# BEIPC Coeur d'Alene Basin Calendar Year 2022 Work Plan

## INTRODUCTION

This plan covers proposed environmental cleanup and improvement activities in the Coeur d'Alene Basin scheduled for 2022 by the Basin Environmental Improvement Project Commission (BEIPC) and coordinating agencies and governments in accordance with their responsibilities as stated in the Memorandum of Agreement (dated August 2002). Actions noted in the plan are intended to implement the goals and objectives of the BEIPC's 2022 - 2026 Five Year Work Plan. This plan has been prepared by the Executive Director working with the coordinating agencies and governments with review, input and approval by the Technical Leadership Group (TLG) and review and input from the Citizen Coordinating Council (CCC). The work plan is organized as follows:

> Part 1 – Environmental cleanup work performed through the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) by the Environmental Protection Agency (EPA) and State of Idaho through the Idaho Department of Environmental Quality (IDEQ) or work performed by the Coeur d' Alene Custodial Work Trust (CDA Trust) and Potentially Responsible Parties (PRP).
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> Part 2 - Other Activities and Responsibilities

Part 1 includes work to implement the Interim Record of Decision (ROD) for Operable Unit 3 (OU-3) and the Upper Basin Interim ROD Amendment (RODA) for OU-2 and 3.

Part 2 includes work and responsibilities concerning management of Coeur d'Alene Lake by the Coeur d'Alene Tribe and State of Idaho, restoration of natural resources by the Natural Resource Trustees (Restoration Partnership) and work the BEIPC has assumed based on recommendations from the 2005 National Academy of Sciences (NAS) Study and requests from citizens and communities of the Basin.

The five-year plan outlines activities and work proposed to be implemented over the next five years; however, it does not sequence these activities. This one-year plan establishes and maintains the sequencing of activities that will be needed to complete the activities and work approved in the five-year plan. It may not address all work items noted in the five-year plan because some will not be initiated until later years.

## PART 1 – ENVIRONMENTAL CLEANUP WORK

For Part 1, the scope of the proposed work corresponds to the source and level of funding anticipated for 2022 and work anticipated to be performed by the responsible parties. The proposal includes the following work:

- Human Health Issues including Residential and Community Property and Private Water Supply Remediation, Basin Property Remediation Program (BPRP); Lead Health Intervention Program (LHIP); and Recreation Use Activities.
- Repository and Waste Consolidation Area (WCA) Development and Management
- Remedial actions in the Upper Basin including source control actions, water treatment, and related human health activities provided for in the Upper Basin RODA.
- Remedial actions and/or Pilot Projects in the Lower Basin.
- Basin Environmental Monitoring Program
- Operation and Maintenance Responsibilities for Remedial Actions

## 1.1 HUMAN HEALTH ISSUES

Remediation in areas where human health exposures exists is a remedial action priority as defined in the OU-3 ROD. It includes maintaining the Institutional Controls Program (ICP) managed by the Panhandle Health District (PHD) and conducting cleanup in residential, and community and recreational areas in the Upper and Lower Basin. The RODA addresses source control remedies, water treatment remedies, and ecological cleanup projects with related human health activities.

### 1.1.1 Residential and Commercial Property Remediation

During 2021, the Trust's Basin Property Remediation Program (BPRP) remediated two properties and sampled five including residential, rights-of way, and private drinking water sources. Properties remaining to be sampled and/or remediated in the Upper and Lower Basin are those whose owners have refused access or have been unresponsive to repeated contact attempts by the CDA Trust and IDEQ.

The goal for 2022 is to complete sampling and remediation if sampling results are above actions levels on parcels whose owners have granted access. Currently, about 211 properties in the Upper and Lower Basin require sampling and 40 properties require remediation based on previous sampling. A total of 3928 properties in the Basin and 3236 properties in the Box have been remediated at the conclusion of 2021. Nine properties in the Box remain to be remediated once owners grant access.

In 2022, EPA will continue to direct and oversee the CDA Trust BPRP work. IDEQ will continue an oversight and coordination role initiated in 2015 and will continue to encourage property owner hold outs to have their properties sampled and remediated, if necessary.

### 1.1.2 Lead Health Intervention Program (LHIP)

Screening of children for elevated blood lead levels has been occurring annually in the CDA Basin since 1996 as a public health service to identify children with elevated blood lead levels and to provide follow-up from a public health professional to identify ways to reduce lead exposures. The screening program also provides information to the Basin cleanup efforts; however, cleanup decisions are not based on annual blood lead testing results since the cleanup goal is to prevent lead exposures that could result in elevated blood lead levels.

In early 2012, the Centers for Disease Control & Prevention (CDC) changed its "level of concern" associated with childhood lead poisoning from a blood lead reference value (BLRV) of 10 micrograms per deciliter (µg/dl) to a new BLRV of 5µg/dl. On 10/28/2021, the CDC again lowered the BLRV to 3.5 (µg/dl) in children. This new lower value means that more children will be identified as having lead exposure allowing parents, doctors, public health officials, and communities to act earlier to reduce the child's future exposure to lead.

Panhandle Health District (PHD) will continue to offer free blood lead screening for residents living within the Bunker Hill Superfund Site boundaries. In addition, PHD will be conducting its annual summer screening with a $50 incentive for children between ages 6 months to 6 years of age residing within the Basin for 2022.

When an individual is identified with an elevated blood lead, it is recommended their physician be notified and Panhandle Health District will make an appointment for a home visit to identify potential sources of exposure in and around the home. These in-home consultations help PHD and individual families identify ways to reduce exposure risks. In addition, PHD can help identify potential exposure pathways the cleanup project can address to prevent lead exposures.

