

## BEIPC Coeur d'Alene Basin Calendar Year 2006 Work Plan



**Canyon Creek**

### INTRODUCTION

This plan covers environmental cleanup and improvement activities in the Coeur d'Alene Basin scheduled for CY 2006 by the Basin Environmental Improvement Project Commission (BEIPC) in accordance with its 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 2005-2009 5-Year Work Plan. This plan has been prepared by the Technical Leadership Group (TLG) in collaboration with the Executive Director with review by the Citizen Coordinating Council (CCC), and is based on their recommendations for activities and work to be performed in CY 2006. The organization of the work plan is a reflection of the funding sources for the work. This work plan for 2006 is organized as follows:

Part 1 – Work Funded with Superfund or Other Cleanup Monies

Part 2 – Activities and Work Funded Through the Clean Water Act (CWA) Grant Program

Part 1 of this document includes proposed work for CY 2006 to implement the Operable Unit #3 Record of Decision (ROD) for the Coeur d'Alene Basin to be funded by the U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Superfund program or other environmental cleanup funding. As previously defined in the CY 2005-2009 five-year work plan, the human health remedy is established as a top priority with other environmental cleanup activities included where appropriate. Part 1 also contains information concerning the correlation between some of the work currently being performed under Part 2 and future work to be performed under Part 1.

Part 2 of this document addresses the work to be accomplished in CY 2006 with CWA Grant Funding. In Fiscal Years 2002, 2003, and 2004, funding under the CWA was provided for the BEIPC to be used for “...*research, investigation, experiments, training, demonstrations, surveys, and studies related to the causes, effects, extent, prevention, reduction, and elimination of pollution.*”

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, but it may not address all work items noted in the five-year plan because some will not be initiated until later years in the five-year plan.

## **PART 1 – OU-3 ROD WORK FUNDED WITH SUPERFUND OR OTHER CLEANUP FUNDING**

Funds made available through EPA’s CERCLA appropriations are available for environmental remediation on privately owned lands and state, county and local government owned properties. EPA’s CERCLA funds cannot be used for cleanup of sites on public (Federal) land. Work proposed on public lands is the responsibility of the federal land management agencies. The State of Idaho is supplying funding through the Idaho Department of Environmental Quality (IDEQ) for environmental cleanup activities.

For Part 1, the scope of the proposed work corresponds to the level of funding and the funding sources anticipated from EPA and State funding for CY 2006 for implementation of the ROD. The proposal includes the following OU-3 ROD work to be funded with Superfund or other cleanup monies:

- Evaluation of OU-3 Removal Actions
- Development and management of Repositories
- Development of the Institutional Controls Program for OU-3.
- Remediation in the Residential and Community Areas
- Remediation of Drinking Water Supply Problems
- Remediation in Lower Basin Recreational Use Areas
- Remediation of Mine and Mill Sites in the Upper Basin

- Preliminary ecological actions in the Upper Basin
- Preliminary ecological actions in the Lower Basin
- Basin Environmental Monitoring

Part 1 also includes the following items:

- Implementation of the Phase II Component of Overall OU-2 (Box) Remedy
- Coordination with the EPA Five-Year Review
- Consideration of the National Academy of Sciences Study

Table 1-1 is a summary of activities scheduled for CY 2006 to be funded with Superfund or other cleanup monies. More detailed descriptions of the activities follow the summary table.

**Table 1-1 Summary of Activities Proposed for Implementation of the ROD for CY 2006**

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Evaluation of PRE ROD OU-3 Removal Actions (see EPA 5-year Review Report)	Various parties have performed CERCLA removal actions. Results of these activities need to be evaluated and if warranted, incorporated into the OU-3 remedial action program.	Begin evaluation of these sites in context of the ROD and its schedule and incorporate into remedial action program as warranted.	EPA, IDEQ, BLM, USDA Forest Service, CDA Tribe
Repositories	Develop, as needed, repositories to support remediation and Institutional Controls Program (ICP). Plan, secure properties and be ready for remediation and ICP waste in Upper and Lower Basin anticipated in the next 5-10 years.	Utilize Big Creek for Basin remediation and ICP waste. Procure one new site in the upper Basin and one in the lower Basin. Finalize technical evaluations, goal to purchase East Mission Flats site and have it operational in 2006. Continued evaluation for potential acquisition of the Osburn Tailings Ponds site. Complete O&M cost requirements evaluation for candidate sites. Outline needs for the ICP.	IDEQ and EPA
Basin Institutional Controls Program (ICP)	Develop a program to manage activities in OU-3 to protect remediated areas from recontamination and to protect human health and the environment in areas requiring cleanup actions where no remedy is yet in place.	Implement the ICP in the CDA River Watershed portion of OU-3 by December 31, 2006.	IDEQ, PHD
Residential and Commercial Area Sampling and Remediation	Protect human health by continuing property sampling and property remediation program.	Complete sampling on 800 properties and remediate 400-500 properties in CY 2006.	IDEQ

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Drinking Water Supply	Protect human health by providing adequate drinking water supplies by continuing the sampling and remediation program.	For properties sampled in CY 2006 with private drinking water supplies, sample water supplies and implement remediation actions if necessary.	IDEQ
Recreational Areas	Continue to identify contaminated recreation use areas along the CDA River and remediate areas or develop substitute clean areas. Develop a Lower Basin recreational management plan.	Update contaminated recreation use area inventory. Begin the Lower Basin recreational management planning process. Complete work noted in Table 1-2 for CY 2006.	EPA with state and federal land management agencies
Mine & Mill Sites	Cleanup priority sites that contribute to human health risks, are currently utilized for recreation activities, and contribute to water quality impacts. Continue to evaluate and prioritize additional mine and mill sites identified in OU-3 ROD and begin designs so remedial actions can be initiated as funds become available.	Complete Phase 1 and 2 remedial actions at Golconda site and remedial actions at Constitution Site. Complete design and begin remedial action at Rex site and prepare priority list for remaining sites noted in the ROD.	EPA, IDEQ. With BLM in Pine & Ninemile Creeks.
Phase II Component of overall OU2 remedy	The effectiveness evaluation of the Phase I source control and removal activities to meet water quality improvement objectives for the OU-2 ROD will be used to determine appropriate Phase II implementation strategies and actions. Implementation of future Phase II remedial action may require a ROD amendment and a State Superfund Contract (SSC) between EPA and IDEQ.	The following documents concerning the OU-2 Phase I evaluation will be available Winter 2006: Revised OU-2 Conceptual Site Model; Statistical Trend Analysis of Groundwater and Surface Water; Phase I Remedial Action Characterization; and Revised OU-2 Environmental Monitoring Plan	EPA, IDEQ

Proposed Activity	Scope	CY 2006 Objective	Lead Agency
Blood Lead Screening in Children	<p>The Human Health PFT will explore alternative approaches to integrating universally available blood lead testing into the regular health care services received by Basin children aged 1-4 years with a part of the work being to identify an education outreach program. Such exploration will include examining alternative methods for implementing an integrated blood lead testing approach as reflected in those present in other states elsewhere in the nation. The goal will be to craft a two-year pilot program for the delivery of blood lead testing via this new approach. This goal may be modified as the Human Health PFT works on this issue.</p>	<p>EPA, IDEQ, IDOH, and PHD will continue to offer a universally available blood lead screening program in 2006. That program offers universal screening to children 0 to 6 years in age in the sense that screening is offered to all children for free and in the case of the Basin the program offers a \$20 incentive. Idaho Department of Health and Welfare, Division of Medicaid will work with participating physicians in the Basin to comply with requirements to perform blood lead screening during “well child checkups”. In addition, the TLG will also develop an approach to encourage and facilitate the provision of blood lead testing to children covered under Idaho’s Medicaid program.</p>	<p>IDEQ PHD</p>
Upper Basin Ecological Remedies	<p>Continue to evaluate approaches and technologies for water treatment in Canyon Creek that include pilot projects to develop design criteria and operational information. Remediate mine wastes along Denver Creek tributary to Pine Creek. Monitor previous remediation in East Fork of Ninemile, and water treatment pilot projects. Monitor existing growth media plots, assess biostabilization methods and develop media for capping waste material. Plan and prioritize remedial actions for other source areas.</p>	<p>Finalize development of water treatment approaches for surface and groundwater in Canyon Creek. Coordinate work with study performed under the CWA Grant Program. Continue to monitor completed remediation actions in Pine Creek. Complete Constitution site remediation and other projects noted under the Mine/Mill program for human health remedies. Prepare for remediation in future planning periods.</p>	<p>EPA and IDEQ. With BLM in Pine &amp; Ninemile Creeks. EPA and USFWS have lead in soil cleanup standard.</p>

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Lower Basin Ecological Remedies	Develop a pilot project for conversion of agriculture land into waterfowl habitat. Complete a pilot project on soil amendment to reduce bioavailability of lead. Design wetland remediation approach. Design splay remediation approach. Perform numerical modeling of River processes and sediment. Collect data on river bank conditions and metal concentrations. Monitor bank stabilization pilot projects and evaluate effectiveness. Develop lead cleanup level for riparian soil. Incorporate findings from AVISTA studies into remediation strategies. Develop lead cleanup level for riparian soil.	Continue to implement the Lower Basin CWA sub-grant projects and monitor the results to have a better understanding of the complex and dynamic system in the Lower Basin. Complete development of the lead cleanup level for riparian soils. Continue EPA and USFWS collaboration on perpetual protection, conversion and remediation of agricultural land, followed by restoration to wetland habitat ecologically safe for use by waterfowl.	EPA, IDEQ, USFWS and Coeur d'Alene Tribe
Basin Environmental Monitoring	Continue to implement long-term monitoring and make results available via <a href="http://www.storet.org">www.storet.org</a> . Implement remedial action effectiveness monitoring as appropriate.	Assess the effectiveness of remedial actions and trends in overall ecological improvement due to remediation and natural attenuation. Public outreach needed to assist in data access.	EPA working with other agencies including IDEQ, USFWS, and USGS

## **1.1 EVALUATION OF PRE ROD OU-3 REMOVAL ACTIONS**

Various parties have performed CERCLA removal actions in Basin sub-watersheds including Canyon, Ninemile, Pine, Moon, and Grouse Creeks and along the Upper South Fork and Lower Main Coeur d'Alene River to cleanup contamination, protect human health and restore ecological systems. Evaluate the results of these activities based on the OU-3 ROD and if warranted, incorporate into the OU-3 remedial action program. Continued monitoring is needed at a number of sites to protect the investment.

