

BEIPC Coeur d'Alene Basin Calendar Year 2019 Work Plan

INTRODUCTION

This plan covers proposed environmental cleanup and improvement activities in the Coeur d'Alene Basin scheduled for CY 2019 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 2019 - 2023 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 Work Trust (Trust) and Potentially Responsible Parties (PRP).

Part 2 - Other Activities and Responsibilities

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

Part 2 includes work and responsibilities concerning management of Coeur d'Alene Lake by the CDA Tribe and State of Idaho, restoration of natural resources by the Natural Resource Trustees and work the BEIPC has assumed based on recommendations from the 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 CY 2019 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); Paved Road Remediation Program; Remedy Protection Program; Lead Health Intervention Program (LHIP); and Recreation Use Activities.
- Repository 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

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, community and recreational areas in the Upper and Lower Basin and the Paved Road Remediation Program. The RODA addresses source control remedies, water treatment remedies, ecological cleanup projects with related human health activities and the Remedy Protection Program.

1.1.1 Residential and Commercial Property Remediation

During 2018, the Trust's Basin Property Remediation Program (BPRP) remediated about 52 properties. Sampling work in 2018 included residential, commercial, and recreational properties, rights-of way, private drinking water sources, and house dust.

The goal for 2019 is to complete cleanup of approximately 20 properties. The program also plans to sample about 10 properties that qualify for the BPRP. The work planned for 2019 represents all remaining parcels eligible for BPRP sampling and cleanup for which property owners have granted access.

In 2019, EPA will continue to direct and oversee the Trust's 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). At the end of 2019, most properties remaining to be sampled and/or cleaned-up will be properties whose owners have withheld access or properties whose owners have not responded to numerous contact attempts.

1.1.2 Paved Roadway Surface Remediation Program

The BEIPC, EPA and IDEQ developed a Roadway Surface Remediation Strategy in 2012 in recognition of some road damage caused by heavy truck traffic during remediation work and potential ongoing risk posed by deterioration of paved roads in remediated areas. The purpose of the program is to address the deterioration of paved road surfaces that are underlain by contamination. Work is intended to ensure road surfaces continue to serve as barriers that reduce or eliminate exposures. There were 593 segments to be remediated in the original strategy. The EPA/IDEQ Roads Board has added 13 segments that were found to meet the criteria for remediation under the program resulting in 606 segments on the current eligible list. The local road jurisdictions are responsible for implementing the program and continuing operations and maintenance of the paved road segments as barriers. Work under this program is being carried out by the local road jurisdictions with funding through IDEQ and the Coeur d'Alene Trust.

As of the end of the 2018 construction season, Wardner, Smeltonville, Eastside Highway District, Pinehurst, Osburn and Wallace have completed all of their eligible segments in the Paved Roads Program. Mullan's final remaining segment is 8th Street, and will be completed with the Tiger Creek Remedy Protection Project in 2019. In Kellogg, all roads that have been excavated during their sanitary sewer project that have not yet been repaved will be completed by June of 2019. Kellogg will also complete the remainder of McKinley Avenue in 2019. Shoshone County will complete the remaining eligible segments in Woodland Park, and will also complete the remaining eligible portions of Pine Creek Road in 2019 in coordination with bridge replacements funded through the Local Highway Technical Assistance Council (LHTAC).

1.1.3 Remedy Protection Projects

Remedy Protection is a high priority in the Bunker Hill Superfund Cleanup Implementation Plan (SCIP). The objective of this work is to protect the installed human health related remedy from recontamination and scouring caused by heavy precipitation and tributary flooding. All Remedy Protection projects are now complete in the Box. In 2019, work on projects in the Upper Basin portion of OU-3 will continue with construction of the last four Remedy Protection projects remaining: the upper portion of Tiger Creek in Mullan, Blackcloud Creek at Ninemile Creek Road 2.5 miles north of Wallace, localized storm water collection in the Gem area, and the Star Parking Area adjacent to Canyon Creek Road.

Preparation of an Explanation of Significant Differences (ESD) or other decision document will be completed and signed by EPA in 2019, finalizing the remedy selection decision for the Star Parking Area adjacent to Canyon Creek Road and for the Gem area. By the end of 2019, design and construction of all Remedy Protection projects will have been completed.

1.1.4 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. The 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 level of 10 micrograms per deciliter ($\mu\text{g}/\text{dl}$) to a new “reference value” of $5\mu\text{g}/\text{dl}$. The 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 again be conducting its annual summer screening with a \$30 incentive for children between ages 6 months to 6 years of age residing within the Basin for 2019.