Additional Services offered by PHD's LHIP:

- Year-round blood lead screening and free follow-ups
- HEPA vacuum loan program for cleaning residences
- Education, outreach, and awareness for parents, children, community members, recreationalists, and visitors
- Education classes in local school's grades K-12
- Annual Environmental Science and Health Fair
- Education and outreach at community events
- Sampling of soil, dust, paint, water, and other media as appropriate [1]
- Education and outreach at community events

### 1.1.3 Recreation Use Activities

In 2016, a Recreation Sites Program was created to address and manage human health risks from exposure to lead and other metals that can occur during recreation activities throughout the Upper and Lower Coeur d'Alene Basin. A strategy document was developed to lay out goals, ways to inventory recreation areas, possible ways to manage risks to people, and current outreach activities. This strategy was issued for public and stakeholder comments and suggestions. The strategy and response to community input are available at: BUNKER HILL MINING & METALLURGICAL COMPLEX | Superfund Site Profile | Superfund Site Information | US EPA

Addressing contamination at recreation sites is different than other cleanup activities. Many places are re-contaminated with each high water or flood event making it difficult to just remove contaminated soil and replace it with clean soil. Other recreation areas are remote, hard to access, and spread out, like hiking trails or ATV areas, making cleanup of the entire area difficult. Overall, different approaches are needed for the various types and locations of recreation sites. In addition, community outreach and education are important ways to help people manage health risks while recreating. An outreach and education program has been in place for years and will continue to be implemented and expanded.

During 2022, the Recreation Sites Program, which includes EPA, IDEQ, PHD, CDA Tribe, BEIPC and the CDA Trust, will meet at least biannually to evaluate and discuss priorities. In the Basin, the CDA Trust expects to start cleanup at the Cataldo Boat Ramp, sample other Upper and Lower Basin areas that are known to have high usage by young children and continue to update and install new signage at identified recreation sites. In the Box, IDEQ and PHD will continue to update signage and evaluate access controls at mine and recreation sites where public use has been identified. Recreation sites that were sampled last year will receive signage, as necessary, and removal of material waste piles found in unrestricted areas will be coordinated. Planning for further remediation at the sampled recreation sites will continue. The overall goal is to address and manage human health risks from exposure to lead and other metals while maintaining the benefits of recreation for people's health and the local economy.

[1] All in-person and in-home services will be conducted in compliance with COVID-associated protocols.

## 1.2 REPOSITORY AND WASTE CONSOLODATION AREA (WCA) DEVELOPMENT AND MANAGEMENT

### Repository Background

There are currently three operating repositories within OU-3; Big Creek Repository (BCR), which includes the Big Creek Repository Annex (BCRA), East Mission Flats Repository (EMFR) and Lower Burke Canyon Repository (LBCR). The Page Repository provides for disposal of remedial and ICP wastes in the Box (OU-1 and OU-2).

Repository development and management is an ongoing process that must meet the demand for disposal of historic mining-related contamination for the Basin environmental and human health related cleanup program. This includes the BPRP and other cleanup actions performed by IDEQ, EPA, and the CDA Trust. It also includes waste generated by private parties and local government agencies under the ICP.

BCR is located at the mouth of Big Creek Canyon and primarily serves the Upper Basin. The BCR has received waste since 2002. The BCR has undergone expansions in 2009 (200,000 cy), 2011 (126,000 cy), and 2017 (127,000 cy) increasing its waste holding capacity. BCR currently has a remaining capacity for approximately 89,922 cy. BCRA was constructed in 2015 and is located adjacent to the original BCR, just southwest of the original site on the west side of Big Creek. BCRA uses the existing BCR access, decontamination, and ICP staging facilities. The initial design waste capacity of BCRA was approximately 190,000 cy and has approximately 169,461 cy remaining.

EMFR is located north of Interstate 90 off Exit 39, near Cataldo, and primarily serves the Lower Basin. EMFR has been receiving waste since 2009. The EMFR was designed with a waste capacity of approximately 410,000 cy. At the current and estimated future waste disposal rates the EMFR is estimated to reach the design capacity in approximately 30 years. EMFR has approximately 166,560 cy of volume remaining.

LBCR is located in Burke Canyon on the Star Tailings Impoundment near the community of Woodland Park. The Trust completed the LBCR design and construction in 2015. The remaining capacity at LBCR is about 1,040,925 cy.

The Page Repository is located in the Box just west of Smelterville. Having reached its previous design capacity in 2010, Page is being expanded westward to provide capacity for an additional 700,000 cy of waste. At the end of 2020, 518,522 cy of disposal space was available at Page as noted by the year-end survey. Page will continue to receive Box remedial action and ICP waste in 2022.

### Repository Objectives

The Repository Work Plan focuses on the following objectives:

(1) Box repository operations
(2) Continued development of Box repository capacity to support remedial action projects in the near term and sustain ICP support in-perpetuity
(3) Operating BCR, BCRA, EMFR, and LBCR
(4) Increasing repository volume in the Upper Basin
(5) Managing the Waste Management Strategy (WMS) including considerations for waste reduction or consolidation.

Specific tasks to achieve these objectives are summarized below:

**Box Repository Operations**

Page Repository operations will include but are not limited to the following tasks:

- Receipt and placement of ICP and remedial action waste
- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris.
- Equipment decontamination, site stabilization, erosion and sediment control installation.
- Surface and ground water monitoring and associated reporting.
- Waste stream management to minimize disposal and maximize re-use of high-volume waste materials.

**Increasing Box Repository Capacity**

2022 work will include placement of concrete debris to continue construction of starter berms and foundation mattress in the Page expansion cells. Geotechnical monitoring equipment will be installed in the new expansion cells.

**Basin Repository Operations**

In 2022, Basin repositories will be operated to accept waste from some minor remedial actions, the BPRP and ICP. There is significant uncertainty in waste volume projections for infrastructure (ICP) waste. However, Basin repositories are estimated to potentially receive as much as 25,500 cy from all projects in the Basin. Anticipating those needs, the Basin repository operations include but are not limited to the following tasks:

- Receipt and placement of some minor remedial action waste, the BPRP and ICP.
- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris.
- Equipment decontamination, site stabilization, erosion and sediment control installation.
- Surface and ground water monitoring and associated reporting.