## **1.2 REPOSITORIES**

Repository development is an ongoing process that must address the demand for waste disposal space generated by remedial actions and the Institutional Controls Program (ICP), or the entire clean up is compromised and potentially stopped. IDEQ is taking the lead in developing repository options and the effort is coordinated with and funded by the EPA.

During 2006 and 2007, the Big Creek Repository (BCR) will continue to be used for the residential and community remediation program. Closure activities will begin for the BCR in 2008. This will require that in the latter part of 2007 a new repository site must be on-line to facilitate the residential and community remediation program. The 2006 objective is to procure one site for both remediation and ICP activities in the Upper Basin and one in the Lower Basin. At least one of these sites must be operational in 2007. In a continued effort to move forward on candidate sites, technical evaluations will be continued on the East Mission Flats site and should those evaluations display that it is appropriate, the next step will be to purchase and ready it for operations in 2006. At another site in the Upper Basin, technical evaluations will be continued for potential acquisition of a former Osburn Tailings Ponds site.

An ICP as outlined in Sub-section 1.3.1 will be developed. In order for the ICP to be adopted, an ICP contamination management strategy must be in place. The IDEQ and Panhandle Health District (PHD) will collaborate with EPA and local stakeholders to complete the waste management strategy in 2006. The entire evaluation will require knowledge of the long and short term needs of the communities that the ICP will support. Volume estimates taken from the OU-3 ROD put the total volume that could require excavation and disposal at 3.5 million cubic yards and other estimates recently provided by IDEQ put an upper range on the volumes at almost 7.9 million cubic yards including future ICP waste projections. Those volumes delineate a potential need for as many as 10 - 25 repositories with capacity of 325,000 cubic yards, (approximately the size of the BCR).

In addition, in 2006, IDEQ will complete a long term Operation and Maintenance (O&M) evaluation for those candidate repository locations that currently show promising potential for meeting repository siting objectives and criteria.



### **1.3 HUMAN HEALTH ISSUES**

Remediation of human health exposures is a remedial action priority as defined in the OU-3 ROD. It includes developing and maintaining an ICP as outlined in Sub-section 1.3.1 and conducting cleanup in residential and community areas as well as recreational areas. The ROD also identifies mine and mill sites that are used for recreation and represent risks to human health.

#### **1.3.1 Institutional Controls Program (ICP)**

The ROD for OU-3 requires Institutional Controls to limit future exposures to contaminated soils and groundwater not addressed by the selected remedy as well as to protect the remedy. The ROD states “It is anticipated that the existing Institutional Controls Program (ICP) in the Box will be used as a model for the Basin.” There are differences in CERCLA actions between the Box and Basin including diverse remedies enacted in the Basin such as the UPRR TLOP that necessitate changes to the Box ICP Model to make it consistent with the Basin ROD.

The Human Health PFT will develop a set of recommendations and position statements concerning a Basin ICP and its proposed jurisdictional boundary, and present them to the TLG for consideration. The TLG will review the recommendations and position statements and make its recommendations to the BEIPC for consideration. The BEIPC will deliberate on the TLG recommendations and make its recommendations to the EPA and IDEQ for consideration as they prepare a draft ICP. Once the draft is formulated, it will be presented to stakeholders for comment.

The objective for ICP completion is to have the ICP in place by December 2006, but this may not be possible if rule approval cannot be secured until the 2007 legislative session.

#### **1.3.2 Residential and Commercial Property Remediations**

This subsection section represents a large portion of the current “on the ground” work activities which directly implement the ROD. Not only does this work make sense from a human health perspective (i.e., reduce human health risk due to exposure to heavy metals, it also provides a path forward to remediate upper basin communities which is a precursor to having these communities “partially deleted” from the Superfund site).

The residential and community property remediation program includes the following property types:

- Residential yards
- Rights of Way
- Commercial facilities
- Apartment complexes
- School grounds
- Trailer parks
- Common use areas

Much of the program management work is done in the year preceding actual remediation. This fact is especially true for soil sampling and analysis and property mapping. In 2005 the sampling program sampled 800 properties in anticipation of the 2006 field season. Therefore the property management effort for 2006 will include planning for the 2007 field season. It is anticipated that management planning in 2006 will be for up to 500 properties to be remediated in 2007.

The remediation program emphasizes the remediation of high risk properties where possible. High risk properties are those properties on which children less than 7 years of age or pregnant women reside. In 2005 it is projected that 117 high risk properties will be remediated.

In planning the remediation program IDEQ also emphasizes work in communities in the upper end of the Basin. Those communities include Mullan, Wallace, Osburn, Silverton, and the Canyon Creek Watershed (Burke Canyon). This community emphasis will continue in 2006. In addition to the upper Basin properties it is necessary to remediate some properties in the Kingston/Rose Lake vicinity.

Since 1989 approximately 3,700 properties have been remediated. This total is the sum of OU-1&2 (Box) and OU-3 (Basin) properties. This estimate assumes that the Box program completes 140 properties and the Basin program 300 properties in 2005.

Remediation goals for 2006 are as follows:

- Remediate 400-500 properties
- Utilize multiple (2 or 3) remediation contractors
- Focus on High Risk properties
- Focus on properties in target communities
- Map 500 future properties for 2007 work
- Sample and analyze soils for 800 properties

### 1.3.3 Recreational Use Areas

The OU-3 ROD includes remediation of Lower Basin recreational use areas to reduce human exposure to lead and other metals. Some priority recreational use areas were identified in the ROD with the understanding that other recreational areas may be evaluated for cleanup based on factors such as risk of exposure, location and use.

Stage 1 – Recreational Areas Identified for Remediation - The first stage is remediation at existing publicly-owned recreational sites selected from those identified in the ROD. The areas proposed for remediation are existing recreation areas with a potential for a low-maintenance remedy that will be protective of human health. Table 1-2 identifies recreational sites identified as candidates for remediation under the 2005-2009 Workplan.

**Table 1-2 Priority Recreational Use Areas for Remediation**

Site Name	Land Manager/ Owner	CY 2006 Actions
Rainy Hill Boat Launch	Forest Service	- Pave existing boat launch parking area and establish paved picnic site near restrooms on north side of site. - Continue day use only limitation
Medimont Boat Launch Area and Rainy Hill Camping Area (on uncontaminated hill)*	Forest Service	- Evaluate potential for land exchange of sites for other natural resource lands and report results to BEIPC. If exchange possible, complete necessary documents and legal action by December 31, 2006. Continue day use only limitation. If land exchange not possible, continue to pursue funding to pave boat launch.
East of Rose Creek/West of Rose Lake	Forest Service	- Restrict access to contaminated dune area and install sign visible from river (current sign visible from road only).
Anderson Lake Boat Launch**	Idaho Dept. of Fish and Game	- Consider improvements in conjunction with Hwy 97 bridge replacement (scheduled for 2005-2006)

\* The FS and State of Idaho are considering a potential land exchange for the State to acquire FS managed lands along the Lower CDA River in exchange for natural resource lands at other locations in Idaho.

\*\*The Anderson Lake Boat Launch is immediately downstream of the Idaho Highway 97 Bridge across the Coeur d’Alene River. The Idaho Transportation Department (ITD) has started construction of the bridge and approaches. The new bridge will be considerably wider and bridge access will be adjusted accordingly which may in turn impact the Anderson Lake Boat Launch access point. Accordingly, EPA is deferring any decisions regarding additional remedial action work at the Anderson Lake Boat Launch so that any additional cleanup efforts can be coordinated with the bridge replacement. EPA will

continue to stay abreast of ITD's plans to the extent that this activity may influence the Superfund remedy.

Stage 2 – Lower Basin Recreational Management Plan – Working through the Recreation Project Focus Team (PFT), in 2006, begin development of a Lower Basin Recreational Management Plan involving agencies, local communities, impacted land owners and other stakeholders. Many agencies and entities, including BLM, Idaho Fish and Game (IDFG), the CDA Tribe, Idaho Department of Parks and Recreation (IDPR), FS, and counties, manage recreational sites in the Lower Basin. These entities may benefit from the establishment of a coordinated plan to administer recreational areas. This effort could include development of collaborative informational/educational strategies regarding the Basin and CDA Lake. The plan could also address development of cooperative maintenance agreements.

Results of both the AVISTA and Idaho Department of Parks and Recreation Lower Basin recreational use surveys are available. The Recreation PFT will review the results of these two surveys and make an assessment of additional recreational sites that may be candidates for remedial action.

