,304 acres)

The \$13.2 million designated for this site under the 2008 settlement will address the most severely injured portions of these areas, including areas subject to the Anaconda Record of Decision.

2. Silver Bow Creek Remediation and Restoration (see information in Butte area).

3. Upper Clark Fork Remediation and Restoration. The aquatic and riparian resources of the Upper Clark Fork River from Warm Springs Ponds to the Milltown Reservoir have been degraded by a variety of hazardous substances that were released over the last 125 years from mining-related operations in the Butte and Anaconda areas. This degradation poses limited human health hazards in specific areas and has drastically reduced trout populations in the Upper Clark Fork River as well as the loss of plants, wildlife and wildlife habitat along the river's floodplain. The principal sources of contamination are:

- tailings and contaminated soils in the Upper Clark Fork River floodplain, which affect thousands of acres, and
- contaminated sediments in the river's bed and banks.

The Montana DEQ, with EPA oversight is in charge of the remediation. The Natural Resource Damage Program will work alongside DEQ and EPA to integrate restoration work with the remediation

4. Upper Clark Fork River Basin Restoration Fund (see 1999 Montana v. ARCO settlement)

ANACONDA CONTACTS

Anaconda Co. Smelter Site

EPA Web Link:

<http://www.epa.gov/region8/superfund/mt/anaconda/index.html#10>

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EPA/DEQ Five-Year Reviews

EPA or the lead agency conducts five-year reviews following the start of a Superfund cleanup when contamination is left on the site. These reviews are repeated every five years. We use these reviews to determine:

- How the remedy is working.
- If the remedy remains protective of human health and the environment.

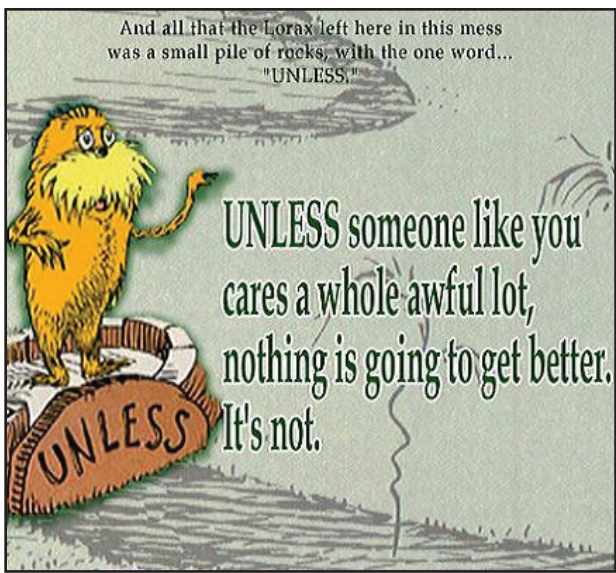
EPA is currently conducting the third five-year review. The purpose of this review is to determine whether the remedy at the site, as selected and implemented subsequent to the Record of Decision (ROD), is expected to be protective of human health and the environment. The methods, findings and conclusions of the review are documented in the five-year review report, which is expected to be completed in June 2011 and will be posted on this Web page. A five-year review fact sheet (site update) has been developed and is available from EPA.



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406.563.8276



Citizen Involvement

Stewardship Means You



Dr. Seuss perhaps characterized environmental stewardship best in his 1971 classic The Lorax: "...UNLESS someone like you cares a whole awful lot, nothing is going to get better. It's not."

But caring is only part of the equation. Caring enough to learn about the issues and to speak up and get involved is the key to:

- Making sure the remediation and restoration projects in your area are the best projects for the communities
- Insuring that all of cleanup work performed in the Upper Clark Fork Basin lasts to provide healthy natural resources and a vibrant living and working environment for our future generations.

The EPA, Montana DEQ and the NRDP personnel, as well as ARCO, are responsible for the cleanups, treatment plants, waste management areas and for anything that may require attention in the future. Local governments will do their best to manage activity and growth in and around the cleanup areas. But at the end of day, it is ultimately up to EVERYONE to make sure the cleanup lasts.

The communities, environment and natural resources of the Upper Clark Fork Basin were injured and damaged worse than

most places on the planet. Very few, if any, of those places are given a second chance to learn from previous mistakes. The cleanup is the beginning of the Upper Clark Fork's restoration. Making sure that the citizens of today and tomorrow know how to take care of a renewed watershed will determine the end result: success or failure.