**Waste Consolidation Area (WCA) Development and Operations**

Development of the East Fork Ninemile WCA began in 2013. This WCA is being developed to consolidate mine waste materials, including waste rock and tailings from cleanup activities throughout the Ninemile Basin. Wastes from the completed Interstate-Callahan Mine/Rock Dumps, the Success Complex, the Interstate Millsite, and a portion of the Lower East Fork Ninemile Riparian Area cleanups have already been placed and consolidated at this site.

The EFNM WCA will require expansion to provide capacity for the waste from the other Ninemile Basin source sites (i.e., Tamarack Complex and Dayrock Complex). This expansion will begin in 2022.

**Increasing Upper Basin Repository and WCA Capacity**

Increasing Basin long-term repository and WCA capacity will be needed to dispose of the waste material generated by the cleanups identified in the OU-3 ROD and the Upper Basin RODA. The Upper Basin RODA adopted a two-part approach to waste management that utilizes both the WCAs and repositories

A repository siting process, with community input, was developed in 2009 to identify new repository sites to support cleanup activities in the Upper Basin. Based on this process, the LBCR was developed and began receiving waste materials in 2015. Baseline site characterization data was collected, and a 30% design was completed in 2011 at Osburn Tailings Impoundment (OTI) area. Considering remedial project planning, as described in the RODA, the OTI design was put on hold to focus on the more immediate needs for repository capacity in Canyon Creek Drainage. In 2015 the CDA Trust began evaluating and collecting data to determine how to mitigate contaminated springs discharging from the base of the existing Silver Valley Natural Resource Trustee (SVNRT) Repository in Canyon Creek. In 2019 construction began on the Canyon Complex Repository CCR/WCA, which will receive waste material from Canyon Creek Drainage remedial actions and the material moved from the SVNRT repository site eliminating the contaminated springs discharge. Originally, the intent was to rebuild the SVNRT repository or treat the springs discharge, but with the construction of the CCR/WCA, SVNRT material was moved in 2021 to the CCR/WCA eliminating the need for repository rework while providing correctly engineered containment. The CCR/WCA is designed to accommodate, 1,500,000 cy in addition to the transferred volume of the SVNRT Repository.

**Lower Basin WCA Development**

During 2020, EPA began seeking public opinion for WCAs siting considerations in the Lower Basin. Remedial work is being planned for cleanup of contaminated areas in the Lower Basin, however project designs have not been currently developed. It is anticipated that WCAs in the Lower Basin will be located in close proximity to future project sites if possible.

The repository and WCA design programs are dynamic processes driven by many factors, including waste stream volume estimates, priority cleanup site locations, funding availability and operating mine activities. As cleanup implementation plans are finalized and waste stream volume generation schedules are developed, repository and WCA designs, technical evaluations, and needed property acquisition will proceed at the sites identified through the public planning process.

**Waste Management Strategy (WMS) Update**

The WMS is a key document that guides repository and WCA siting and waste disposal or re-use. It contains the most current estimates of future waste volumes and implementation schedule forecasts within geographic areas. The WMS is updated, as needed, to incorporate additional information regarding the projected waste volumes generated by OU-2 and OU-3 remedial activity and remaining repository and WCA capacities. The WMS was developed and is amended by EPA and the CDA Trust in coordination with IDEQ and PHD. The Technical Leadership Group and/or the Repository Project Focus Team (PFT) also are involved during key planning intervals.

### 1.3.1 Upper Basin Remedies

This work includes remediation identified for the Upper Basin, which includes the South Fork Coeur d'Alene River (SFCDR) and its tributaries above its confluence with the North Fork.

The 2012 Upper Basin Interim RODA identified $635 million dollars of work in the Upper Basin including potential work at 125 mine and mill sites. The 2016 EPA Superfund Cleanup Implementation Plan (SCIP) identifies the priority setting process and outlook for sequencing the work over the next ten years. This document is updated at a minimum of every 5 years, as part of the adaptive management process to incorporate lessons learned as the work moves forward. Additional information about the RODA and prioritization of cleanup actions including technical memos, meeting presentations, and community involvement documents are located at the following web site:
**https://www.epa.gov/superfund/bunker-hill**

The goals of the RODA include:

- Prioritizing Upper Basin/Box source areas for cleanup to improve water quality and address risks to human health and the environment
- Moving forward on the Operable Unit 2 (OU-2) Phase 2 cleanup to improve water quality in the SFCDR
- Addressing changes in water treatment to accommodate additional contaminated water
- Focusing on source control actions that address particulate lead which poses a risk to human health and ecological receptors, and
- Protecting remedies in community areas from tributary flooding and heavy precipitation events (the construction portion of this work was finalized at the close of 2019 with completion of the Remedy Protection Program).

The prioritized cleanups under the RODA are expected to provide significant improvement to surface water quality and will reduce the contribution of contaminated groundwater to surface water. There will also be reduced particulate lead in the CDA River and downstream areas as a result of this work. These actions in turn are expected to reduce the recontamination potential in the Lower Basin and other downstream areas and reduce risks to humans and wildlife from exposure to contaminated mine waste.

This BEIPC 2022 work plan focuses on those cleanup actions that have either already started or been planned for the coming year. The following is expected to be the focus of the CDA Trust in the Upper Basin during 2022:

**East Fork Ninemile Basin**

Tamarack Complex Design and Cleanup: The prioritization of the Tamarack Complex cleanup is based on metals loading, accessibility to the public, impacts to adjacent roadways, and the upstream location of the sites relative to other source sites in Ninemile Basin. The design of the Tamarack Complex is currently underway, and cleanup is expected to begin in 2023.

East Fork Ninemile Waste Consolidation Area: First developed in 2013, the EFNM Waste Consolidation Area (WCA) provides a location to consolidate mine waste materials, including waste rock and tailings, from cleanup activities throughout the Ninemile Basin. Wastes from the completed Interstate-Callahan Mine/Rock Dumps, Success, Interstate Millsite, and the Upper East Fork Ninemile Riparian Area cleanups have already been placed and consolidated at this site.

