

Confidential Memorandum

To: Rebecca Neri Zagal, ONRT; Russ MacRae, USFWS; Ben Kuykendall
From: Diana Lane, Hillary Browning, and David Chapman, Stratus Consulting Inc.
Date: 11/7/2005
Subject: Update on status of potential Molycorp restoration projects

1. Introduction

The purpose of this update is to provide the Molycorp Trustees with information on the status of potential Molycorp restoration projects and initial project benefit estimates. Over the last two months, we have conducted site visits and interviews with state agency personnel, as well as worked with Bob Haddad and his team, with the goal of evaluating the feasibility of proposed projects. Projects listed as “Priority Group 1” are currently considered to be the top-ranked projects, based on the project evaluations that were undertaken. These projects are being actively investigated to gain further information about project details (location, scope of actions, need for monitoring) and to develop project scaling (how much credit would each project provide). Projects listed as “Priority Group 2” are projects that passed the initial screening criteria and could be included in a restoration proposal if additional restoration credits are required. We are currently not collecting additional information on these projects.

2. Current Status of Project Scaling Information

We compared estimated project credits to the Trustee calculated debits for injuries to aquatic, terrestrial, and groundwater resources (summarized in Table 1).

Table 1. Summary of Trustee calculated debit for Molycorp

Resource Category	Miles or Acres	Discounted Service Acre-years (DSAYs)
Aquatic resources	9.2 miles = 20.8 acres	725
Terrestrial resources (quantified as riparian)	44.4 acres (upper end of Trustee estimate)	3010
Groundwater: 2- 4 cfs (not discounted)		

In Table 2, we have summarized current information about assumptions used for project scaling and noted areas where we are still gathering information to refine scaling estimate. We also present the approximate percentage of the Trustee calculated debits for which the projects would compensate.

The aquatic projects currently in Priority Group 1 include construction of a new pond at Eagle Rock Lake, two projects to benefit Rio Grande cutthroat trout (RGCT) in the Red River watershed (Columbine Creek and Bitter Creek), construction of a fish ladder at the state fish hatchery near Questa, and projects to improve aquatic habitat for RGCT in the Comanche Creek drainage in the Valle Vidal. We are working to refine project descriptions and scaling estimates for each of these projects. Our approach is to determine credits available from priority projects in the Red River watershed and then to make up any additional credits needed using priority projects in other locations such as the Valle Vidal (most likely in Comanche Creek or Rio Costilla). Based on current scaling estimates, the Valle Vidal projects will need to provide approximately 45% of the total aquatic credits needed. Ben Kuykendall is working to determine what project actions could be taken, how much credit these actions would provide, and approximate cost estimates. If the Valle Vidal projects cannot provide the number of credits needed, the Trustees would need to consider further the projects in Priority Group 2.

The riparian projects currently in Priority Group 1 include habitat protection and expansion at Anderson Ranch, alluvial fan habitat enhancement, and riparian enhancement at Fawn Lakes. Our approach is to determine credits available from priority projects in the Red River watershed and then to make up any additional credits needed using priority projects in other locations such as Anderson Ranch. Additional work is needed on cost-effectiveness to determine which riparian projects to pursue in what order of priority.

The groundwater projects currently in Priority Group 1 include work to improve the Questa Wastewater Treatment Plant and work to improve the efficiency of the water distribution system within Questa. Additional work is needed to quantify the potential groundwater benefits of these projects. We also are investigating potential groundwater benefits that would result from work at Anderson Ranch.

Table 2. Current status of proposed Molycorp restoration projects

Project titles	Project status	Scaling (note that scaling information summarizes site-specific HEA calculations)
Projects to benefit aquatic resources: Priority Group 1		
Construction of a second Eagle Rock Lake and associated riparian and wetland habitat	Molycorp wrote a project description likely sufficient for NEPA. No further project development work underway.	4.7 acre pond with stocking rate of 1,200 fish/acre for 4 months per year. Trustee estimate: 53 DSAYs = 7% of debit. Do we need to transfer this land to FS or to state; who would stock the pond and would there be a charge; if project work done while private then less NEPA then if transfer before work done; if transferred then the maintenance would be the responsibility of the FS; would there be existing cost to state to stock the facility; need to incorporate access for stocking (gate vehicular access); Ben will call the hatchery about stock costs
Lower Columbine Creek Rio Grande Cutthroat Trout expansion	Molycorp wrote a project description likely sufficient for NEPA. This project would expand RGCT to an additional 0.7 acres of lower Columbine Creek between the campground and the current barrier that protects existing RGCT; electro shock and relocation of non-natives (about 3 yrs); improving lower barrier if necessary	0.7 acres of new RGCT. Estimate: 59 DSAYs = 8% of debit.
Upper Columbine Creek Rio Grande Cutthroat Trout protection	Expanding RGCT in Lower Columbine Creek would provide additional protection for the existing RGCT population.	Avoidance of barrier failure risk for existing RGCT would provide approximately 60 DSAYs = 8% of debit (estimate; Stratus is refining scaling).
Bitter Creek habitat improvement	Improving habitat in Bitter Creek would benefit an existing RGCT population. Stratus is working to refine scaling based on estimates of increases in carrying capacity; bank improvement and pooling; would have to put up fencing; Ben and HT will discuss and view area	Restoration benefit currently estimated at 138 DSAYs (19% of debit). We need to confirm area that project will benefit.