When an individual is identified with an elevated blood lead, it is recommended their physician is notified and Panhandle Health District will make an appointment for a home visit in efforts to identify the source of exposure. These in-home consultations help PHD and individual families identify ways to reduce the risk of exposure and detect potential sources in or around the home. In addition, they can help identify exposure pathways the larger project can focus on to reduce blood lead levels.

Additional Services offered by PHD’s LHIP:

- HEPA vacuum loan program for cleaning residences
- Educational and awareness for parents and children
- Education classes in local school’s grades K-12
- Annual Environmental Science and Health Fair
- Sampling of soil, dust, paint, water, and other media as appropriate

1.1.5 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: www.deq.idaho.gov/playclean.

Addressing contamination at recreation sites is different than other cleanup activities. Many places are recontaminated with each high water event or flood 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 wide spread of 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 2019, the Recreation Sites Program, which includes EPA, IDEQ, PHD, CDA Trust, and CDA Tribe, will meet quarterly to evaluate and discuss priorities. In the Basin, the CDA Trust will continue to update and install new signage at identified recreation sites, and conduct follow up activities on the temporary wash stations that were placed in 2018. Pilot projects will be completed for sites where action started in late 2018, including the Nine Mile fishing pond and areas near the Cataldo Boat Ramp; new pilot projects also will be identified in early 2019. In the Box, IDEQ and PHD will continue to update signage and evaluate access controls at mine sites where ATV use has been identified. Work will also include development of remedial action alternatives for areas sampled in 2018 along the South Fork of the Coeur d'Alene River (SFC DAR). 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.

1.2 REPOSITORY DEVELOPMENT AND MANAGEMENT

Background

There are currently three operational repositories within the OU-3 area; 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 (OU1 and OU2). In 2015, disposal of relatively inert asphalt concrete and road base in the repositories was minimized by developing two Limited Use Repositories (LURs) in East Osburn and Government Gulch. The LUR in East Osburn was filled to capacity in the fall of 2015 and a clean gravel barrier was installed over the waste area. In 2016, two additional LURs were developed for disposal of asphalt concrete and road base material. The two LURs developed in 2016 are the East Zanetti Yard in Osburn and the Shoshone County Transfer Station, east of Kellogg. The Transfer Station LUR reached capacity in the 2018 season and was capped with a clean gravel barrier. The Zanetti LUR is expected to reach capacity late in 2018 after which the clean gravel cap barrier will be installed. In addition, a community fill project (CFP) was developed adjacent to the Government Gulch LUR to accommodate ICP wastes generated by the City of Kellogg's infrastructure projects that are being constructed coincidental to its Paved Roads Program. The Government Gulch LUR and CFP will continue to be operational in 2019.

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, Remedy Protection, Paved Roads Program, and other cleanup actions

performed by IDEQ, EPA, and the 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 was estimated to reach the total design capacity in 2017 but did not due to adoption of a design to fill a saddle area within the repository waste footprint. BCR currently has a remaining capacity for approximately 130,000 compacted cubic yards (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 to date BCRA has received approximately 19,300 cy of waste.

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 designed waste capacity is 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. Approximately 32,500 cubic yards of waste were delivered to EMFR in 2018.

LBCR is located in Burke Canyon on the Star Tailings Impoundment near the community of Woodland Park. The CDA Trust completed the LBCR design and construction in 2015. Approximately 16,000 cy of wastes were received at LBCR in 2018.

The Page Repository is located just west of Smelterville. Having reached its previous design capacity in 2010, Page is being expanded to provide capacity for an additional 700,000 cy of waste. Because of the policy change to use LURs to dispose of paved road wastes from the Box Paved Roads Program, the service life of the Page West Expansion was likely extended by 10 years, for a total life expectancy of about 45 years.