Well over a billion dollars will be spent by the time all of the injuries are repaired to our natural resources. The citizens in every community of the Upper Clark Fork Basin should be excited, interested and committed to find out what they can do to get involved. After all, it would be a shame if that amount of money and effort were spent without a lasting benefit! Below are the best places to get involved with the cleanups in your area. These are public participation and education groups, all of which are committed to staying on top of the Upper Clark Fork cleanup. Many of these groups hold regular meetings where personnel from the cleanup projects give presentations. Citizens are encouraged to attend and speak up with questions and comments.

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Butte-Silver Bow Superfund/
Planning Department
155 W. Granite
497-6250
jresso@bsb.mt.gov
Citizens Technical Environmental
Committee (CTEC)
27 W. Park Street
723-6247
buttectec@hotmail.com
Website: www.buttectec.org

Butte Restoration Alliance
Website: www.
butterestorationalliance.org

Anaconda
Anaconda-Deer Lodge County
563-4000
Website: <http://www.anacondadeerlodge.mt.gov/super/info.aspx>

Arrowhead Foundation
Website: <http://www.anacondasuperfund.org/>

Deer Lodge
Clark Fork River Technical
Assistance Committee (CFRTAC)
PO Box 9086
Missoula, MT 59807

1-406-541-8099 or 1-866-442-8099
Email: info@cfrtac.org
Website: <http://www.cfrtac.org/>

Watershed Restoration Coalition
(WRC)
(406) 846-1703
1002 Hollenack Road
Deer Lodge, MT 59722

Missoula/Bonner
Clark Fork Coalition
140 South 4th St. West
Missoula, MT 59807
Website: <http://www.clarkfork.org/>

CFRTAC
PO Box 9086
Missoula, MT 59807
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Email: info@cfrtac.org
Website: <http://www.cfrtac.org/>

Bonner Development Group
(406) 258-5268
7676 Highway 200 E
Missoula, MT 59802

Butte

The Mining City

Butte Superfund Sites:

1. Silver Bow Creek/Butte Area National Priority List site: Butte Priority Soils
 - Residential Metals Abatement Plan. Ongoing remediation of residential yards, attics and living spaces contaminated with arsenic and/or lead.
 - Parrot Tailings/Butte Area One. Shallow groundwater associated with the former Parrott Smelter and concentrator.
 - Stormwater Management. Management and cleanup of metals contaminated stormwater runoff from the Butte Hill.
 - Butte Reclamation Evaluation System. The annual review and maintenance of the over 200 remediated mine dumps on the Butte Hill.Silver Bow Creek (Streamside Tailings)
 - Warm Springs Ponds
 - Berkeley Pit (Mine Flooding)
 - West Camp/Travona. Deep groundwater on the west side of Butte that is pumped and treated at the Lower Area One treatment lagoons near the Metro Sewage Treatment Plant on Centennial Avenue.Rocker Timber Framing and Treating Plant. A small area of arsenic-contaminated shallow groundwater in the Silver Bow Creek floodplain about five miles west of Butte in Rocker.
 - Westside Soils. There are hundreds of unreclaimed mine dumps in between Butte and Rocker (west of Montana Tech campus).
2. Montana Pole and Treating Plant. A

former wood treating facility on the south side of Butte. Groundwater and soils are contaminated with a carcinogen pentachlorophenol (PCP).

Butte Area Restoration:

1. Butte Area One. Settled in 2008, Butte Area One extends from the upper end of the Metro Storm Drain near Texas Avenue, downstream to the former location of the Colorado Tailings along Silver Bow Creek, about a mile downstream of Montana Street. Contaminated water from this area adversely affects water quality and aquatic life in Silver Bow Creek. The \$28 million allocated to this site under the 2008 settlement is expected, along with the EPA remediation, to address this contamination. The Butte Natural Resource Council is a group of Butte citizens appointed by the Butte-Silver Bow Chief Executive and Governor to guide and make decisions on how to best spend these settlement funds.
2. Upper Clark Fork River Basin Restoration Fund (see 1999 Montana v. ARCO settlement)
3. Silver Bow Creek Remediation and Restoration (see 1999 Montana v. ARCO settlement)

BUTTE contacts

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Natural Resource Damage Program

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P.O. Box 201425
Helena, MT 59620-1425