The EFNM WCA will continue to receive wastes until the remedial actions have been completed for the EFNM drainage, estimated to be 2024.

East Fork Ninemile Creek Riparian Area:
Cleanup of the East Fork Ninemile (EFNM) Creek riparian area is divided into Upper and Lower EFNM. Remediation of the upper section of EFNM Creek was completed in 2021. The design for Lower EFNM will be combined with the Dayrock Complex design and will be completed in late 2021. Construction of the Dayrock Complex/Lower EFNM Creek section is scheduled to begin in 2022.

**Canyon Creek Basin**

SVNRT Repository Remediation and Canyon Complex Repository/Waste Consolidation Area: Similar to the EFNM WCA, the Canyon Complex Repository (CCR)/WCA is being constructed to receive and consolidate wastes from the numerous source areas that will be cleaned up in the Canyon Creek Basin. Construction of the CCR/WCA began in 2019 and will continue in 2022. As part of this work, mine waste from the old SVNRT repository was moved into the new repository in 2021. The new CCR/WCA drainage system will be expanded into the old SVNRT area in 2022. The facility will be ready to take mine waste from other cleanup sites in the Canyon Creek area in 2023.

Canyon Creek Quarry: As part of the construction activities at the CCR/WCA, the CDA Trust purchased a 23-acre parcel that is used as a source of uncontaminated rock and gravel to use as clean fill materials. This quarry property is located 2.7 miles east of CCR/WCA. In 2022, work will continue at the Quarry to produce and haul uncontaminated rock and gravel fill for future use at the CCR/WCA.

Data Characterization and Evaluation: In 2022, the CDA Trust will evaluate data collected during characterization work at the Tamarack #7. Design activities for the Tamarack #7 will be completed in 2022.

Canyon Creek Designs/Investigations: The Hecla Star Mine Complex design is expected to finish in 2022. Design investigations also will continue in 2022 at the Standard-Mammoth Reach Complex and the Gem Complex.

**Pine Creek Basin**

Douglas Mine and Mill: In 2023, remedial action will be conducted consisting of excavating mine wastes from the outside the perimeter of the existing on-site WCA and consolidating mine wastes on top of the existing on-site WCA for permanent storage. An installation of an adit flow conveyance system from a periodically flowing adit, cover material placement and general backfill, storm water controls, and access deterrents to discourage use from recreational users will also be accomplished.

**Central Treatment Plant/Central Impoundment Area**

In Kellogg, work under the Corps of Engineers Design/Build/Operate Contract to AMEC/Foster Wheeler (now Wood) is completed. The Corps of Engineers is responsible for administration and management of this contract. By October 2020, Wood had completed construction and most of the acceptance testing for the Central Treatment Plant (CTP) upgrades and the new Groundwater Collection System (GCS). Wood has continued to operate the system for one year under contract and has completed additional seasonal testing during this shakedown period. In October 2021, IDEQ assumed

operations and maintenance of the CTP/GCS using Hecla settlement monies that had been placed in a Registry Account Fund for the purposes of performing mine impacted water collection and treatment.

The CTP upgrades were necessary to treat additional influent flow from the GCS, improve system reliability, meet current, more stringent discharge requirements, and to operate in High-Density Sludge (HDS) mode. These upgrades were necessary for some time to provide dependable and more efficient water treatment of the Bunker Hill Mine discharge water and the groundwater to be collected from the GCS near the Central Impoundment Area (CIA). The Bunker Hill Mine water has been and continues to be treated at the CTP. The upgraded CTP was designed to treat influent flows at rates that nearly triple the current rate of base flows from the Bunker Hill Mine. Excess flow from the Bunker Hill Mine will be diverted to in-mine storage. The old plant was not capable of meeting discharge standards when operated in HDS mode; the newly upgraded plant, operating in HDS mode, will result in much less sludge production, more efficient operating conditions, and the need for fewer sludge ponds being constructed over time.

Following treatment, the effluent (combined mine water and extracted groundwater) discharged from the CTP to the SFCDAR must be in compliance with current water quality standards. On an average basis, the GCS is expected to result in significant removal of dissolved metals, the most notable of which is zinc that was being discharged to the SFCDAR from groundwater interaction, as discussed in the following paragraph.

The GCS project includes an approximate 8,000-linear feet cutoff wall between the CIA and Interstate 90 (I-90), a series of extraction wells, and a conveyance pipeline to the CTP that extends along the north side and over the top of the CIA. Groundwater flow and strength (concentration of metals) varies from base flow/strength (late summer/winter) through maximum flow/strength (spring runoff). By considering seasonal and annual variability and groundwater monitoring well data from south of I-90, the estimated dissolved zinc loading to the gaining reach of the SFCDAR ranged from 150 to 450 pounds per day (lbs/day). A significant unknown is the potential source of metals in tailings under and north of I-90 that will not be captured by the groundwater collection system. However, the optimistic target is to capture up to 90% of the predicted load to this gaining reach from south of I-90.

### 1.3.2 Lower Basin Remedies

Work described in the OU-3 Interim ROD for the Lower Basin includes actions for wetlands and lateral lakes, riverbanks, splay areas, riverbed dredging, and cleanup at identified recreational areas along the Coeur d'Alene River. Objectives of remediation in the Lower Basin focus on reducing human exposure to lead-contaminated soils and sediments, improving water quality and reducing particulate lead and other heavy metals in the Basin ecosystem.

In 2020, documentation for the working sediment transport model was finalized and EPA used the model and all available data to complete a Draft Riverbed Management Plan (RMP), currently under review. The purpose of the RMP is to guide the interim remedy for the Lower Basin riverbed and banks by providing information and analyses for selected integrated remediation scenarios for the riverbed and identifying high-priority riverbank segments for removal or stabilization. The RMP targets areas within the channel for active remediation and divides the riverbed into sediment management areas (SMAs), evaluates the effects of remedial technologies, and identifies areas for natural recovery; the RMP will feed into a broader Lower Basin Prioritization Plan (LBPP) that is also under review. Additional investigation in the channel and the floodplains will be used to inform the conceptual design and feasibility of specific pilot projects that are being considered for implementation over the next two to five years under the LBPP. The results of these efforts continue to be shared with the subgroups of the BEIPC (e.g. Lower Basin PFT (LBPFT), TLG and CCC), interested stakeholders, and citizen groups.