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) Facilitate the disposal of inert road wastes in LURs
- (4) Operating BCR, BCRA, EMFR, and LBCR
- (5) Beginning final closure of BCR
- (6) Increasing repository volume in the Upper Basin
- (7) 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

The estimated waste disposal capacity needed at the Page Repository and Government Gulch LUR in 2019 is approximately 50,000 cy which includes Paved Roads, ICP, and Box Ground Water Collection System (GWCS) wastes. Page Repository and Government Gulch LUR operations will include but are not limited to the following tasks:

- Receipt and placement of Paved Roads, ICP, and Box GWCS wastes

- 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

2019 work will include placement of concrete debris removed from road surfaces through the Paved Roads Program to construct starter berms and foundation mattress in the Page expansion cells. Other concrete debris received from ICP waste streams will also be utilized as starter berm and foundation mattress material. Expansion cell foundation materials that were placed in 2018 will be allowed to sit for one year to accommodate settling of the soils beneath the foundation mattress. A test plot will be loaded with a 10-15 foot thick waste lift and monitored with geotechnical instrumentation to ensure that the foundation strength is consistent with the repository design. Once the geotechnical testing has shown the foundation settlement is consistent with the design, the new expansion cell footprint can begin accepting waste.

Basin Repository Operations

In 2019, Basin repositories and LURs will be operated to accept waste from the BPRP, Paved Roads, and Remedy Protection Programs as well as ICP waste. There is significant uncertainty in waste volume projections for infrastructure (ICP) waste. However, Basin repositories are estimated to potentially receive as much as 40,000 cy from all projects in the Basin. Anticipating those needs, the Basin repository and LUR operations include but are not limited to the following tasks:

- Receipt and placement of BPRP, Remedy Protection, Paved Roads and ICP wastes
- 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 placement to fill all remaining capacity at BCR
- Transition of operations from BCR to LBCR and BCRA

Increasing Upper Basin Repository Capacity

Increasing Basin long-term repository 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 Waste Consolidation Areas (WCAs) and repositories. Waste generated by remedial actions in the East Fork of Ninemile Creek is disposed of in the WCA, located in the Upper Ninemile drainage. The CDA Trust finalized construction at the WCA in 2016.

A repository siting process, with community input, was developed to identify new repository sites to support cleanup activities in the Upper Basin. First, the LBCR was constructed and began receiving waste materials in 2015. Second, baseline site characterization data was collected and a 30% design was completed in 2011 at Osburn Tailings Impoundment (OTI). Based on remedial project planning, as described in the RODA, and with close coordination with Hecla Mining Company, activities at the Star Mine Complex in Burke and the OTI design were put on hold to focus on the more immediate needs for

repository capacity in Canyon Creek. Third, in 2015 the CDA Trust began evaluating and collecting data to evaluate rebuilding the old Silver Valley Natural Resource Trustee (SVNRT) Repository in Canyon Creek, now called the Canyon Complex Repository (CCR). In 2017, public comment was sought on the 30% design for rebuilding the SVNRT repository and the CDA Trust expects to finalize the design by December 2018. This area, in combination with the existing LBCR, will likely be able to handle all waste generated in Canyon Creek.

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

Waste Management Strategy (WMS) Update

The WMS is a key document that guides repository 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 capacities. The WMS is developed 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 ENVIRONMENTAL REMEDIATION ACTIONS

Environmental remediation actions include work in the Upper Basin described in the RODA and work in the Lower Basin described in the OU-3 ROD.

1.3.1 Upper Basin Remedies

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

The Upper Basin RODA identified \$635 million 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 OU-2 Phase 2 cleanup to improve water quality in the SFCDAR
- 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 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 2019 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 Coeur d'Alene Work Trust in the Upper Basin during 2019:

1. The Trust began cleanup of the Success Site and associated riparian areas in 2016. The Success cleanup is expected to be complete in 2019.
2. In 2019, the Trust will evaluate data collected during characterization work in the East Fork Ninemile Creek watershed.
3. The Tamarack Site 30% Basis of Design is expected to be complete in 2019.
4. The 100% Canyon Creek Complex Repository (formerly SVNRT) design is expected to be complete by December 2018. In the interim, to prevent exposure, the area has been fenced to eliminate the current unauthorized use by pedestrians and ATV's.

Work under the Corps of Engineers Design/Build/Operate Contract to AMEC/Foster Wheeler (now Wood) is well under way. Wood is responsible for the continued operation of the existing Central Treatment Plant (CTP) in Kellogg and the design and construction of upgrades to the CTP along with the new Groundwater Collection System (GCS). The Corps of Engineers is responsible for administration and management of this contract.

The CTP upgrades are 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 have been 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 will be 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 plant is currently not capable of meeting discharge standards when being operated in HDS mode, the upgraded plant when 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 will be required to 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 is currently being discharged to the SFCDAR from groundwater interaction, as discussed in the following paragraph.

The GCS design 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 ranges 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.