#### **1.3.4 Mine & Mill Sites**

The OU-3 ROD identified a number of mine and mill sites with potential for human health exposures, primarily from recreational use. Prioritization of mine and mill sites in the Upper Basin is primarily based on risks of lead exposure to recreational users. Remedial designs will address these risks as well as any impacts to water quality. The mine and mill sites listed in the ROD that appeared to represent a potential risk to human receptors are as follows:

- Day Rock in Nine Mile Creek
- Upper and Lower Constitution, Highland Surprise, Nabob, Nevada Stewart, Hilarity, in Pine Creek
- Standard Mammoth, Sisters and Burke Concentrator in Canyon Creek
- Hercules, USBM, and Silver Dollar in South Fork
- Golconda, Morning No. 6, and National in the Upper South Fork
- Rex mill site in the east fork of Nine Mile Creek (added subsequent to the ROD)

The Constitution tailings piles, the Rex mine and mill site, the Golconda site, and the Sisters waste rock dump were identified in 2003 as initial priorities. These four sites were incorporated into the BEIPC five-year work plan. Construction at the Sisters site was completed in 2005. Work at the Constitution site includes consolidation of the mine tailings from the upper and lower mine sites into a single repository at the Upper Constitution Mine. Construction will begin spring 2006 focusing on the mine and mill tailings areas. Construction in 2006 will focus on the remediation of the waste rock areas, the mine adits, and stream rehabilitation and bank restoration work. The Constitution site will be completed by either fall 2006 or summer 2007.

Phase 1 work at the Golconda site including an interim action to address the adit flow will begin spring 2006. Further work in Phase 2 will be completed in 2006/2007 including design and planned construction including stabilizing the waste rock pile and contouring the mill site. Design work for the Rex site is ongoing and is expected to be completed in 2006 with construction planned to start summer 2006.

Looking ahead to the later years of the five-year plan, the Mine & Mill Site PFT will continue to evaluate the other sites identified in the OU-3 ROD that have a potential for human health exposure from recreational use. Using the factors listed above, the PFT will prioritize sites for initiation of remedial designs including the collection of pre-design field data. Initiation of designs and remedial actions will be contingent on available funding. Further prioritization of mine and mill sites and removal sites will begin in 2006 with the development of an inventory that would list sites, identify existing data and any data gaps, identify responsible entities and property owners etc. This tool would help prioritize sites for further investigation and cleanup work as funds become available.

### **1.3.5 Blood Lead Screening in Children**

The State of Idaho has historically been the lead on child blood lead screening in the Box and the Basin. The State has contracted with the Panhandle Health District (PHD) to implement the screening. In the past, the Idaho Department of Health and Welfare, Division of Health (IDOH), through funding from the federal Agency for Toxic Substances and Disease Registry (ATSDR), contracted with the PHD. In recent years, the Idaho Department of Environmental Quality (IDEQ) has contracted and funded, through state funds, the work with the requirement that the PHD provide the work plan and report results to the IDOH. IDEQ took on this role after ATSDR stopped funding the screening.

The National Academy of Sciences (NAS) recommended that “blood lead screening of all children aged 1-4 years living in the basin be initiated in conjunction with local health care providers. Results should be used to evaluate the efficacy of the environmental interventions.”

In line with the this recommendation, and as part of its ongoing review of human health related issues, the Human Health PFT will explore alternative approaches to integrating universally available blood lead testing into the regular health care services received by Basin children aged 1-4 years with a part of the work being to identify an education outreach program. Such exploration will include examining alternative methods for implementing an integrated blood lead testing approach as reflected in those present in other states elsewhere in the nation. The goal will be to craft a two-year pilot program for the delivery of blood lead testing via this new approach. This goal may be modified as the Human Health PFT works on this issue. In addition, the BEIPC will request that community and elected officials encourage participation in a universally available screening for children. No effort to mandate blood lead screening of children will be undertaken.

In the meantime, EPA, IDEQ, IDOH, and PHD will continue to offer a universally available blood lead screening program in 2006. That program offers universal screening to children 0 to 6 years in age in the sense that screening is offered to all children for free and in the case of the Basin the program offers a \$20 incentive. Idaho Department of Health and Welfare, Division of Medicaid will work with participating physicians in the Basin to comply with requirements to perform blood lead screening during “well child checkups”. In addition, the TLG will also develop an approach to encourage and facilitate the provision of blood lead testing to children covered under Idaho’s Medicaid program. This issue will be discussed as part of the exploration of alternative approaches to integrating universally available blood lead testing into existing pediatric health services.

The TLG also will review the Basin (Operable Unit 3) blood lead exposure report identified in the EPA's October 2005 Five Year Review. This report will provide information to help scientifically evaluate the efficacy of remedial actions undertaken in the Basin.

#### **1.4 ENVIRONMENTAL REMEDIATION ISSUES**

Environmental remediation issues under consideration by the BEIPC include involvement in the OU-2 Phase 2 remedy implementation as well as environmental remediation work in the Upper and Lower Basin described in the ROD for OU-3.

##### **1.4.1 Upper Basin Ecological Remedies**

This work includes remediation identified for Ninemile Creek, Pine Creek, Canyon Creek and the South Fork. Remediation in these areas is tied to benchmarks established in the ROD that are directed toward improvements in water quality and in the fishery.

Priorities proposed in this plan for improvement in water quality and fisheries habitat are water treatment in Canyon Creek, and remediation of mine wastes along Pine Creek. Treatment in Canyon Creek was selected as the priority action because it is expected to provide the greatest reduction of dissolved zinc and cadmium in the South Fork of the Coeur d’Alene River upstream of the Box. Remedial actions in Pine Creek were selected as the priority because this drainage provides the best opportunity for meeting fisheries benchmarks specified by the ROD in the near term.

Water Treatment - Treatment of water in Canyon Creek is proposed as the remedial action priority for reduction of dissolved metals in the South Fork above the Box. To reduce zinc loads to the South Fork Coeur d’Alene River, the OU-3 ROD calls for treatment of Canyon Creek surface water near the mouth of the creek. A great deal of the metals loading in the surface water comes from contaminated ground water in the watershed. Water treatment technology assessments and pilot tests are underway for surface and ground water focusing on developing the most cost-effective long-term solution to improving water quality from Canyon Creek that will meet the goals of the

### OU-3 ROD.

Based upon preliminary studies and current information the approach to treatment of Canyon Creek water continues to evolve. It is possible that several technologies, either active or passive, could be used in series or parallel to treat either Canyon Creek surface or groundwater. The treatability studies and monitoring are essential to the selection, design, and construction of any eventual water treatment system for Canyon Creek. See Part 2, CWA grant project, Canyon Creek Treatability Study.

The Phase II work is underway and is expected to build on the results of Phase I, with the design and implementation of a pilot-scale testing program for the “most favorable” technologies that could meet the Canyon Creek water treatment goals of the selected remedy. During 2006 the Phase II treatability study will be completed. Based upon the findings of this testing and community involvement, a remedial design for the most favorable technology and approach will begin in 2006. Construction of a treatment system will be contingent on funding and a State Superfund Contract for this work.

Fishery Habitat Improvements - Pine Creek is a priority area for improvement of fish habitat. Implementation of the remedy selected in the ROD is expected to significantly improve 3.5 miles of habitat. These improvements are expected to allow natural increases in salmonid populations and enhance spawning and rearing. EPA and BLM are the lead agencies for remedial actions in Pine Creek. BLM has already done a significant amount of stream and mine site stabilization on public and private lands in Pine Creek. BLM is developing a master stream stabilization plan. Cleanup in Denver Creek and the Upper and Lower Constitution tailings piles are a first priority. The potential exists for BLM to contribute funds to projects in the Pine Creek watershed if performed as joint-funded efforts along with BEIPC directed projects.

In addition to technology evaluation for water treatment in Canyon Creek and remedial designs for mine and mill sites, many remedial actions identified in the ROD will require additional information and analysis to support design and remediation. Development of necessary information and understanding in the near term will allow efficient implementation of remedial actions in future years.

Recommended work to be completed in 2006 in support future remedial actions:

- Develop a plan and monitor effectiveness of the remediation done at Interstate and Success in Nine Mile Creek.
- Evaluate ongoing water treatment projects including the Success passive apatite barrier; the BLM water treatment pilot plants; the MSE work at Nevada Stewart; and the wetland cells treatment of water from the Gem portal with incorporation of the findings into treatment technology assessments and design.
- Monitor performance of the growth media plots constructed in 2003 at the Silver Dollar Mine.

### **1.4.2 Lower Basin Ecological Remedies**

In the 2004 work plan, it was noted that a better understanding of the complex and dynamic system in the Lower Basin and sound answers to these questions were necessary before a sequence of remedial actions could be recommended. The ecological work described in the ROD for the Lower Basin includes actions for the wetlands and lateral lakes, the river banks, splay areas and river bed. The objectives of remediation in the Lower Basin focus on improving wildlife habitat and reducing particulate lead in the Coeur d'Alene River.

As indicated in the 2005–2009 Work Plan, EPA will be developing a cleanup level for riparian soils. The U.S. Fish and Wildlife Service (USFWS) completed data collection through an interagency funding agreement with EPA. During 2006, the EPA, USFWS and EPA's contractor will be developing a risk-based soil cleanup level that is protective of riparian ground-feeding songbirds.

Many other issues and uncertainties pertaining to the implementation of remedial actions in the Lower Basin have been raised. Some lack of data continues to exist pertaining to the complex ecology of the Lower Basin and the combined effects of mining related contamination. Clean Water Act sub-grants were approved by the BEIPC to provide site-specific information required to make sound ecological remedial management decisions. In 2006, a major focus will be to complete these studies and demonstration projects and monitor the effectiveness of already completed CWA sub grant projects.

However, despite the large extent of mining-related contamination, resulting negative ecological effects previously documented, and work described in the ROD, no additional remedial action Superfund money is currently designated for Lower Basin ecological remedies. EPA Region 10 is receiving funding for human health remedies in OU-3 but not for Lower Basin ecological remedies. In order to fully implement the interim ROD, funding from the EPA Superfund program and other sources will be needed. The BEIPC will support EPA Region 10 in an effort to secure Superfund funding from EPA Headquarters and will have the Funding PFT working on outside source funding for ecological remedies.