Informed by the Lower Basin Project Selection Process and LBPP, EPA will continue to coordinate with the Restoration Partnership and various landowners in 2022 to characterize and identify off-channel areas for remedial actions. Research will also continue in Lane Marsh and other wetland areas to study the effect of thin-layer capping techniques, amendments and water levels on lead bioavailability. Currently, EPA is finalizing the design on IDFG-owned Gray's Meadow to create clean waterfowl feeding habitat at one of the habitat areas that scored well using the multiple objective decision analysis process. The 60% Design for this agriculture to wetland conversion project will be available for agency review in December 2021 and construction is scheduled to start in 2022 and continue through 2023, following completion of the final design. Two important infrastructure projects associated with Gray's Meadow were completed by the end of 2021: 1) relocating the Cave Lake discharge point from Black Lake to the CDA River (completed in March 2021); and 2) relocating the Lamb Peak pump discharge from Black Lake to the CDA River, widening the access road and replacing the vehicular bridge (completed in December 2021). During the agricultural land use period, nutrient-rich water from Gray's Meadow was discharged to Black Lake, affecting water quality in the lake. Relocating the water transfer locations, remediating the soil, and improving processes for managing water levels at is expected to improve water quality in Black Lake and throughout the watershed.

To address contaminated sediment transport in the CDA River channel, the CDA Trust has begun planning and remedial design characterization for an in-channel pilot project to be implemented in the upper part of the River's Dudley Reach. The exact location may be adjusted or the technology may be modified, through adaptive management, as new information is obtained. Currently the focus area is an approximate one-half mile scour hole located about two miles downstream of the Mission Boat Launch (near River Mile 157). The Dudley Reach is considered the most significant upstream lead loading segment in the River system. The technologies to be constructed are a cap/dredge hybrid. Unarmored riverbanks adjacent to the pilot segment will be addressed along with the pilot project. The pilot will help inform future approaches to cleaning up mine waste in the river channel and allow evaluation of methods to prevent mine waste from moving downstream while getting some cleanup done.

Several recreation areas will be considered by the recreation subgroup to address lead exposure associated with recreating along the river channel as it is an ongoing concern, as discussed in the Recreation Use Activities Section.

Future remedial work in the Lower Basin is planned on being supported through the design and construction of Waste Consolidation Areas (WCA). The WCA is similar to the Upper Basin repositories in that it will undergo strict engineering design to prevent the release of held contamination to surface and groundwater as well as prevent release to the air. Once closed, a WCA will also follow a designed operations and maintenance plan which will include monitoring for contaminant release. While the WCA is similar to a repository, notable differences include:

1) The WCA is to be placed in close proximity to the project site in order to support remedial technologies chosen, reduce transportation costs, and decrease impacts on local communities,

2) The WCA will remain in operation until the project waste capacity is reached, be secured, undergo the prescribed operations and maintenance plan, and be and monitored into perpetuity,

3) The WCA will only accept waste from the specific project and will not take on ICP or other project wastes.

During 2021, two CDA Trust-owned properties underwent geotechnical evaluations and surveying in consideration for a potential future WCA site. The WCA would support the waste disposal needs of the Lower Basin Dudley Reach Pilot Project(s). A site, when chosen, would begin remedial design in 2022 and began construction in 2023 in order to support the 2024 Lower Basin Pilot Project(s) start date.

This work in the Lower Basin will be accomplished while continued cleanup focuses on human health and addressing source stabilization in the Upper Basin. The Upper Basin cleanup is expected to compliment cleanup activities in the Lower Basin by reducing the loading of contaminated materials to the watershed and reducing the potential for recontamination from the Upper Basin to the Lower Basin.

## 1.4 BASIN ENVIRONMENTAL MONITORING

EPA has continued to optimize and restructure the Basin Environmental Monitoring Program (BEMP) updating data quality objectives and Quality Assurance Project Plans (QAPPs) to better meet both remedial action effectiveness and long term monitoring needs of the cleanup. For over ten years, EPA has implemented the Basin Environmental Monitoring Program (BEMP) to meet the following objectives:

- Assess long-term status and trends of surface water, sediment, groundwater and biological resource conditions in the Basin.
- Evaluate progress toward meeting remedial action objectives (RAOs), applicable or relevant and appropriate requirements (ARARs), and preliminary remediation goals (PRGs).
- Improve the understanding of Basin environmental processes and variability to improve the effectiveness and efficiency of remedial actions.
- Provide data for CERCLA required Five-Year Reviews of remedy performance.

Highlights of the data collected through the BEMP are in the 2020 Five Year Review (9/2021). More details are included in the USGS document: Trends in Concentrations, Loads and Sources of Trace Metals and Nutrients in the Spokane River Watershed, Northern Idaho, Water Years 1990-2018 (Zinsser, 2020), which is posted on the USGS publications website (https://pubs.er.usgs.gov/publication/sir20205096). This report analyzes long-term water-quality and streamflow data, collected by the USGS at 20 sampling sites in the Coeur d'Alene, Spokane and St Joe River watersheds to evaluate the impact of remedial actions on metals in surface water. Analyses focused on total and dissolved cadmium, zinc and lead. Trends in total phosphorus, total nitrogen and dissolved orthophosphate were also evaluated; although these nutrients are not constituents of concern for the Superfund remedy, they are important to the health of the Coeur d'Alene River watershed. Annual USGS surface water sampling results for 2020 are summarized in the following report, available on the EPA Webpage: Coeur d'Alene Basin Environmental Monitoring Program – Surface Water, Annual Data Summary – Water Year 2020: https://semspub.epa.gov/work/10/100312601.pdf.