In 2018, the last of the design packages were finalized and submitted to the Corps of Engineers. Earthwork and installation of the liner system at the new Sludge Impoundment Area (SIA) is almost complete. A major milestone was reached in September when treatment operations shifted from the CTP to a temporary system. This allowed Wood to commence demolition of existing treatment components that will be replaced as part of the upgrades, including the existing Aeration Basin and associated sub-systems (e.g., Rapid Mix Tank, Aeration Basin, Floc Basin, and associated infrastructure systems). Wood commenced work on the slurry wall for the GCS in June 2018 and by October 1 construction of the wall was 67 percent complete. During the 2019 construction season, Wood will install the GCS extraction wells and associated piping, complete the slurry wall, and construct the effluent outfall. Additionally, the SIA will be completed along with major new treatment processes at the CTP including: the Filter Building and new pressure filter system, thickener, and reactors along with associated piping and automated control systems.

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, river banks, splay areas and river bed dredging. Objectives of remediation in the Lower Basin focus on improving water quality and reducing particulate lead and other heavy metals in the Basin ecosystem.

In 2018, investigative and modeling work in the Lower Basin culminated with a working sediment transport model and a much more comprehensive picture of the channel reaches and bed characteristics that are primary sources of lead to the environment. The model development report was completed and is under review by the modeling Peer Advisory Team. EPA is currently using the model to characterize baseline conditions in the Lower Basin. The model has been used to simulate the impacts of typical and extreme floods as well as changes to the system over a five-year and 30-year period. This will inform a management plan that targets areas for active remediation, evaluates the effects of remedial technologies, and identifies areas for natural recovery. The results of these efforts continue to be shared with the subgroups of the BEIPC (e.g. Lower Basin PFT, TLG and CCC), interested stakeholders, and citizen groups. Several of the more significant documents under the Enhanced Conceptual Site Model for the Lower Basin can be found on the EPA website under the Lower Basin including:

Technical Memorandum Addendum D-2 - Floodplain Sedimentation Rates Developed from One-Dimensional Model Results

Technical Memorandum Addendum D-3 – Processes of Sediment and Lead Transport, Erosion, and Deposition

Technical Memorandum Addendum E-5 - Riverbank Characteristics, Erosion Rate, and Lead Contribution

Technical Memorandum Addendum E-6 – Riverbed Characterization

<https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.scs&id=1000195&doc=Y&colid=35748®ion=10&type=SC>

In 2018, EPA monitored a second year of Incremental Thin Layer Capping (ITLC) to evaluate application of native alluvial material on wetland vegetation response. Samples were also collected for analysis and testing of possible amendments to reduce the bioavailability of lead. The ITLC technique continues to show promise for reducing exposure to lead concentrations in sediment with minimal impact to sensitive wetland ecosystems. In October 2018, sampling is planned for the IDFG Black

Lake Ranch property and the private agricultural property adjacent to Strobl Marsh (around RM 150). These data will be used to inform potential remedial and restoration design.

In 2018, the EPA finalized the Strategic Plan for the Lower Basin; it can be downloaded from the EPA website (above). The EPA also expanded its efforts to test and apply a structured decision process for prioritizing work in the Lower Basin within the Strategic Plan's focus areas (human health, clean off-channel habitat and source control). The purpose of the Lower Basin Project Selection Process is to identify, evaluate, and select projects to be designed, implemented, and monitored within the next 3 years and beyond in an adaptive management framework. The process will be iterative, and conducted periodically as needed based on funding, knowledge, opportunities, and experience gained from implementation and subsequent monitoring.

The EPA reached out to agency partners, the Restoration Partnership and members of the CCC (June 13, 2018) to help identify key values, projects and objectives that should be considered in the selection process. A workgroup of agency staff with experience and specific expertise working in the Lower Basin tested the process on a group of potential projects that have been identified over the years (including projects identified in the 2013 Lower Basin Pilot Project Forums). The process will be further tested with the Lower Basin PFT and the results and insights will be used to inform the EPA's annual and long-term work planning through the CDA Work Trust. Going forward, the Lower Basin PFT will continue to assist the Lower Basin Project Selection Process by providing updates on new technologies, pilot projects for consideration, key technical input, and project ideas.

The EPA is not selecting new remedies for the Lower Basin through the strategic planning process, but prioritizing, evaluating, and implementing actions and technologies that have been previously selected or could be piloted under the existing 2002 ROD. The 2002 ROD provides a large degree of flexibility in how EPA chooses to approach development and implementation of remedies in the Lower Basin. However, EPA may select supplemental actions, which are not explicitly identified by the ROD, and which may require additional ROD amendments or Explanations of Significant Differences (ESDs).