### **1.5 BASIN ENVIRONMENTAL MONITORING**

Basin Environmental Monitoring Plan (BEMP) - Implementation of the long-term status and trends basin environmental monitoring program (BEMP) will be continued in 2006 with EPA funding. Establishment of a basin-wide environmental monitoring plan is required under the OU-3 ROD. The monitoring program is critical to the successful implementation and evaluation of the Selected Remedy. EPA worked with the Monitoring PFT to develop the Basin-wide environmental monitoring program. The Monitoring PFT, TLG and key stakeholder agencies concurred that the BEMP is appropriate given available funding to obtain technical data for assessment of long-term status and trends, evaluation of overall effectiveness of the Selected Remedy, evaluation of progress toward cleanup benchmarks, and future Five-Year reviews. EPA will



continue to make analytical results from site surface water, soil and sediment sampling available on the web-accessible data management system ([www.storet.org](http://www.storet.org)); human health-related data will not be included in this database. EPA will assist interested stake holders in accessing the information.

Remedial Action Effectiveness Monitoring - Action-specific effectiveness monitoring will focus on areas that have been addressed by remedial actions (e.g., tributaries, river reaches, etc.). The purpose of the effectiveness monitoring is to assess the success and effect of a given remedial action. By comparison, the BEMP will address basin-wide status and trends by monitoring a limited number of strategic locations. Both the remedial action-effectiveness and long-term monitoring plans will be integrated by coordinating monitoring to generate comparable data (same timeframe or synoptic) and using common sampling locations, where possible. Effectiveness monitoring, while not detailed in the BEMP, will incorporate similar monitoring hypotheses as those included in the BEMP. The adaptive management approach will maximize the utility of effectiveness monitoring data through comparison of results to expectations.

Remedial action effectiveness monitoring in OU-3 will be included in the designs and implementation plans for ecological-related remedial actions. In 2006, remedial action effectiveness monitoring will continue to be implemented at the human health-related remedial actions recently implemented at the East of Rose Lake Boat Launch and Highway 3/Trail of the Coeur d'Alenes Crossing site.

## **1.6 PHASE II COMPONENT OF OVERALL OU-2 REMEDY**

As part of the State Superfund Contract (SSC) for OU-2, a Comprehensive Cleanup Plan (CCP) was developed to define a path forward for remedy implementation in OU-2. The CCP calls for a phased approach to implementing the OU-2 remedy. In Phase I, the focus is on remedial actions aimed at removing and consolidating extensive contamination from various site areas, demolition of structures, development and implementation of an ICP for OU-1 and OU-2, future land use development, and public health response actions. Phase I work also includes support studies for long-term water quality improvement and evaluation of Phase I remedial action effectiveness.

Phase II of the OU2 remedy will be implemented following completion of source control, removal activities and evaluation of the effectiveness of these activities in meeting water quality improvement objectives. Phase II will consider any shortcomings encountered in implementing Phase I and will specifically address long-term water quality, ecological and environmental management issues. Both ROD and SSC amendments will be required prior to implementation of any Phase II remedial actions. EPA and IDEQ are the responsible parties for modifying the ROD and negotiating a State Superfund Contract.

Per the motion passed by the BEIPC in August 2005, the Commission will participate in future Phase II activities in OU-2 by providing technical input into the remedy alternative development and selection (including evaluation of technical reports, pilot studies, and

feasibility study documents), providing input into the public processes associated with ROD modifications and educating the community and legislative bodies of the need for funding for this work.

The following provides a brief overview of EPA and IDEQ's concept for how the agencies will jointly move forward in conjunction with the BEIPC to set the stage for evaluation and potential implementation of an OU-2 Phase II remedy.

### Phase I Evaluation

The OU-2 Phase I evaluation is currently underway by EPA and IDEQ. The following documents are being developed to provide a road map to refine understanding of the OU-2 environmental system and facilitate Phase II remedy implementation.

#### **Revised OU-2 Conceptual Site Model (CSM)**

The CSM will present the current understanding and status of contamination within the OU-2 environmental system. Within this document, data gaps and uncertainties associated with the environmental system will be presented. This is a living document and will be updated as required to refine the understanding of the OU-2 environmental system and to provide a basis for future actions.

#### **Statistical Trend Analysis of Groundwater and Surface Water**

A statistical analysis of water quality monitoring data generated as a result of OU-2 water quality monitoring is being performed to analyze contaminant data for trends on a location specific and, to the extent possible, on an OU-2-wide spatial basis. Included in this analysis will be an evaluation of correlations between contaminants and parameters measured within OU-2.

#### **Phase I Remedial Action Characterization**

This characterization of Phase I remedial actions will include identification of the extent of these cleanup activities and their impact on contaminant nature and extent and potential release mechanisms associated with these sources. This document will refine the understanding of remedial actions performed as part of Phase I cleanup activities within OU-2.

#### **Revised OU-2 Environmental Monitoring Plan**

This revised status and trends monitoring plan for groundwater, surface water, and ecological receptors within OU-2 will provide data to evaluate the performance of the overall OU-2. Remedial action effectiveness monitoring plans are also being developed for the larger Phase I remedial actions. The revised OU-2 monitoring plan will coordinate with the OU-3 Basin Environmental Monitoring Program.

The above documents will be available for consideration in winter 2006. It is anticipated that there may be a Technical Leadership Group or Basin Information Forum presentation early in 2006 to explain the findings of the above reports and provide an opportunity for discussion. An overview presentation could also be provided at a BEIPC meeting if so desired.

## OU-2 Phase II Remedy Consideration

Following the above evaluation of Phase I remedial actions in OU-2, the next step is to further set the stage for consideration of Phase II remedy alternatives and potential implementation. The following evaluations will facilitate definition of OU-2 Phase II.

### **Identification of OU-2 Source Areas of Concern**

Based on the results of the Phase I evaluation, source areas within OU-2 will be identified and ranked based upon a set of criteria to be established. The criteria will include a relative contaminant metal loading, impacts on environmental receptors and other factors to be determined. Data gaps that need to be filled to confirm and quantify source areas and their resultant impact on the environmental system may be identified and addressed.

### **Identification and Evaluation of Potential OU-2 Phase II Remedial Actions**

Based on the results of the identification and relative ranking of source areas identified within OU-2, conceptual remedial actions (RAs) will be developed to address the sources and evaluated based on implementability, effectiveness and cost of supplemental remedial actions.

## **1.7 CONSIDERATION OF EPA'S 5-YEAR REVIEW**

EPA's 5-Year Review of the Bunker Hill Superfund Site was completed in October 2005. In 2006, the BEIPC will consider the content of the review report and determine an appropriate course of action in its work planning process.

## **1.8 REVIEW OF NATIONAL ACADEMY OF SCIENCES STUDY**

The prepublication report of the National Academy of Sciences (NAS) study of EPA's assessment and cleanup decisions in the Coeur d'Alene Basin was released in July 2005 and the final report is scheduled to be published in December 2005. The BEIPC will review the report concerning Coeur d'Alene Basin recommendations and determine an appropriate course of action for the BEIPC. This work has already begun based on the prepublication report and a number of items are reflected in this work plan.

## **1.9 LAKE MANAGEMENT PLAN ACTIVITIES**

Pursuant to a "Coeur d'Alene Lake Management Plan Development Agreement Between The Coeur d'Alene Tribe and the State of Idaho" dated August 5, 2005 and the subsequent "Request for Expressions of Interest, Qualifications and Cost Quotations" (REIQ), the CDA Tribe and IDEQ intend to complete revision of the 1996 Lake Management Plan (LMP) that was accepted by the BEIPC for use in the CDA Basin. This work includes stakeholder involvement as contemplated by the REIQ which is consistent with the Memorandum of Agreement For Evaluation And Recommendations Regarding the Coeur d'Alene Lake Management Plan between the CDA Tribe and IDEQ dated January 22, 2002 and the

Memorandum of Agreement For Evaluation And Recommendations Regarding the Coeur d'Alene Lake Management Plan between the IDEQ and Kootenai, Benewah and Shoshone Counties dated January 13, 2002. It is anticipated that the State and Tribe will develop a list of projects and activities to implement the LMP, including cost estimates for these items, and coordinate their activities with the BEIPC. Once the LMP is approved and implemented by the Tribe and State in coordination and consultation with appropriate stakeholders, the BEIPC will request that the EPA develop criteria for deletion of the CDA Lake portion of the Superfund Site.

### **1.10 PARTIAL DELETION OF AREAS WITHIN THE SUPERFUND SITE**

In accordance with the National Contingency Plan, 40 CFR 300.425(e), the BEIPC will request that EPA develop criteria for deleting geographic portions of the listed Superfund Site where no further response is appropriate or areas where all response work is completed.

### **1.11 FUNDING SOURCE EVALUATION**

The BEIPC formed a Funding PFT in September 2005 to examine potential environmental cleanup and restoration funding sources and present an assessment of funding availability. This assessment will include a discussion on constraints for the use of various funding sources. This work should be completed by December 2006.

## **Part 2 – Activities and Work Funded Through the Clean Water Act Grant Program**

### **2.0 INTRODUCTION**

CWA funds are being used “*to conduct and promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction and elimination of pollution*” Clean Water Act 104(b)(3). Within these constraints, the BEIPC has, over the last three years, approved a number of projects to be funded under the CWA. A portion of these projects are designed to support CDA Lake management activities.

The first round of CWA funds were available in Fiscal Year (FY) 2002 and obtained by the BEIPC in the summer of 2003. These projects are nearing completion. The next round of funding for FY2003 was available to the BEIPC during the summer of 2004. These projects are at various stages of implementation and some are nearing completion. Finally, the most recent round of funding for FY2004 was available in July 2005 and these projects are at various stages of implementation.