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Phone: 444-0229

Robert Collins, Supervising Assistant Attorney General
Phone: 444-0226

Carol Fox, Restoration Program Chief
Phone: 444-0209

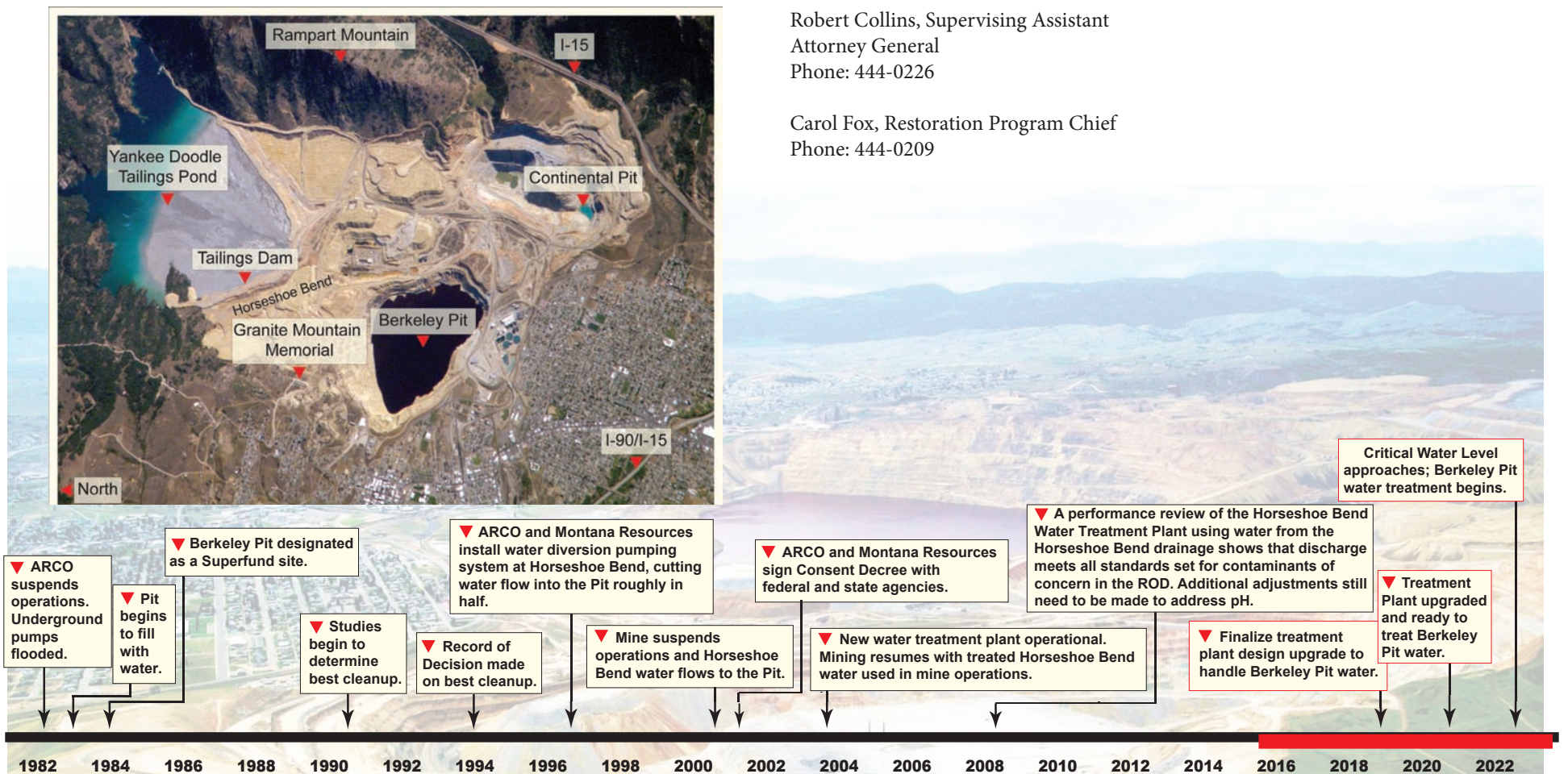
Butte Office
Natural Resource Damage Program
65 East Broadway
Butte, MT 59701
Pat Cunneen, Environmental Science Specialist
Phone: (406) 533-6882
E-mail: pcunneen@mt.gov

Montana Pole and Treating Plant

EPA Web Link: http://www.epa.gov/region8/superfund/mt/montana_pole/index.html

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Region 8, Montana Office
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hoogerheide.roger@epa.gov