Informed by the Lower Basin Project Selection Process, EPA will coordinate with the Restoration Partnership in 2019 to commence design work on one of the habitat areas that scores well using the decision process and is considered ready for implementation. In the CDA River channel, EPA will initiate a management plan for addressing the contaminants mobilized from the Dudley Reach, which is considered one of the highest loaders of lead into the river. Several technologies including capping, dredging and riverbed weirs will be evaluated for feasibility, cost and remedy effectiveness. Several recreation areas were considered during the selection process and lead exposure associated with recreating along the river channel is an ongoing concern. At a minimum, EPA plans to conduct a more thorough inventory of both recreational beaches and banks (including all banks that have been remediated or stabilized) to identify those beaches or banks that may be considered for remediation in the future.

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. In 2019, soil amendments will be bench tested at EPA's research laboratories with plans to field test amendments along with ITLC at Lane Marsh in 2020.

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 complement 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 been working over the last several years to optimize the current sampling program by reducing the overall effort while continuing to update data quality objectives 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.

The most comprehensive summary of data collected through the BEMP is included in the 2015 Five Year Review. In 2019, EPA will begin to compile the BEMP data that will be summarized in the 2020 Five Year Review.

The USGS surface water sampling results for 2017 are available through: USGS Open-File Report 2018-1113: Coeur d'Alene Basin Environmental Monitoring Program, Surface Water, Northern Idaho - Annual Data Summary, Water Year 2017. The report can be downloaded from the following website: <https://pubs.er.usgs.gov/publication/ofr20181113>

EPA has completed an optimization review of the BEMP and the updated management plan will be finalized in 2019. The updated BEMP will reduce redundant or outdated monitoring from phase 1 remediation work and streamline and focus monitoring efforts in the Upper and Lower Basin.

The updated and revised BEMP will include the following:

- Distinguish monitoring required to assess Remedial Action performance and efficacy versus long-term progress toward remedial goals.
- Develop monitoring objectives for all monitoring based on information needed for site management decisions and regulatory requirements.
- Define baseline datasets for each monitoring program and medium.
- Articulate assumptions and expectations about chemical quality and ecological responses to remedial efforts.
- Describe how data will be managed and analyzed.
- Identify management actions potentially resulting from the outcome of data analyses.

The BEMP Management Plan will incorporate the site wide Program Quality Management Plan that was finalized in 2015 and Site-wide Data Management Plan (also scheduled for completion in 2019).

A Remedial Action Effectiveness Monitoring Plan for the Groundwater Collection System (GCS), currently under construction adjacent to the Central Impoundment Area (CIA) in Kellogg, will be finalized in 2018. Groundwater and surface water will be monitored to measure the effectiveness of the GCS. 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 Smeltonville, 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 following the construction and implementation of the GCS to more accurately estimate the efficiency of the interception system.

EPA continues to make available the analytical results from historic data through 2015 via WQX, EPA's Water Quality Exchange. Human health-related residential data is not included in this database. Data management for the Bunker Hill Site is transitioning to Scribe.net, an EPA data management system that will be administered by Bunker Hill stakeholders including EPA, IDEQ, and the CDA Trust with support from the EPA Environmental Response Team. Both WQX and Scribe.net databases include site surface water, soil, sediment, groundwater and biological resource sampling data. During this transition period, site-specific data requests should be directed to the EPA RPM at prestbo.kim@epa.gov.

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 NAS study; it also includes 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:

- Lake Management Activities
- Flood Control, and Infrastructure Revitalization
- Communications and Public Involvement
- State of Washington Activities
- Coordination with the Restoration Partnership

2.1 LAKE MANAGEMENT ACTIVITIES

The OU-3 Interim ROD did not include CDA Lake in the Selected Remedy nor is there a remedy identified in the Upper Basin RODA. The OU-3 Interim ROD anticipated that the State, Tribe, federal agencies, and local governments would implement a 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.

As of the summer of 2018, the Coeur d'Alene Tribe has determined that the LMP is inadequate, in itself, as an effective tool to protecting water quality in the Lake and has been in discussions with the IDEQ and the EPA to determine what additional mechanisms/actions are needed to manage the hazardous substances in the lake bed sediments. Therefore, although various aspects outlined in the LMP and listed below are essential to continue to implement the LMP, additional approaches to augment work conducted under the auspices of the LMP are being contemplated. These discussions will continue during 2019.