This section of the work plan outlines CY 2006 activities of all ongoing projects. As these projects reach completion, the BEIPC will receive reports detailing the results of each one. Over the next five years, information taken from these reports will be used to develop future work plans.

Table 2-1 is a summary of activities scheduled for CY 2006 funded with CWA funds. More detailed descriptions follow the summary table.

**Table 2-1 Summary of Activities Funded by CWA**

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Lake Monitoring Water Quality Studies	Conduct monitoring of lake water quality to assess nutrient, sediment, and metal loading and trends in lake water quality; to assess improvements/impacts from upstream environmental improvements projects; and assess impacts from further development projects along the lakeshore.	Collect samples at five pelagic stations and 18 near-shore samples at intervals through October 2006. Publish 2005 water year data. Compile and evaluate data and publish evaluation of limnological data and riverine inflow/outflow data and physical, chemical, and biological interactions.	CDA Tribe, USGS
Ecological Monitoring of Coeur d'Alene Lake	Identify baseline conditions for ecological receptors in CDA Lake in order to determine future changes in the ecological condition of the lake. This information may be used in the future to determine if actions implemented under the OU-3 ROD and management actions implemented under the Lake Management Plan are effective.	Perform statistical analysis of lab results. Prepare report evaluating a metal bioavailability baseline for fish, health of fish receptors, and risk of exposure of piscivores to lead, cadmium and zinc.	USFWS
Stream Bank Stabilization	Construct and monitor the effectiveness of several techniques to protect the Coeur d'Alene River banks from boat wake erosive forces.	Continue monitoring cross-sections, bathymetry, erosion pins, and photo points.	IDEQ
Lake Education and Outreach Program	Develop and implement a public information and education plan. The objective of such a plan is to provide the public with information to help them better understand the ecology of the Lake and ways they can better protect the Lake while they enjoy it.	Make educational map available through various vendors. Revise map if deemed necessary. Print remaining copies of map. Continue to present power point program in schools.	CDA Tribe, KSSWCD

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Mullan Inflow and Infiltration Groundwater Metal Loading Study/Demonstration Project	Evaluate sources of metals loadings to wastewater treatment facilities, investigate the potential reduction of metals loadings to the South Fork Coeur d’Alene River, determined the efficacy of wastewater collection system infiltration and inflow (I/I) reduction projects to reduce peak plant flows, and advance the current state of knowledge with regard to the cause and effect of such efforts to reduce pollution while considering transaction costs and community coordination.	Sample and analyze influent and effluent wastewater at the treatment plant for metals levels. Analyze metals loading trends and influent flows to the plant and verify impacts from the construction portion of the project. Update the final report as warranted and present to the BEIPC.	South Fork Sewer District
Woodland Park Groundwater Quality Monitoring	Monitor water quality in this shallow alluvial groundwater system in Woodland Park area of Canyon Creek. Gain a better understanding of the metal concentrations and potential loading from groundwater to the Canyon Creek surface water system.	The work is complete and the final report will be presented to the BEIPC.	IDEQ
Meyer Creek Flood Control	Assess the condition of the Meyer Creek diversion system and propose possible alternative remedial recommendations and order of magnitude cost estimates to prevent recontamination of the Superfund remedy in the City of Osburn during a flood event.	All work complete.	IDEQ

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Upper East Fork Nine Mile Creek Water Quality Evaluation	Success Mine Passive Water Treatment – 1) Reduce plugging in the Success Mine Apatite Barrier by making design modifications to the sediment chamber and injecting air into the Apatite to break up clogging in the media; 2) Perform a tracer study to determine hydraulic flow paths and residence times; 3) Analyze Apatite to determine forms of metal precipitates and where the reactions occur; and 4) Evaluate nutrient addition in the groundwater to determine if in situ metal precipitation is a viable option. East Fork Ninemile Creek Monitoring – Conduct monitoring of the East Fork of Ninemile Creek to assess where metal loadings occur, how seasonal flows affect metal loadings, evaluate overall water chemistry, and determine forms of metal precipitates.	It is anticipated that the work of placing new media into the Pilot Scale Success Mine Reactive Barrier will be completed in 2005. With that in mind, monitoring the discharge from the barrier will continue through the summer of 2006.	INL
Metals and Nutrient Removal Pilot at Page Plant	Evaluate two emerging technologies for precipitation and/or adsorption for removal of heavy metals (lead, cadmium, zinc, and copper) and phosphorus from point source discharges in the Silver Valley, especially the Page wastewater treatment plant.	No further pilot testing is planned for this project. The summary report will be completed in 2006 and presented to the BEIPC.	South Fork Sewer District



<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
East Fork Pine Creek Revegetation Pilot Project	Identify practical and cost-effective methods to accelerate natural revegetation processes. Vegetation is needed to ultimately stabilize many stream reaches within the Basin. Identify and contrast the relative “bang for the buck” of several locally applicable revegetation methods.	Spring planting will take place in late April–early May, 2006. Field measurements for site characterization, including stream flow measurements, floodplain particle size distribution and surveyed channel cross-sections continue throughout the summer of 2006. Additional planting will resume in the fall of 2006. Monitoring of plant growth and survival rates will continue throughout the growing season. Any changes to planting site conditions, including average depth to seasonal low water table, effects of floods or channel shifting will also be monitored	BLM
Inventory and Evaluation of Private Lands for Potential Restoration of Wetland Habitats	Provide a comprehensive inventory that identifies private land that may be suitable for wetland remediation and restoration projects in the Basin. This inventory would be useful for identifying agricultural and wetland habitats that could be remediated or restored as part of the ROD. Landowners will be surveyed to determine interest in wetland creation or enhancement on their respective properties. Properties identified as potential remediation/restoration projects will be assessed for their habitat quality.	Landownership, potential project location and toxicological surveys will continue through 2009 based on need and project status.	USFWS

Proposed Activity	Scope	CY 2006 Objective	Lead Agency
Monitoring Fish Responses to Bank Stabilization in the Coeur d'Alene River	Assess the short- and long-term affects of bank stabilization treatments on fish community structure in the lower Coeur d'Alene River. Provide recommendations for bank stabilization project designs with the least adverse impacts and most positive benefits to overall fish community structure. Provide recommendations on what project-specific monitoring that would be required for individual bank stabilization projects.	Sampling will continue in the spring and summer of 2006 and spring of 2007 at the same sites as in 2005.	USFWS, U of I
Sediment Transport Model	Develop a set of tools that can be used by resource managers for evaluating proposed projects designed to minimize the transport of metal contaminated sediments in the Lower CDA River. Objectives include the utilization of existing data and collection of additional data to develop and calibrate computer models of the river between Cataldo and CDA Lake. These models would be capable of simulating the hydraulic and sediment transport characteristics of the river over a wide range of streamflow and lake elevation conditions. The models would be used to test proposed projects prior to implementation with the goal of improving their design and avoiding unanticipated and costly mistakes.	A one-dimensional (1D) sediment model will be calibrated. Various flow and sediment transport scenarios will be run for the final report. Data necessary for multi-dimensional bed-shear stress model will be collected. A multi-dimensional (multi-D) model will be developed of a single 1500 m reach near Dudley. Multi-D model will be calibrated and various flow and lake level scenarios will be run for final the report. Model development, calibration, and results of both 1D and multi-D models will be summarized in a final report to be published in 2006.	USGS

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
<p>Lake Response Simulation Model</p>	<p>Provide the entities responsible for management of Coeur d'Alene Lake with a sophisticated computer modeling system with which to simulate the lake's long-term responses to a wide range of remediation strategies to be implemented under the ROD and the Lake Management Plan.</p>	<p>Continue to assemble and/or update data bases which relate to lake bathymetry, inflow/outflow hydrology, inflow/outflow constituent loads and concentrations, meteorological forces, and limnological variables throughout water column. Continue and complete bioassay experiments to define zinc toxicity equations for lake phytoplankton. Continue and complete development of benthic flux equations for metals and nutrients. Complete development of 3-D hydrodynamic model, ELCOM, early in 2006. Link CAEDYM (aquatic ecology model) to ELCOM in early 2006. Using calibration data sets derived from limnological sampling program, test linked ELCOM-CAEDYM's ability to simulate interaction of physical, chemical, and biological processes. Incorporate new computer code to assess sensitivity of models to augmented modules related to phytoplankton toxicity and benthic flux. Use linked ELCOM-CAEDYM to assess transient conditions such as snowmelt runoff, convective circulation, and late summer stratification. Using those results, program linked DYRESM-CAEDYM to simulate long-term limnological conditions. Project completed at end of 2006.</p>	<p>USGS</p>

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
<p>North Fork Coeur d'Alene River Hydrologic and Sediment Study</p>	<p>Characterize and determine the existing hydrologic and in-stream conditions within the North Fork Coeur d'Alene River sub-basin stream system, and attempt to determine the impact of past and current management actions on the observed stream function and ecological conditions. In turn, the above scientific assessment would lead to specific identification of restoration projects, BMPs, and land use policy changes aimed to restore proper hydrologic functions and the impaired cold water aquatic life beneficial use (i.e., salmonid populations).</p>	<p>Conduct in-office work to perform an initial watershed assessment of existing conditions, and possible causes of the observed biological impairment in sub-basin streams. This analysis will identify priority areas for field examination of significant sediment sources, and channel stability condition as it relates to possible hydrological modification from a long history of land use activities. Prepare final document, Summary of Known Existing Information and Improvement Projects. Conduct on-the-ground surveys and inventories of sediment sources which could be the focus and target of a TMDL Implementation Plan, and conduct in-channel surveys for evidence of impairment by hydrologic modification. Complete watershed assessment using survey information collected during the 2006 field season. Produce a final report.</p>	<p>IDEQ</p>