In 2020 and 2021, EPA worked with the CDA Trust, IDEQ, USFWS, USGS, and the CDA Tribe to update the Basin Environmental Monitoring Plan in order to guide the collection, analysis, and interpretation of environmental data while providing flexibility for adaptive management as remediation work is completed and information regarding site conditions evolves (Maul Foster & Alongi [MFA], 2021).

The updated and revised BEMP is structured into three geographically based tiers:

- Site-specific remedial action (RA) effectiveness and performance monitoring
- Area-wide monitoring focused on geographically related areas and typically encompassing multiple RA sites (e.g., watersheds)
- Bunker Hill site-wide and long-term monitoring with a focus on surface water throughout the entire site.

The updated BEMP and the Area-wide Remedial Action Effectiveness Monitoring Plan for Ninemile Basin were distributed for broader review and revision throughout 2020 with finalization anticipated in 2021. A BEMP workgroup meeting was reestablished in 2021, with plans for annual meetings during field planning season to effectively coordinate and communicate BEMP activities across agencies/organizations.

Construction of the Groundwater Collection System (GCS) adjacent to the CIA in Kellogg, was completed in October 2020 and following a year of operation by EPA's contractor, operation of the GCS and upgraded Central Treatment Plan (CTP) was be transferred to the IDEQ in October 2021. Preliminary data for RA Effectiveness Monitoring for the GCS was collected during baseflow conditions in fall 2020 and during high flow in spring 2021. As part of the BEMP surface water monitoring network, the USGS collects discharge and water-quality samples from two stations located at Kellogg and Smelterville on the SFCDAR above and below the GCS. For a limited period following construction and optimization, additional groundwater and surface water samples will be collected more frequently to ascertain the overall efficacy of the GCS. Additionally, the USGS conducted a baseline seepage investigation in August 2017 (prior to construction) to more accurately define the distribution of groundwater seepage to the SFCDAR in the reach between Kellogg and Smelterville, and to quantify the metal loading from both groundwater and surface water along the reach adjacent to the CIA. The information gained from this investigation will be compared to a similar study to be conducted in fall 2022 with the GCS in place.

RA Effectiveness monitoring has been ongoing in Ninemile Creek Drainage since 2012 to establish baseline conditions, help prioritize work, and assess the effect of source area cleanups. The source areas in EFNM Creek continue to contribute, in aggregate, the largest lead and zinc loads to Ninemile Creek. Four remedial actions (RAs) were completed by the end of 2020: Interstate Callahan Rock Dumps, Rex Complex, Success Complex, and Interstate Millsite. The remainder of the priority Ninemile RAs are the Tamarack Complex (potentially 2022 through 2024), lower portion of EFNM Creek riparian area, and the Dayrock Complex (2022 through 2024). A portion of lower EFNM riparian area extending downstream from the Success Complex site approximately 1,400 feet was addressed in 2021.

## 1.5 OPERATION AND MAINTENANCE RESPONSIBILITIES FOR REMEDIAL ACTIONS

CERCLA prohibits EPA from use of funds from the Superfund Account on operation and maintenance (O&M) of remedies. The entity responsible for O&M on completed and accepted remedial work may vary. In general, O&M on EPA selected cleanup actions will be performed by the CDA Trust; the State of Idaho; local governmental jurisdictions or parties who are required to perform O&M activities by judicial or administrative settlement, environmental agreements, covenants, and conservation easements such as projects constructed under the Remedy Protection and Paved Roads Programs or the Institutional Control Program.

# PART 2 – OTHER ACTIVITIES AND RESPONSIBILITIES

For Part 2, the scope of this work plan recognizes a number of work items that the BEIPC will be involved in and items of work needed to accommodate some of the recommendations of the 2005 NAS study; BEIPC and agency communications and public involvement activities; State of Washington activities; implementation of the Lake Management Plan by the State of Idaho and CDA Tribe and coordination with activities of the Natural Resource Trustees (Restoration Partnership).

The plan includes the following work:

- IDEQ Lake Management Activities
- Coeur d'Alene Tribe Lake Activities
- Flood Control, and Infrastructure Revitalization
- Communications and Public Involvement
- State of Washington Activities
- Coordination with the Restoration Partnership

## 2.1 IDEQ LAKE MANAGEMENT ACTIVITIES

The OU-3 Interim ROD did not include Coeur d'Alene Lake in the Selected Remedy. The OU-3 Interim ROD anticipated that the State, Tribe, federal agencies, and local governments would implement a Coeur d'Alene Lake Management Plan (LMP) outside the CERCLA (Superfund) process using separate regulatory authorities. The updated LMP was approved in 2009 and implementation has been underway. The Upper Basin RODA indicated that a remedy for lakebed contamination is deferred contingent upon successful management through the LMP. The LMP's goal is to manage metals in contaminated lakebed sediments through reduction of nutrient inputs basin-wide from point and nonpoint sources. The LMP includes actions related to lake water quality monitoring, coordination among basin stakeholders, education and outreach, and identification of funding sources for lake management efforts.

As of the Summer of 2018, the Coeur d'Alene Tribe (CDA Tribe) asserted that the LMP is inadequate, in itself, as an effective tool to protecting water quality in the Lake due to water quality triggers - lead, phosphorus and dissolved oxygen, in particular, being exceeded. These triggers were developed by the Tribe and IDEQ in the 2009 LMP and as stated in the LMP, if these triggers were to be exceeded within 10 years after the adoption of the Lake Management Plan, the Tribe and IDEQ would revisit the effectiveness of the LMP and go back to EPA and call for more action to re-address the hazardous substances that continue to remain at the bottom of the lake. The State of Idaho initiated a third-party review of lake management data by the National Academy of Sciences (NAS) in 2020 to help inform an appropriate response to undesirable water quality trends. A final report from NAS is expected in 2022. IDEQ staff continue to operate under the LMP as discussions with the Tribe and EPA continue and the third-party review progresses. This work plan includes activities planned for implementation by IDEQ staff.

Below are the objectives outlined in Section 3 of the LMP: These objectives are listed in the order they appear in the LMP, which does not necessarily reflect any prioritization.