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. This objective is needed to ensure management actions are effective and efficient, providing a data-driven adaptive management approach.
2. Establish and Strengthen Partnerships to Maximize Benefits of Actions under Existing Regulatory Frameworks.
3. Finalize and Implement a Nutrient Reduction Action Plan. This plan will utilize existing data and ongoing monitoring to identify and prioritize nutrient reduction actions.
4. Increase Public Awareness of Lake Conditions and Influences on Water Quality. Only through awareness and understanding can nutrient management and reductions be achieved. Buy-in is critical to action.
5. Work with EPA to identify funding mechanisms to support water quality monitoring and modeling to inform EPA of their future decisions to call for actions in the Lake.

In 2019, State and Tribal staff will focus on working with stakeholders throughout the basin to implement the nutrient reduction action plan (once finalized) in response to inventory information, with the ultimate goal of on-the-ground improvements.

Increase Scientific Understanding (LMP Objective 1):

1. IDEQ and the Tribe will independently conduct water quality monitoring throughout Coeur d'Alene Lake for metals, nutrients, and physical parameters.
2. The Tribe will continue utilizing the AEM3D and LOADEST models. These models are utilizing real-time data that is collected from Coeur d'Alene Lake and four meteorological stations. The Tribe will reconvene with IDEQ after 2 years of model calibration to run water quality scenarios.
3. Draft updates to the Coeur d'Alene Lake Status Report will be provided to the TLG for feedback prior to distribution to the BEIPC.
4. Tribal and IDEQ staff will continue to evaluate water year variability and relationships among measured parameters in order to help inform stakeholders on possible causative factors for observed trends.
5. Both the Tribe and IDEQ will continue to partner with University of Idaho faculty at the LaSES Lab/Community Water Resource Center to explore special studies and research funding.
6. The Tribe will continue to partner with area research universities and organizations to support research that will strengthen the predictive ability of AEM3D.

Nutrient Reduction and Implementation (LMP Objective 3)

1. The final GIS-based basin-wide estimate of nutrient loading will be distributed to the BEIPC, TLG and CCC in early 2019. The nutrient inventory will be used to develop a nutrient reduction action plan in collaboration with stakeholders.
2. IDEQ staff will continue to work with County representatives and the Tribe and IDEQ staff will continue to work with Watershed Advisory Groups, and other potential partners for nutrient reduction project identification and implementation.

3. Tribal and IDEQ staff will continue to identify critical data gaps both spatially and temporally to identify potential sites for additional monitoring of nutrient loading, e.g. tributaries to CDA Lake.
4. In support of the Nutrient Source Inventory, IDEQ has established a monitoring site in Wolf Lodge Creek (as of fall 2017). Nutrient monitoring will be conducted throughout 2019 at this site.
5. The Tribe and IDEQ will continue to monitor pilot implementation projects in Windy Bay and on Wolf Lodge Creek to ensure success in plant establishment, and to assist in maintenance needs. These projects will be used as demonstration sites to encourage future implementation projects.
6. The report of the LMP Management Action Tables (MATs) audit will be presented to the BEIPC and others in 2019.
7. Stabilization projects along eroding banks will continue to be evaluated, prioritized, and implemented in collaboration with Avista Corporation, the Natural Resource Conservation Service (NRCS), the Soil & Water Conservation Districts, the Counties, and landowners.
8. The Tribe will continue to implement and evaluate the invasive Aquatic Plant Survey and Treatment Program in the southern lake, and IDEQ will continue implementing aquatic plant surveys within northern pool bays.
9. Tribal and IDEQ staff will identify potential opportunities to align nutrient reduction and remedial efforts in the Lower Basin.
10. Tribal and IDEQ staff will coordinate with the Restoration Partnership on water quality improvement implementation.
11. Tribal and IDEQ staff will collaborate with area Conservation Districts, NRCS, and Washington Department of Ecology on outreach and monitoring as part of the Resource Conservation Partnership Program (RCPP), an NRCS-funded initiative in the Coeur d'Alene/Spokane River drainage that will increase the availability of funding for Farm Bill conservation programs.