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Mica Bay Nutrient Reduction Project	Demonstrate for training and education purposes a means of reducing nutrient and sediment contamination to Coeur d'Alene Lake in accordance with the implementation of the Lake Management Plan. Project will also accomplish some TMDL implementation goals for the recovery of beneficial uses in Mica Creek.	If the preliminary plan is approved by landowners and the BEIPC, a final design would be completed. Permit applications will be submitted to the regulatory agencies. Easement language would be finalized by fall of 2006. Depending on progress with landowners and permitting, construction work could commence in the fall of 2006 at the earliest.	IDEQ
Lower Lakes Aquatic Vegetation Survey	Develop baseline data on submersed aquatic plant species distribution and biomass in Benewah, Chatcolet and Round Lakes. Estimate nutrient (primarily phosphorus) release from the existing plant beds into the water column of these lakes and, subsequently into Coeur d'Alene Lake. Inspect these lakes for the presence of invasive, noxious aquatic species.	Prepare project completion report and present it to BEIPC.	CDA Tribe
Canyon Creek Groundwater Metal Source Characterization	Determine how, in practical terms, zinc and other metals are distributed between different physical and chemical states in the Canyon Creek alluvium. This information will be used to help understand how natural processes can affect the movement of contaminant metals through Canyon Creek and how engineered processes can impact contaminant metal mobility or sequestration.	Complete studies and prepare final report and present it to the BEIPC.	INL

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Plummer Wastewater Treatment Plant Pilot	Construct a pilot scale demonstration of a cascading wetland treatment for use in the City of Plummer waste water treatment plant upgrade.	Construction began in 2005 and will be completed in early 2006. Monitoring and testing will be completed on a monthly basis from September, 2005 through September, 2006. Prepare final report.	City of Plummer
Plummer Creek Watershed Nutrient Load Assessment, Modeling, and Management Plan Development	Characterize nutrient concentrations and transport through the Plummer Creek watershed and into Chatcolet Lake. Develop a Watershed Nutrient Management Plan which will include appropriate and specific point nutrient source control efforts for the Plummer Creek watershed.	Field water quality and constituent concentration data will be collected at key points, including potential pollutant sources in the Plummer Creek watershed.	CDA Tribe
Pinehurst Flood Impact Study	Develop stream channel and drainage infrastructure techniques to control and mitigate water pollution and protect property from recontamination and flood impacts.	Prepare design report for Little Pine Creek Pilot Project. After report approval from the TLG, Little Pine Creek improvements will be designed and presented in a bid package. Discussion of Division Street improvements will occur with the TLG and City of Pinehurst. A design package will be prepared that includes stream improvements and Division Street storm drainage improvements. A construction project will be implemented in 2006.	IDEQ

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Silver Crescent Mine and Mill Complex Habitat Restoration	Study the feasibility and economics of watershed restoration in areas where the original stream type has been severely altered by mining and environmental cleanup activities.	Construction contract award late in 2005 or early 2006 with implementation start planned for 2006. Stream channel construction with wildlife and fish habitat structure installation will encompass the bulk of the construction phase at the site in 2006.	USDA-Forest Service
Canyon Creek Treatability Study	Develop an alkaline precipitation design as a low cost method of achieving a substantial improvement toward ROD goals, and determine if the proposed water treatment technology is implementable in the So. Fork CDA River.	Develop a conceptual design for construction of an alkaline precipitation treatment pilot plant study. The conceptual design will include a literature search into the technology; an evaluation of implementation and effectiveness issues associated with this technology; and a design for a pilot scale test facility and program.	IDEQ
South Fork Sewer District Toxicity Reduction	Identify sources of toxicity in Basin community wastewater treatment plant effluent to develop options for removal of toxicants; perform bench testing to verify removals; and develop capital and O&M cost projections.	Baseline toxicity testing (whole effluent toxicity) – January 2006, June 2006, and October 2006. Review of potential sources of toxicity at the Page WWTP – April/May 2006. Step-wise toxicity identification evaluation (TIE) – June through August, 2006. Toxicity control evaluation (TCE) – November 2006 through May 2007.	South Fork Sewer District

<b>Proposed Activity</b>	<b>Scope</b>	<b>CY 2006 Objective</b>	<b>Lead Agency</b>
Assessment of the Economics and Effectiveness of Alluvium Sorting as Mine Waste Removal Strategy at the Project Implementation Level	Establish, at a removal project level, the costs of a simple screening of removed contaminated alluvium, and assess the beneficial value of the removal strategy by assessing the change in the metals content of the three-quarter inch minus fraction of the bed load sediment downstream.	Prichard Creek will be monitored to establish if bank full discharge occurs either during a winter storm event or spring runoff. Bank full discharge is sufficient to mobilize the stream bed, displacing sediments accumulated. If at least one bank full discharge occurs, stream bed load sediment will be re-sampled for its metals content for comparison to pre-tailings removals content. The project has allotted four seasons (2006-2009) to attain at least two bank full discharge events and assess the effectiveness of the project in removal of contaminated sediments from Prichard Creek.	IDEQ
Coeur d'Alene Lake Management Plan Implementation	Conduct an extensive evaluation of all activities within one mile of the Lake shore to evaluate what BMPs are in place, how effective they are, what BMPs are required but not in place, and to establish specific BMP audit procedures.	Conduct and complete a survey and effectiveness audit. Estimate programmatic costs for nutrient management activities.	IDEQ, CDA Tribe



### **Lake Monitoring Water Quality Studies**

**Sub-grant amount:** \$515,000 FY 2002 plus \$13,000 additional FY 2004 to sample southern lake nearshore stations.

**Sub-grantee:** CDA Tribe, USGS

**Description of work to be performed in 2006:** Collect limnological samples at 5 pelagic stations during late January, early April, mid-May, mid-June, mid-July, and late August; such sampling then terminated. Publish 2005 water year data in April 2006; and publish 2006 water year data in April 2007. During 2005-2006, compile and evaluate limnological data and riverine inflow/outflow data in order to describe interaction of physical, chemical, and biological conditions in Coeur d'Alene Lake over water years 2004-2005. Publish that evaluation late in 2006 as a USGS Scientific Investigations Report. Project terminates at close of 2006.

### **Ecological Monitoring of CDA Lake**

**Sub-grant amount:** \$160,000

**Sub-grantee:** USFWS

USFWS submitted the final report "Health of Waterfowl Utilizing Lake Coeur d'Alene, Idaho" to the BEIPC in May 2005. The report was the final deliverable under this sub-grant for the evaluation of waterfowl exposure to metals of concern for waterfowl utilizing Coeur d'Alene Lake.

Bullheads were collected from Coeur d'Alene Lake in May, 2005 as representatives of fish receptors in the lake. Whole fish were submitted to the University of Wyoming in July 2005 for processing and analysis of cadmium, lead and zinc.

**Description of work to be performed in 2006:** Statistical analysis of lab results and a report evaluating a metal bioavailability baseline for fish, health of fish receptors, and risk of exposure of piscivores to lead, cadmium and zinc will be completed following the receipt and quality assurance checks of results.

The collection and analysis of bullheads as representatives of lake fish receptors, in conjunction with information gained from the waterfowl health evaluation portion of the study, will help to provide baseline conditions for ecological receptors of concern in Coeur d'Alene Lake.

### **Streambank Stabilization**

**Sub-grant amount:** \$445,000 FY 2002, \$122,386 FY 2003, \$15,540 from BLM

**Sub-grantee:** IDEQ

**Description of Work to be performed in 2006:** All construction work is complete. The site was surveyed prior to construction and was monitored in 2005 and will be monitored in 2006, and 2007 to document changes. Monitoring activities will include measuring cross-sections, bathymetry, and erosion pins and photo documentation.

**Lake Education and Outreach Program**

**Sub-grant amount:** \$80,000

**Sub-grantee:** CDA Tribe, Kootenai-Shoshone Soil and Water Conservation District (KSSWCD).

**Description of work to be performed in 2006:**

The KSSWCD and the Tribe will have “Our Gem” as a running presentation used in their natural resource programs.

In addition, the CDA Tribe and KSSWCD will distribute the Coeur d’Alene Lake education outreach map to local area vendors in fall 2005 and will distribute the remainder to other parties in 2006.

Finally, the Tribe and the KSSWCD will write a brief summary of their perception of the effectiveness of this public education outreach and develop a funding proposal for future lake education public outreach. If funded, more outreach will occur and will be further defined in future plans. All work to be completed by the end of 2006.

**Mullan Inflow and Infiltration Assessment**

**Sub-grant amount:** \$800,000.00

**Sub-grantee:** South Fork of the Coeur d’Alene River Sewer District

**Description of work to be performed in 2006:**

No further construction is planned for this project. The remainder of the budget has been reserved for the following activities:

- Sample and analyze influent and effluent wastewater at the treatment plant for metals levels.
- Analyze metals loading trends to the wastewater treatment plant and verify impacts from the construction portion of the project.
- Analyze influent flow trends to the wastewater treatment plant and verify impacts from the construction portion of the project.
- Update the final report as warranted and present to the BEIPC.

**Woodland Park Groundwater Quality Monitoring**

**Sub-grant amount:** \$35,948

**Sub-grantee:** IDEQ

**Description of work to be performed in 2006:** The work is complete and the final report will be presented to the BEIPC.

**Meyer Creek Flood Control**

**Sub-grant amount:** \$31,521

**Sub-grantee:** IDEQ

**Description of work to be performed in 2006:** A Findings and Recommendations report was presented to the BEIPC in August 2005. All work complete.