1. Improve Scientific Understanding of Lake Conditions through Monitoring, Modeling, and Special Studies.

2. Establish and Strengthen Partnerships to Maximize Benefits of Actions under Existing Regulatory Frameworks.
3. Finalize and Implement a Nutrient Reduction Action Plan.
4. Increase Public Awareness of Lake Conditions and Influences on Water Quality.
5. Establish funding mechanisms to support LMP goal, objectives and strategies.

In 2022, IDEQ staff will implement the following efforts to address objectives outlined above:

**Increase Scientific Understanding (LMP Objective 1):**

1. Conduct water quality monitoring in Coeur d'Alene Lake for metals, nutrients, and physical parameters
2. Provide support to NAS to facilitate the third party review of lake data
3. Develop modeling objectives to guide selection of appropriate tools for lake management (utilizing NAS recommendations)

**Nutrient Reduction and Implementation (LMP Objective 3)**

1. Work with funding recipients for the Building Idaho's Future initiative for phosphorus reduction in Coeur d'Alene Lake to develop contracts and ensure successful project implementation
2. Work with BIF applicants that were not funded to identify other potential funding sources and assist in further project proposal development, where needed
3. Continue lake tributary monitoring initiated in 2019 to fill gaps in nutrient loading data identified in the nutrient inventory report
4. Share relevant data gap monitoring results with stakeholders to aid in decision-making and potential project ranking
5. Continue to collaborate on water quality improvement efforts in the Coeur d'Alene Basin with the Coeur d'Alene Lake Advisory Committee, Restoration Partnership, AVISTA Corporation, the Natural Resource Conservation Service (NRCS), the Soil & Water Conservation Districts, Counties, Cities, and others
6. Identify opportunities to align nutrient reduction and remedial efforts in the Lower Basin.
7. Continue implementing aquatic plant surveys within the northern lake

**Increase Public Awareness (LMP Objective 4)**

1. Continue to partner with Coeur d'Alene Tribe, University of Idaho (UI), CDA Vision 2030, Coeur d'Alene Regional Chamber of Commerce, and other stakeholders to share information with the basin-wide community through the Our Gem Coeur d'Alene Lake Collaborative
2. Continue to participate in The Confluence Project to support Basin high schools by providing workshops and guidance for teachers and students involved in field-based watershed science
3. Partner with UI, Coeur d'Alene Tribe, and area high schools and environmental organizations to host the annual Youth Water Summit, the culminating event of The Confluence Project (as pandemic restrictions allow)
4. Partner with UI/Community Water Resource Center to support the Bay Watchers program to provide land management information and resources to residents around Coeur d'Alene Lake
5. Support the Local Gems program to recognize businesses and organizations that are taking action to protect basin water quality
6. Participate in other joint educational and outreach opportunities as time allows

Continued coordination with BEIPC forums will maximize opportunities for information exchange and advice for all the parties that participate in the BEIPC activities. Future coordination with the BEIPC recognizes that IDEQ retains their respective decision making authorities under CERCLA and the Clean Water Act (CWA) with regards to implementation.

## 2.2 COEUR D'ALENE TRIBE LAKE ACTIVITIES

As noted, the LMP was approved in 2009. However, after collecting and analyzing water quality data under an EPA approved Quality Assurance Program Plan (QAAP) the Coeur d'Alene Tribe retracted their support of the LMP in 2019, as an adopting government. Declining water quality, as well as a myriad of other concerns prompted the Tribe's retraction of support. The Tribe detailed their concerns about LMP effectiveness in a written critique. The Tribe has asked EPA to formally evaluate how they will use their CERCLA authorities to address the legacy of mining pollution in Coeur d'Alene Lake. In 2022, the Tribe will conduct the following activities outside of the LMP process:

- Continue to improve scientific understanding of lake conditions through monitoring and modeling of metals, nutrients, and physical parameters.

- Tribal staff will continue to utilize the AEM3D and LOADEST models utilizing real-time data collected from the Lake and four meteorological stations.

- Tribal staff will continue to implement a Eurasian watermilfoil Treatment Program as well as monitor aquatic plant communities in the southern lake.

- Tribal staff will continue to work with EPA to identify potential opportunities to align nutrient reduction and remedial efforts in the Lower Basin through modeling and coordination.

- Provide updates to the draft Lake Status Report to the TLG for feedback prior to distribution to the BEIPC.

- Identify nutrient reduction projects along tributaries with assistance from stakeholders.

- Tribal staff will continue to partner with the University of Idaho-Community Water Resource Center (U of I CWRC), CDA2030, PHD, CDA Chamber of Commerce, interested citizens, and IDEQ to support the Basin high school students through The Confluence Project (a hands on 'place based' learning program addressing watershed science based solutions), the Bay Watchers Program (a citizen science program with landowners around the Lake), and the Our Gem Coeur d'Alene Lake Collaborative.

- Tribal staff will continue to support The Local Gems program for local businesses through 2022. This program recognizes businesses and organizations that are taking action to protect basin water quality.

- The Tribe will continue to engage with and provide data to the NAS for their 'Status Review and Analysis of Coeur d'Alene Lake Water Quality" through Fiscal Year 2022.

- The Tribe will continue to request that EPA develops criteria and conducts a review/ evaluation of their decision to "defer" a remedy for the Lake.

## 2.3 FLOOD CONTROL AND INFRASTRUCTURE REVITALIZATION

Under a 2018 MOA, participating governments of the BEIPC and the Upper Basin jurisdictions (Local Flood Group) will continue to work on potential flooding issues on the SFCDAR and Pine Creek. During 2022 the Local Flood Group and the BEIPC will continue to work with the U.S. Army Corps of Engineers (COE) and Federal Emergency Management Agency (FEMA) to complete a LOMAR to update the 2009 Flood Inundation Maps based on the current flood zone analysis by the COE on a portion of the River from Elizabeth Park to the Theater Bridge in Smelterville. Based on the new flood maps it is anticipated that updated analysis of the need for certified levees in the SFCDAR may also be initiated in late 2022. The working group will also support the City of Pinehurst's request for COE assistance in performing a similar flood zone analysis in Pine Creek. Although much of the needed work outlined in the 2009 Drainage Control Infrastructure Revitalization Plan (DCIRP) is now complete, the BEIPC Executive Director will continue to assist Upper Basin communities and utilities in pursuing funding to implement the remainder of the DCIRP.