Increase Public Awareness (LMP Objective 4)

1. Tribal and IDEQ staff will partner with Spokane River Forum, CDA Vision 2030, and other agencies and stakeholders to plan a 2019 "Our Gem Symposium" to share information and get feedback from the basin-wide community.
2. Tribal and IDEQ staff will continue to partner with University of Idaho (UI) and Kootenai Environmental Alliance to support Basin high schools by providing workshops and guidance to teachers and students involved in field-based watershed science through The Confluence Project, and will continue to pursue funds to sustain this program.
3. Tribal and IDEQ staff will continue to partner with University of Idaho/Community Water Resource Center to develop and support the Baywatchers program, to provide land management information and resources to lakeshore residents.
4. Tribal and IDEQ staff will continue to partner with UI, area high schools, and area environmental organizations to host the annual Youth Water Summit, featuring secondary education watershed research projects.
5. Tribal and IDEQ staff will participate in other joint educational and outreach opportunities as time allows.

6. The Local Gems program for local businesses will continue through 2019. This program recognizes businesses and organization that are taking action to protect basin water quality.

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 and the Tribe retain their respective decision making authorities under CERCLA and the Clean Water Act (CWA) with regards to implementation.

2.2 FLOOD CONTROL AND INFRASTRUCTURE REVITALIZATION

During 2018 participating governments of the BEIPC and the Upper Basin jurisdictions (Local Flood Group) implemented a Memorandum of Agreement (MOA) to work together on potential flooding issues on the SFC DAR. The local flood group worked with the U.S. Army Corps of Engineers in 2018 under funding from a grant to perform flood zone analysis on a portion of the river. Under the MOA in 2019, the BEIPC Executive Director will coordinate the efforts of the Flood Group to seek additional funding to complete the analysis of the remaining portions of the river from Wallace to Elizabeth Park. Additional work to determine the best approach to development of flood control structures including an updated and certified levee system in the SFC DAR and Lower Pine Creek will be initiated in 2019. The Executive Director will continue to work with the EPA for implementation of selected in-stream CERCLA remedies included in the RODA. The BEIPC will continue to assist Upper Basin communities and utilities in pursuing funding to implement the Drainage Control Infrastructure Revitalization Plan (DCIRP) and the Executive Director will coordinate with the local infrastructure jurisdictions on an Operation and Maintenance plan for existing drainage structures in the Upper Basin.

2.3 COMMUNICATIONS AND PUBLIC INVOLVEMENT

During 2019, 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 the Panhandle Health District.

The Office of the BEIPC Executive Director, the Citizen Coordinating Council (CCC) and agency CICs continue to be the focus organizations 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 2019:

- As required by legislation, 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 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.

2.4 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.

2.5 RESTORATION PARTNERSHIP (Partnership)

The Restoration Partnership (Partnership) is composed of the Coeur d'Alene Basin Natural Resource Trustees, comprised of 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; the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service and Bureau of Land Management; 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. For more information, refer to www.restorationpartnership.org. 2019 anticipated work includes:

- Engage in project idea solicitation process with the public and other Basin stakeholders.
- Ongoing coordination with EPA with remedy and restoration activities and participation in BEIPC and associated groups and committees.
- *Schlepp Agriculture to Wetland Conversion Project*: The major restoration work on the project is complete and the project is in the long-term operations and maintenance phase. In 2018,

repairs were made to infrastructure that was damaged due to flooding in 2017 and a new stationary water pump was installed in the West Field to improve water management at the site. Habitat improvements were also conducted by removing encroaching stands of woolgrass and cattail to enhance forage for waterfowl.