**Upper East Fk. Ninemile Water Quality Evaluation**

**Sub-grant amount:** \$193,652

**Sub-grantee:** INL

**Description of work to be performed in 2006:**

**Success Passive Water Treatment**

It is anticipated that the work of placing new media into the Pilot Scale Success Mine Reactive Barrier will be completed in 2005. With that in mind, monitoring the discharge from the barrier will continue through the summer of 2006.

**East Fork Ninemile Creek Monitoring**

This project consists of sampling of physical, chemical and biological characteristics over about a 3-4 mile stretch of the East Fork of Ninemile Creek to determine seasonal changes in metal loading, where the loadings occur at, and the forms the metals are in will be determined. The majority of this monitoring effort will have been completed in 2005, but some select locations will be identified for monitoring suspended solids and sediments during the spring runoff of 2006.

A final report will be completed by the end of 2006 and submitted to the BEIPC.

**Metal & Nutrient Removal Pilot @ Page WWTP**

**Sub-grant amount:** \$179,763

**Sub-grantee:** South Fork of the Coeur d'Alene River Sewer District

**Description of work to be performed in 2006:** No further pilot testing is planned for this project. The summary report will be completed in 2006 and presented to the BEIPC.

**East Fork Pine Creek Revegetation Pilot Project**

**Sub-grant amount:** \$61,624

**Sub-grantee:** BLM

**Description of work to be performed in 2006:** Spring planting will take place in late April–early May, 2006. Field measurements for site characterization, including stream flow measurements, floodplain particle size distribution and surveyed channel cross-sections continue throughout the summer of 2006. Additional planting will resume in the fall of 2006. Monitoring of plant growth and survival rates will continue throughout the growing season. Any changes to planting site conditions, including average depth to seasonal low water table, effects of floods or channel shifting will also be monitored.

**Inventory and Evaluation of Private Lands for Potential Restoration of Wetland Habitats**

**Sub-grant amount:** \$152,406

**Sub-grantee:** USFWS

The proposed survey will inventory private wetlands and associated agricultural lands to determine: (1) their value as wetland habitat, (2) what modifications necessary to restore to optimal habitat, (3) the landowner acceptance of wetland restoration on the property, and (4) the level of lead contamination on the property. Landowners will be surveyed to determine interest in wetland creation or enhancement on their respective properties. Properties identified as potential remediation/restoration projects will be assessed for their habitat quality. Consistent with the provisions of the CWA, USFWS will investigate the extent of contamination relative to the known level of toxic effects to waterfowl in the Coeur d'Alene Basin. Soil/sediment samples will be collected with stainless steel corers with plastic liners. The majority of samples will be removed from liners and analyzed for metals of concern on site with a portable X-ray fluorescence analyzer (XRF) following EPA Method 6200. It is anticipated that splits of 10%-20% of recorded XRF samples will be collected in glass jars or butyrate tubes and sent to a contract lab that meets or exceeds USFWS' QA/QC requirements for verification analysis following chain of custody procedures. Designs for restoration of existing wetlands or creation of new wetlands will be prepared for those properties that have low toxicity to waterfowl and that provide or could provide high quality wetland function.

Ducks Unlimited (DU) biologists began inventorying privately owned agricultural and wetland areas in the Coeur d'Alene Basin identified as having potential for creation or enhancement of wetland habitat in early 2005.

**Description of work to be performed in 2006:** Landownership, potential project location and toxicological surveys will continue through 2009 based on need and project status. The completed project will provide a comprehensive inventory that identifies private land that may be suitable for wetland remediation and restoration projects in the Coeur d'Alene Basin. This inventory will be useful for identifying agricultural and wetland habitats that could be remediated or restored as part of the ROD, through use of settlement dollars currently available to the federal natural resource trustees and Coeur d'Alene Tribe, or through existing federal and state grant/cost-share programs aimed at restoring and protecting wetland habitat.

**Monitoring Fish Responses to Bank Stabilization in the Coeur d'Alene River**

**Sub-grant amount:** \$107,550

**Sub-grantee:** USFWS, University of Idaho

Bank stabilization efforts will likely be proposed to treat more than 33 kilometers of the lower Coeur d'Alene River banks in coming years. Resource management agencies are being asked to evaluate the impact of a rapidly increasing number of bank stabilization project proposals for the CDA River. This monitoring effort will 1) establish baseline fish community structures, 2) evaluate variability in fish community structures over time, 3) evaluate the effects of existing bank stabilization projects on fish communities, 4) determine appropriate monitoring strategies for future bank stabilization projects, and 5) recommend bank stabilization techniques that have positive effects or minimal adverse effects on fish communities.

**Description of work to be performed in 2006:** A total of 24 sites and 3 boat ramp stabilization projects were evaluated during the summer of 2005. These sites were selected to represent areas relatively unimpacted by bank stabilization projects, areas potentially affected by implemented bank stabilization projects (riprap), and areas proposed for bank stabilization. Each site consisted of a 150m long stream bank segment. A habitat assessment was conducted using protocols similar to those used as part of the EPA's Rapid Bioassessment Protocols. All sites were then sampled using both an electrofishing boat as well as experimental gillnets in order to account for gear bias. Fisheries will be evaluated by relative abundance, length frequency, and aging with respect to sites.

Sampling will continue in the spring and summer of 2006 and spring of 2007 at the same sites. Upon completion of sampling, a final report in the form of a thesis will be completed in 2007.

Results of this monitoring effort will provide information that will address agency concerns and requirements when considering approval of required permits. Additionally, results may function to reduce individual bank stabilization project costs and permitting requirements by providing much of the initial baseline information, by defining

appropriate monitoring techniques, and by identifying inter-species interaction dynamics associated with natural and artificial habitat structures within the lower Coeur d'Alene River system.

**Computer Models to Assess Sediment Transport and Bed Evolution in the Lower Coeur d'Alene River Phase 1 and 2**

**Sub-grant amount:** Phase 1 - \$193,706 FY 2003, Phase 2 - \$128,000 FY 2004

**Sub-grantee:** USGS

**Description of work to be performed in 2006:** A one-dimensional (1D) sediment model will be calibrated. Various flow and sediment transport scenarios will be run for the final report. Data necessary for multi-dimensional bed-shear stress model will be collected. A multi-dimensional (multi-D) model will be developed of a single 1500 m reach near Dudley. Multi-D model will be calibrated and various flow and lake level scenarios will be run for final the report. Model development, calibration, and results of both 1D and multi-D models will be summarized in a final report to be published in 2006.

**Simulation Model to Evaluate Coeur d'Alene Lake's Response to Watershed Remediation-Phases 1 and 2.**

**Sub-grant amount:** Phase 1 - \$190,406 FY 2003, Phase 2 - \$221,800 FY 2004

**Sub-grantee:** USGS

**Description of work to be performed in 2006:** Continue to assemble and/or update data bases for University of Western Australia model team which relate to lake bathymetry, inflow/outflow hydrology, inflow/outflow constituent loads and concentrations, meteorological forces, and limnological variables throughout water column. Continue and complete bioassay experiments to define zinc toxicity equations for lake phytoplankton, this work being performed by USGS National Research Program (Kuwabara). Continue and complete development of benthic flux equations for metals and nutrients, this work being performed by USGS Geological Discipline (Balistrieri). Complete development of 3-D hydrodynamic model, ELCOM, early in 2006. Link CAEDYM (aquatic ecology model) to ELCOM in early 2006. Using calibration data sets derived from limnological sampling program, test linked ELCOM-CAEDYM's ability to simulate interaction of physical, chemical, and biological processes. Incorporate new computer code provided by Kuwabara and Balistrieri to assess sensitivity of models to augmented modules related to phytoplankton toxicity and benthic flux. Use linked ELCOM-CAEDYM to assess transient conditions such as snowmelt runoff, convective circulation, and late summer stratification. Using those results, program linked DYRESM-CAEDYM to simulate long-term limnological conditions. Project completed at end of 2006.

## **North Fork Coeur d'Alene River Hydrologic & Sediment Study**

**Sub-grant amount:** \$165,810

**Sub-grantee:** IDEQ

### **Description of work to be performed in 2006:**

October 2005 – April 2006

1. Watershed Professionals Network (WPN) will conduct in-office work to perform an initial watershed assessment of existing conditions, and possible causes of the observed biological impairment in sub-basin streams. This analysis will identify priority areas for field examination of significant sediment sources, and channel stability condition as it relates to possible hydrological modification from a long history of land use activities.
2. Prepare final document, *Summary of Known Existing Information and Improvement Projects*.

May - October 2006

A season of field work: conduct on-the-ground surveys and inventories of sediment sources which could be the focus and target of a TMDL Implementation Plan, and conduct in-channel surveys for evidence of impairment by hydrologic modification.

October – December 2006.

1. Complete watershed assessment using survey information collected during the 2006 field season.
2. Produce a final report, *Watershed Assessments of Selected Subwatersheds*.

## **Mica Bay Nutrient Reduction Project – Phase 1 & Phase 2**

**Sub-grant amount:** \$20,000 FY 2003, \$121,000 FY 2004

**Sub-grantee:** IDEQ

**Description of work to be performed in 2006:** TerraGraphics will have a preliminary plan to present to the BEIPC in early 2006. If the plan is approved by the landowner and the BEIPC, a final design would be completed. Permit applications will be submitted to the regulatory agencies. Easement language would be finalized by fall of 2006. Depending on progress with landowners and permitting, construction work could commence in the fall of 2006 at the earliest. It is assumed that IDEQ, as the project sponsor, will either be the conservation easement holder or will help designate such

holder. Permitting issues will be explored with USFWS and US Army Corps of Engineers.