Montana DEQ contact:
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Project Officer
Montana Department of Environmental Quality
1100 North Last Chance Gulch
P.O. Box 200901
Helena, MT 59620-0901
406-841-5037
800-246-8198 (toll free in-state only)
lidewitt@mt.gov



BUTTE CTEC



Neversweat Stacks 1900



Speculator Mine Area 2010



Mt Con Mine Yard Reclamation 2010



Silver Bow Creek Reclamation 2010

Citizens' Technical Environmental Committee
27 West Park Street, Butte, MT 59701
Phone: 406-723-6247
Office Hours: Monday - Thursday 10:00 – 3:00 PM

WE TALK SUPERFUND ISSUES

CTEC is a non-profit citizen volunteer organization available to answer your Superfund questions!

BUTTECTEC.ORG

Mining Begins 1864	Anaconda Company Begins Mining 1881	In 1889, the city of Butte passed Montana's first environmental law improving air quality in the Summit Valley. 1908	1908 – huge flood washes mine waste down the river; recently built Milltown dam must be rebuilt. 1914-1918 WWI	Copper Demand Soars 1939-1945 WWII
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Superfund Websites for More Information

<http://www.epa.gov/region8/superfund/mt/>

This site includes links to all 17 of Montana's EPA Superfund sites on the National Priority List (NPL). The sites relevant to this guide are Anaconda Co. Smelter; Clark Fork River Basin; Milltown Reservoir Sediments; and Silver Bow Creek/Butte Area. Also within the Upper Clark Fork Basin is the Montana Pole and Treating Plant, a former wood treating facility in Butte, not associated with ARCO or the lawsuit settlements with the State of Montana and Confederated Salish Kootenai Tribes. Other relevant sites on the list, pertinent to ARCO/former Anaconda Company operations and lawsuit settlements are ACM Smelter and Refinery and East Helena Site, respectively.

<http://www.doj.mt.gov/lands/naturalresource/default.asp>

Montana Attorney General, Department of Justice—Natural Resource Damage Program website. This site includes information on the lawsuit history; all of the remediation/restoration settlements; information on the restoration grants process and projects; and a variety of everything relative to restoration in the Upper Clark Fork:

Montana DEQ's website on the Clark Fork River construction:

<http://deq.mt.gov/rem/mwcb/ConstructionServicesSection/ClarkFork/default.mcp>

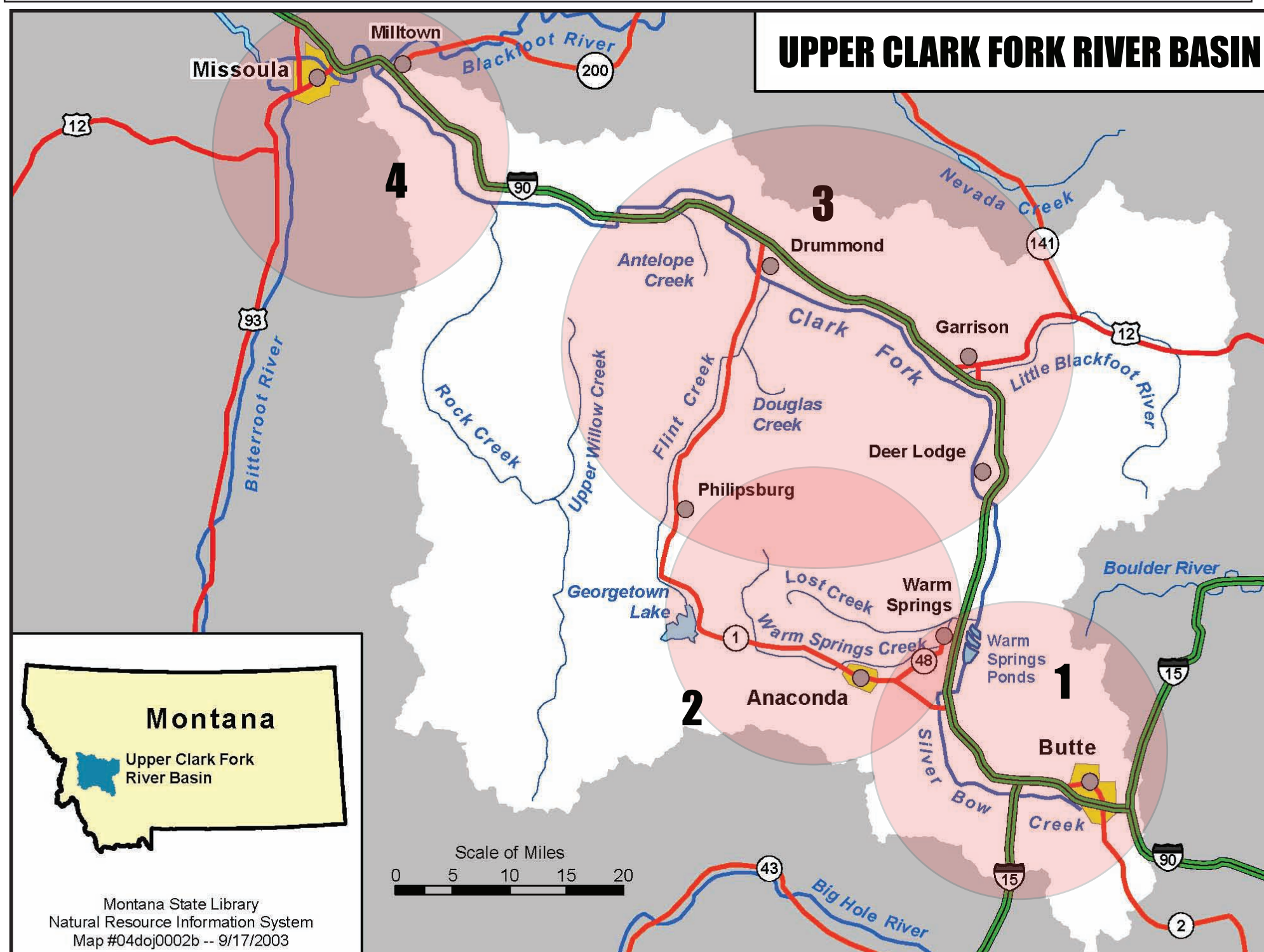
Montana DEQ's website on the Silver Bow Creek construction:

<http://deq.mt.gov/REM/MWCB/ConstructionServicesSection/SilverBowCreek/default.mcp>

Montana DEQ's website on the Mike Horse/Upper Blackfoot construction:

<http://deq.mt.gov/StateSuperfund/UBMC/default.mcp>

(1) Butte (2) Anaconda (3) Deer Lodge (4) Missoula



1910s & 1950's – construction of Warm Springs Settling Ponds

1970's – Clean Air & Water Acts drastically improves environmental impacts of Butte concentrating and Anaconda smelting operations.

ARCO purchases Anaconda. 1977

1970

1977

Cleanup Timeline

Defining “Contamination”

Historic mining, milling, concentrating and smelting operations – namely those of the former Anaconda Company – produced billions and billions of pounds of waste beginning in the late 1800s through 1982. These wastes were widely spread throughout the Upper Clark Fork during the life of Anaconda’s operations, by humans, but also by nature. The great flood of 1908 washed wastes from Butte and Anaconda over thousands of acres of the Silver Bow and Warm Springs Creek and Clark Fork River floodplains. The Anaconda smelter dispersed wastes through the air over tens of thousands of acres. These are prime examples.

But what is in these historic wastes that make them harmful to humans and the environment? Following is a list of descriptions of the conditions and contaminants that make cleanup of the Upper Clark Fork Superfund sites necessary:

Acid Rock or Mine Drainage. The ore and wastes produced from Butte are primarily sulfides. Sulfides are minerals in which metals, such as iron and copper, are chemically bound with sulfur. When these minerals are dug up and exposed to air (oxygen) and water, a natural chemical reaction occurs called “acid rock drainage.” In acid rock or mine drainage, iron sulfide, commonly known as pyrite or fool’s gold, oxidizes, and with water, produces sulfuric acid and rust (iron oxide). While it is a natural process, the historic operations in Butte and Anaconda magnified its effects exponentially. The highly acidic conditions caused by this process make it impossible for most types of life to establish on land or in water. These conditions also make other harmful metals and arsenic available to humans and the environment.

Arsenic. Arsenic is an element known as a metalloid. Commonly found in the wastes, surface water and groundwater of the Upper Clark Fork Superfund sites, arsenic is highly harmful to humans. Arsenic is known to cause skin, liver, bladder, lung and kidney cancer.

Lead. Lead is a heavy metal that is also very harmful to humans, causing damage to the central nervous system, the cardiovascular system, kidneys, and the immune system. Lead is especially harmful to young children

and pregnant women. Most past, present and future residential environmental cleanups in the Upper Clark Fork are driven by lead and arsenic levels that exceed safe levels.