- *Robinson Creek Wetlands Restoration Project:* The Robinson Creek Wetland restoration projects wrapped up its third post-construction growing season in 2018. Disturbed soils are now well vegetated and secure and IDFG crews continue to survey and control noxious weeds on the site. Although no formal surveys were conducted, staff noted several duck nests on the retention dike incidental to other work. Woody riparian plantings continue to struggle against ungulate depredations but are persisting and expanding. In the winter of 2016/2017, IDFG broadcast seeded and raked-in wapato seed which requires two cold periods for germination. During the summer of 2018, wapato was established and the approach used appears to be an effective and relatively low cost alternative to hand digging and transplanting tubers as a means of establishing this ecologically and culturally significant plant at Lower Basin wetland restoration sites. As the emergent wetland community continues to establish and develop we will be monitoring waterfowl use at this project.
- Finalize the Restoration Partnership's 3-5 Year Work Plan with the following projects selected by the Trustees for implementation under the guidance of the Restoration Plan:
 - *Conservation of Agriculture to Wetlands Conversion Properties:* Conserve properties that may be converted to productive clean wetland habitat for waterfowl and other wetland dependent wildlife.
 - *Black Lake Ranch Agricultural to Wetlands Collaborative Remediation/Restoration Implementation:* Planning and design phase to remediate and restore up to 700 acres of contaminated floodplain agricultural land to clean semi-permanent wetlands and waterfowl habitat. The project will be pursued as a joint effort of EPA and the Restoration Partnership. The high remediation and restoration potential of the site lends itself to EPA/RP collaboration and partnership in order to leverage funds and expertise to meet multiple and broadly overlapping objectives cost-effectively.
 - *Cougar Bay Wetlands Enhancement Project:* Restore the Cougar Bay wetlands to benefit waterfowl and fish, improve nutrient filtering and water quality into Coeur d'Alene Lake, and restore native riparian vegetation along a properly functioning wetland channel.
 - *Hepton Lake Wetland Restoration Project:* Planning and design to bring the lower St. Joe River valley back to a more natural pre-dam wetland condition. The project proposes to design and construct a breach control structure system to allow water to flow into the wetland area during spring runoff and flow out during summer and fall months. This is expected to reduce interactions between warm water and cold water fish species, as well as minimizing the amount of open water in the wetland. The proposed design will also include construction of wetland areas within the lake in order to provide habitat for water fowl and other wildlife. To round off construction, the site will be planted with native vegetation significant to the Coeur d'Alene Tribe, including willow, cottonwood, wapato, alder, and wetland grasses.
 - *Native Willow Nursery for Support of Restoration Actions throughout the Restoration Partnership Project Area:* The Coeur d'Alene Tribe will utilize Restoration Partnership funding to support restoration projects by creating a native willow nursery on Tribal property that will provide a steady supply of willow and cottonwood cuttings for restoration projects at no additional cost to future projects throughout the Coeur d'Alene, St. Joe, and Spokane River sub-basins.

- *Culturally Significant Plant Restoration*: The purpose of this project is to include plant species of cultural significance in ongoing restoration efforts in the Hangman Watershed, as a replacement for those resources that are unavailable in the Coeur d'Alene River Basin due to contamination, and cannot be produced at a sufficient scale at other, non-contaminated sites within the Basin. Encourage traditional harvest of plants of cultural significance to increase plant diversity and hasten the development of mature, native, floodplain habitats and harvest seed, and other propagules, from plants for cultural significance for inclusion in restoration site planting efforts.
- *Cultural Harvest Opportunities within the Coeur d'Alene Reservation*: return salmonids to the Coeur d'Alene People through the provision of a culturally significant put-and-take fishery, unimpeded by the hazards posed by mining contamination. Adult salmonids will be transported from donor facilities and released in Hangman Creek. Access to the release site will be improved to enable the community to fully engage in cultural harvest activities.
- *Coeur d'Alene Lake Education/Outreach*: support outreach and implementation involving landowners in nutrient reduction around the Basin. Funds will support public awareness through events and media, including the 2019 "Our Gem" symposium, print materials, including an update to the "Our Gem" map, and workshops. Working with partners including the University of Idaho and the Idaho Department of Environmental Quality, the Lake Management staff will continue to expand resource availability through the Baywatchers and Lake*A*Syst programs, promoting best management practices like riparian improvements and erosion and sediment reduction with a long-term goal of maintaining and improving water quality in Coeur d'Alene Lake. Additionally, the project will support the dissemination of modeling and monitoring trends to support decision-making at the local and regional level. Staff will also be using public outreach to engage partners who would like technical assistance in implementing restoration techniques on their property. The effectiveness of outreach efforts will be monitored to hone in on those efforts that gain the most traction with the public and result in the best outcomes for water quality.
- *Lake Management Plan Monitoring and Modeling*: The project will measure, model, and improve understanding of Coeur d'Alene Lake, and the lake's response to events and land use changes. The Coeur d'Alene Tribe will continue monitoring the nutrients, metals, productivity, organisms, and interacting processes of Coeur d'Alene Lake to: 1) ensure there are no gaps in the water quality monitoring data, 2) enhance the ability to refine a modeling tool to predict effects of upstream actions, and 3) manage data to better inform and guide restoration. This complements lake monitoring being conducted by IDEQ and others. Project data will be available to inform restoration projects and cleanup that deal with contaminated sediments. The project will also help the Partnership measure and evaluate Coeur d'Alene Lake's response to restoration.

This list reflects the objectives of the Partnership; however, the timing of these activities is tentative and likely to change given the scale of the restoration plan and scope of the program.