**Lower Lakes Aquatic Vegetation Survey**

**Sub-grant amount:** \$143,275

**Sub-grantee:** CDA Tribe

**Description of work to be performed in calendar year 2006:** Prepare project completion report and present it to BEIPC. This will include a summary of materials and methods, summary of plant biomass data for each species collected with year-to-year variations, summary of grid node survey findings, calculation of release of phosphorus and nitrogen from existing population as lake-wide loadings, appropriate statistical analyses, discussion of the infestation of Eurasian watermilfoil that was found and overall conclusions.

**Canyon Creek Groundwater Metal Source Characterization**

**Sub-grant amount:** \$190,253

**Sub-grantee:** INL

**Description of work to be performed in 2006:** Prepare final report and present it to the BEIPC.

**Plummer Wastewater Treatment Pilot**

**Sub-grant amount:** \$129,900

**Sub-grantee:** City of Plummer, Idaho

**Description of work to be performed in 2006:** Construction began in 2005 and will be completed in early 2006. Monitoring and testing will be completed on a monthly basis from September, 2005 through September, 2006. Following is a synopsis of the 2006 project schedule:

- January 30, 2006 - Complete First Quarter Monitoring Report, pilot study fourth monitoring
- February 28, 2006 - Pilot study fifth monitoring
- March 31, 2006 - Pilot study sixth monitoring
- April 30, 2006 - Complete First Six-Month Monitoring Report, pilot study seventh monitoring
- May 31, 2006 - Pilot study eighth monitoring
- June 30, 2006 - Pilot study ninth monitoring



- July 31, 2006 - Complete Third Quarter Monitoring Report, pilot study tenth monitoring
- August 31, 2006 - Pilot Study eleventh monitoring
- September 30, 2006 - Pilot Study final monitoring
- October 15, 2006 - Pilot Study Final Report submitted to IDEQ, BEIPC, Coeur d'Alene Tribe

### **Plummer Creek Watershed Nutrient Load Assessment, Modeling and Management Plan Development**

**Sub-grant amount:** \$165,700

**Sub-grantee:** CDA Tribe

**Description of work to be performed in calendar year 2006:** Field water quality and constituent concentration data will be collected at key points, including potential pollutant sources in the Plummer Creek watershed. Approximately 18 samples will be collected on a regular basis (approximately bi-weekly March-April, and monthly for the remainder of the year) from each point for two full water years starting Oct. 1, 2005. In addition, point source discharges (i.e. the Plummer City Wastewater Treatment Plan outfall) will be monitored. The following field data will be collected: instantaneous streamflow, specific conductivity, dissolved oxygen (mg/L and % saturation), pH and water and air temperatures. Samples will also be collected for laboratory analysis of phosphorus (total and dissolved "ortho"), nitrogen (nitrate+nitrite, ammonia, total Kjeldahl), hardness, total suspended solids and fecal Coliform bacteria.

### **Pinehurst Flood Impact Study**

**Sub-grant amount:** \$330,000

**Sub-grantee:** IDEQ

The project assessment was conducted in 2005. This assessment included sampling sediments for heavy metals and their geographic distribution within the lower Little Pine Creek reach. Existing soil, riparian plant, and wetland plant inventories occurred for Little Pine Creek and its wetland. Flood and contamination risk was analyzed and mapped.

**Description of work to be performed in 2006:** Utilizing assessment information, prepare design report for Little Pine Creek Pilot Project. Report will include hydrology and hydraulic parameters, stream bank treatments, stream configuration, and plants. Monitoring stations will be established for water quality assessment. After report approval from the TLG, Little Pine Creek improvements will be designed and presented in a bid package. Discussion of Division Street improvements will occur with the TLG and City of Pinehurst. A design package will be prepared that includes stream improvements and Division Street storm drainage improvements. A construction

contractor will be secured and the project implemented in 2006. A monitoring program will be developed that observes water quality parameter changes after three a year period.

**Little Pine Creek Improvement Design,**

Survey	Oct 05
30%	Dec 05
90%	Feb 06
Permits	Feb 06
Bid Package QA/QC	June 06
Final Bid Package QA/QC	June 06

**Little Pine Creek Stream Improvement Construction**

Contract Award	Aug 06 (early)
Start Work	Aug 06 (late)
Complete Work	Oct 06

**Silver Crescent Mine and Mill Complex Habitat Restoration**

**Sub-grant amount:** \$318,700

**Sub-grantee:** USDA Forest Service

**Description of work to be performed in 2006:** Construction contract award late in 2005 or early 2006 with implementation start planned for 2006. Stream channel construction with wildlife and fish habitat structure installation will encompass the bulk of the construction phase at the site. Comprehensive native vegetative restoration at the site which will include treatment for noxious weeds will follow, possibly utilizing a second contract in 2007. A post construction report will outline the entire project and any changes that were made. This report will include an evaluation of successes and a section dedicated to “lessons learned”. Site maintenance and a 5-year monitoring effort will start at the close of the construction phase.

**Canyon Creek Treatability Study**

**Sub-grant amount:** \$100,000

**Sub-grantee:** IDEQ

**Description of work to be performed in 2006:** A contract will be awarded to develop a conceptual design for construction of an alkaline precipitation treatment pilot plant study. The conceptual design will include a literature search into the technology; an evaluation of implementation and effectiveness issues associated with this technology; and a design for a pilot scale test facility and program. It will include conceptual sizing and operational requirements of the entire full scale treatment system including land requirements, access, treatment ponds, process equipment, piping, power and electrical requirements, water collection, pumping, and waste disposal systems. It will also include

an assessment of operations and maintenance activities and costs and a discussion of the pros and cons of utilization of this treatment technology. Inherent in that discussion will be the requirements of the ROD for OU-3 and the applicable water quality discharge limitations.

The Draft Report will be presented to the TLG. The presentation will be in sufficient detail to allow TLG members to understand and comment upon the study, design, process, and cost estimates. The results of the presentation and TLG comments will be addressed in subsequent design phases. The final results of the entire work effort will be presented to the TLG and the BEIPC. The design will be finalized in 2006 with no follow-on work anticipated in subsequent years.

### **South Fork Sewer District Toxicity Reduction**

**Sub-grant amount:** \$115,900

**Sub-grantee:** South Fork of the Coeur d'Alene River Sewer District

#### **Description of work to be performed in 2006:**

- Baseline toxicity testing (whole effluent toxicity) – January 2006, June 2006, and October 2006
- Review of potential sources of toxicity at the Page WWTP – April/May 2006
- Step-wise toxicity identification evaluation (TIE) – June through August, 2006
- Toxicity control evaluation (TCE) – November 2006 through May 2007
- Draft report – August 2007
- Final report – December 2007

### **Assessment of the Economics and Effectiveness of Alluvium Sorting as Mine Waste Removal Strategy at the Project Implementation Level**

**Sub-grant amount:** \$207,000

**Sub-grantee:** IDEQ

**Description of work to be performed in 2006:** During the 2005 construction season, alluvium-tailings mix from areas 4 and 5 of the Monarch Site was excavated and sorted with a screen plant. Material less than 1 inch (tailings fraction) passed the screen and was removed to the repository, while the 1 inch plus material was re-distributed on the floodplain. Accounting was made of yards of tailings and sorted tailings removed to the repository as well as removal and repository construction costs. The density and compaction of bulk tailings and sorted tailings was measured in the repository using nuclear densitometry. The amount of contaminated sediment in stream sediment was measured prior to tailings removal. A preliminary report on the project results to date is in preparation for the BEIPC.

During calendar year 2006, Prichard Creek will be monitored to establish if bank full discharge occurs either during a winter storm event or spring runoff. Bank full discharge is sufficient to mobilize the stream bed, displacing sediments accumulated. If at least one bank full discharge occurs, stream bed load sediment will be re-sampled for its metals content for comparison to pre-tailings removals content. The project has allotted four seasons (2006-2009) to attain at least two bank full discharge events and assess the effectiveness of the project in removal of contaminated sediments from Prichard Creek.

### **Coeur d'Alene Lake Management Plan Implementation**

**Sub-grant amount:** \$137,200

**Sub-grantee:** IDEQ, CDA Tribe

**Description of work to be performed in 2006:** From September 2005 through April 2006, contact and meetings will be held with representatives from agencies and private businesses that manage or conduct land use and disturbance activities within the immediate vicinity of the lake. The meetings will present the purpose of and seek cooperation and input for the survey and effectiveness audit. Agencies and businesses will include, but may not be limited to:

Kootenai County  
Coeur d'Alene Tribe  
IDEQ  
City of Coeur d'Alene  
Idaho Department of Lands  
USDA Forest Service  
Panhandle Health District  
Kootenai/Shoshone Soil & Water Conservation District and NRCS  
North Idaho Building Contractors Association  
Coeur d'Alene Realtors  
Private timber companies  
Wastewater dischargers  
Marina operators  
Golf course managers

With anticipated cooperation and input from the agencies and businesses listed above, conduct and complete a survey and effectiveness audit that would:

- Evaluate what best management practices (BMPs) are in place to protect water quality;
- Determine the effectiveness of those BMPs being used;
- Evaluate areas and activities where BMPs are required under various regulations, but are not being applied or are being applied improperly;
- Establish specific BMP audit procedures where needed for the following, but not limited to these activities - road construction and maintenance, building and

facility construction, installation of septic and other wastewater treatment systems, operation and maintenance of marinas and docks, construction, operation and maintenance of golf courses; recreational use of the Coeur d'Alene and St. Joe Rivers and agricultural operations; and

- Determine future programmatic funding projections to continue nutrient management activities.

Results of the survey will be reported to the BEIPC and incorporated into the revised Lake Management Plan management tables currently being developed by IDEQ and the Tribe. This work will also serve as the basis for establishment of a standardized audit process that can be repeated as needed to evaluate the effectiveness of LMP actions.