## 2.4 COMMUNICATIONS AND PUBLIC INVOLVEMENT

During 2022, the BEIPC Assistant to the Executive Director and agency Community Involvement Coordinators (CICs) will work together to carry out public involvement, communication, and education related to BEIPC and agency activities. Agency CICs may include staff from EPA, IDEQ, and PHD.

The Office of the BEIPC Executive Director, the CCC and agency CICs continue to facilitate the public involvement process in the Basin. The BEIPC Executive Director and/or Assistant, Project Focus Team Chairpersons, and CCC Chairperson may request CIC support for public outreach regarding BEIPC activities. The CICs may in turn request BEIPC support for their agencies' public involvement activities.

Following is a partial list of community engagement activities and coordination opportunities for 2022:

- As required, the BEIPC will hold quarterly meetings open to the public. The CCC will hold meetings open to members and the public as issues or opportunities arise or discussions are warranted.

- The BEIPC will coordinate its annual tour in August of the Basin cleanup with publicity support from the CICs and technical support from agency project managers. The tour is open to everyone.

- The BEIPC/CCC and agency CICs will continue to sponsor activities such as open houses, workshops, training, or public meetings. The BEIPC Assistant and CICs may assist each other to coordinate public education and outreach associated with these events.

- The BEIPC/CCC will lead the development, production and distribution of BEIPC related items and the agency CICs will lead the development, production and distribution of agency items. The BEIPC/CCC and agency CICs will create and process flyers, public notices, newspaper ads, and posting to their respective websites of their meetings and other information. The BEIPC/CCC will also create, process, and distribute their meeting announcements, agendas, and their meeting summary notes and other information by e-mail to CCC members and interested parties. The BEIPC Assistant will update and maintain the BEIPC website.

- CICs will continue to support the CCC meetings, support BEIPC communications, and explore ways to maximize the CCC's value to interested local people. Upon request, CIC's may support BEIPC with suggestions for publicizing BEIPC events and meetings, participate in distributing meeting announcements, posting to social media, or by proposing and/or helping to implement communications strategies.

- Upon request, the BEIPC Executive Director will make presentations to public groups and participate in educational forums such as school district Science, Technology, Engineering and Math (STEM) fairs, etc. Assistance from agency CICs may be requested for these efforts. The Director will participate in quarterly press availability sessions, as scheduled by EPA.

- The BEIPC and agency CICs will help organize and participate in a joint booth for public outreach/education at the North Idaho Fair.

- The EPA will publish BEIPC/CCC information upon request in its triannual Basin Bulletin and on the CDA Basin Facebook page.

- CICs work directly with EPA, IDEQ, PHD, and BEIPC project managers as needed to tailor communications outreach and/or education for specific projects under the programs listed in this work plan.

- CICs will report their outreach activities at the quarterly Basin Commission meetings, and activities are often reported and discussed at CCC meetings.

## 2.5 STATE OF WASHINGTON ACTIVITIES

The Washington State Department of Ecology will continue to monitor the status of previous cleanups along the Spokane River. Site visits will be performed, along with visual documentation of performance and sediment accumulation. If changes in sediment accumulation are observed, a portable XRF will be used to measure contaminant concentrations.

## 2.6 RESTORATION PARTNERSHIP

The Restoration Partnership (Partnership) is a consortium of the Coeur d'Alene Basin Natural Resource Trustees, comprising representatives of agencies/governments who have management and stewardship responsibilities for fish, wildlife, and other natural resources in the Basin. They are the U.S. Department of Agriculture, represented by the U.S. Forest Service (USFS); the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM); the Coeur d'Alene Tribe; and the State of Idaho, represented by the Idaho Department of Fish and Game (IDFG) and Idaho Department of Environmental Quality (DEQ).

**The following natural resource restoration projects will continue to be implemented in 2022.**

- Conservation Easements along the Coeur d'Alene River corridor by the USFWS.

- Management of a native willow plant nursery adjacent to Hepton Lake on the St. Joe River by the Coeur d'Alene Tribe.

- Wetlands enhancement at Hepton Lake on the St. Joe River by the Coeur d'Alene Tribe.

- Projects for the replacement of injured/lost tribal cultural services (fish and culturally significant plants) in the Hangman Creek Watershed by the Coeur d'Alene Tribe.

- Coeur d'Alene Lake monitoring and modeling by the Coeur d'Alene Tribe.

- Wetlands restoration planning and implementation at Grey's Meadow along the Lower Coeur d'Alene River by IDFG. This is a joint project with EPA conducting the remediation and the Restoration Partnership conducting the natural resource restoration with IDFG as Trustee Sponsor.

- Gene Day Pond Public Access Improvements with the Shoshone County Sportsman Association and sponsored by IDFG.

- Ongoing operations and maintenance for the Schlepp Agricultural to Wetlands Conversion Project with the landowner sponsored by USFWS.

- The use of LiDAR data to prioritize restoration projects by the USFS.

- Cougar Bay Preserve Wetlands Enhancement and Stream restoration with BLM as the primary sponsor with assistance from USFWS.

- Lake Creek Watershed Restoration within Idaho by the Coeur d'Alene Tribe.

- Prichard Creek Phase 1: Conservation Easement and Restoration Planning with the Idaho Forest Group and Trout Unlimited and sponsored by IDEQ.

- Red Ives Creek Restoration and Dam Removal Design by the USFS.

In 2022, there will be ongoing coordination with EPA and the CDA Trust on remedy and restoration activities and participation in BEIPC and associated groups and committees.

For more information, refer to **www.restorationpartnership.org.**