Copper and Zinc. While arsenic and lead are the two primary elements in the Upper Clark Fork that pose threats to human health, copper and zinc are the two main metals that damage the health of the environment – mostly plants, fish and other aquatic species. In soils, high levels of copper and zinc are extremely toxic to plants. When these barren soils and wastes erode and wash into streams or rivers, or dissolve into groundwater, they cause extreme injury to most forms of aquatic life, including fish kills. Silver Bow Creek, the most damaged stream in the Upper Clark Fork River Basin, did not have trout in its waters beginning in the late 1800s up until only a few years ago. Thanks to the remediation and restoration work that began in 1999 by the State of Montana, trout and other aquatic life is beginning to return to the creek.

Here are a few other definitions that help in understanding the nature of contamination in the Upper Clark Fork:

Tailings: The waste materials left over after the process of milling and concentrating copper ore. Tailings are very fine in texture (like sugar) and often appear powdery to the touch. Most tailings produce Acid Rock Drainage and high levels of copper, zinc, lead and arsenic. Because of their fine-grained size, tailings are very mobile, and were the primary waste spread downstream in the 1908 flood.

Waste rock: The earth materials moved or dug out of the way to mine the ores. While waste rock still contains metals (copper, zinc, lead, etc) and sulfides, it does not contain enough to be considered ore. Billions and billions of tons of waste rock were moved over the course of Butte’s mining operations. Waste rock differs from tailings in that it is not crushed or processed. Acid and metals contamination in waste rock piles prevent plant life from establishing and runoff. Erosion, runoff and seepage from these piles contaminate surface water, ground water and can pose threats to humans if they are high in levels of lead and arsenic.



1980
Superfund law passed by Congress
Anaconda smelter closes

1982
Berkeley Pit and Butte Concentrator Close

1983
Upper Clark Fork Superfund sites listed. MT files natural resource damage lawsuit against ARCO

1990
NRDP Natural Resource Damage Program created in MT Dept of Justice

1999 - 2008
State settles suit with ARCO for injuries to the Upper Clark Fork and Montanan's lost use of its resources.

2020's

- Berkeley Pit to reach critical water level of 5,410 ft above sea level; Water treatment plant begins operating.**
- Remediation and restoration of Upper Clark Fork ongoing/ nearing completion.**

Cfwep.Org

The State of Montana versus ARCO lawsuit

Continued from Page 4

mediation) of Silver Bow Creek; \$15 million for the State's cost of the lawsuit (legal, assessment reports, etc.). Also in 1999, the Confederated Salish and Kootenai Tribes were awarded \$18.3 million to compensate them for injuries to and lost use of the Upper Clark Fork River Basin natural resources. The Upper Clark Fork River Basin was an important part of the Tribes aboriginal hunting, fishing, and cultural grounds. The Tribes still maintain their use of this area through its Hellgate Treaty with the federal government, signed in 1855.

2005

\$3.9 million was awarded to the State for the restoration of the Milltown Dam and Reservoir Area, together with additional compensation, such as land and water rights, totalling about \$13 million in value. The State's restoration work, funded with this money plus \$10.8 million from the Upper Clark Fork River Basin Restoration Fund, is being coordinated with the EPA-led remediation performed at the site, which is estimated to be over \$100 million (see more in the Missoula Section 4). 2008. A final settlement of \$169 million was

awarded to the State for the following:

\$28.1 million for restoration and/or replacement of the Butte Area One groundwater and aquatic resources (see more in the Butte Section 1)

\$13.2 million for the restoration of the Smelter Hill Area Uplands Injured area (see more in the Anaconda Section 2)

\$26.7 million to the restoration of the Upper Clark Fork River,

\$4.5 million for additional lawsuit costs

\$96.5 million for the remediation of the Upper Clark Fork River (see more in Anaconda and Deer Lodge Sections).

Mike Horse Dam Settlement.

In 2008, the State also received \$39 million to remove the aging Mike Horse Dam and the toxic tailings wastes behind it, and also to restore injured sections of the Upper Blackfoot River and its tributary streams,

Beartrap and Mike Horse Creek. The U.S. Forest Service also received \$1.25 million to assist the State in its cleanup.

More information on these settlements can

be found on the Internet at the NRDP's website at: <http://doj.mt.gov/lands/naturalresource/lawsuithistory.asp>.



Restoration of the Milltown Dam 2011

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