Comanche Creek aquatic enhancement – in-stream habitat and riparian enhancement	Stratus wrote a draft project description. Ben Kuykendall is working to identify project opportunities and specific benefits. Also need Comanche baseline fish densities.	1 acre of restoration estimated to equal 51 DSAYs (7% of debit per acre) if baseline densities equivalent to Columbine Creek (credit will vary with density).
Comanche Creek sediment control to benefit aquatic resources	Stratus wrote a draft project description. Ben Kuykendall is working to identify project opportunities and specific benefits. Also need Comanche baseline fish densities.	1 acre of restoration estimated to equal 51 DSAYs (7% of debit per acre) if baseline densities equivalent to Columbine Creek (credit will vary with density).
State fish hatchery fish ladder construction	Stratus wrote a draft project description. Project benefits based on projected increases in brown trout populations for 0.75 miles.	Project benefit estimated at 117 DSAYs (16% of debit).

David: present to Moly priority 1 projects, include Questa RR downstream from 522 bridge and recommend Valle Vidal

Table 2. Current status of proposed Molycorp restoration projects (cont.)

Project titles	Project status	Scaling (note that scaling information summarizes site-specific HEA calculations)
Projects to benefit aquatic resources: Priority Group 2		
Fawn Lakes Aquatic enhancement	Project was placed in Group 2 because of limited potential net environmental benefit No new work on project. Could be considered again.	Project benefits would come from improving habitat to allow increased stocking densities.
Potato Patch Spring habitat creation	Project was placed in Group 2 because of limited potential net environmental benefit No new work.. Could be considered again.	Scaling approach would be similar to Eagle Rock Lake (would need acreage of pond and stocking density).
Red River habitat improvements in the town of Red River	Project was placed in Group 2 because of presumed administrative infeasibility. Could be considered again.	Project benefits would be scaled based on expected increases in carrying capacity for resident trout.
Village of Questa Red River habitat improvements – below 522 bridge	Project was placed in Group 2 because of presumed administrative infeasibility . Could be considered again.	Project benefits would be scaled based on expected increases in carrying capacity for resident trout; would still only add at most 10%
Forest Service migration barrier removal	Project was placed in Group 2 because of presumed lack of cost effectiveness (limited benefit). Could be considered again.	Scaling approach would be similar to fish hatchery (expected increase in carrying capacity above barrier).
Projects to improve or protect terrestrial or wetland habitat – Priority Group 1		
Eagle Rock Lake riparian and wetland habitat creation	Molycorp has written project description for riparian and wetland habitat associated with lake development.	Project would create 1.7 acres of new riparian habitat and 1 acre of new wetland habitat. Total credit would equal approx. 300 DSAYs (10% of debit).
Anderson Ranch habitat protection	Molycorp has indicated willingness to preserve portion of ranch as either conservation easement or transfer of property to non-profit organization. Need further investigation into legal issues associated with property transfer.	Protection of 330 acres from grazing (combination of upland, marshy, and open water habitat) would be sufficient to equal Trustee debit (approx. 3000 DSAYs provided).
Anderson Ranch habitat expansion	Would require re-routing water to convert marshy habitat to open-water habitat.	Provides approximately 25 DSAYs per acre converted. thought this might have probs with water users and SEO

Table 2. Current status of proposed Molycorp restoration projects (cont.)

Project titles	Project status	Scaling (note that scaling information summarizes site-specific HEA calculations)
Alluvial fan habitat enhancement along the Red River	Stratus wrote a draft project description. This project would continue Forest Service work to improve habitat conditions along the Red River. Stratus is investigating to determine appropriate locations, degree of benefit from actions, and cost. thinning conifers	Improvement to 100 riparian and 200 upland acres (alluvial fan acres may not be realistic) would provide approximately 525 DSAYs (18% of injury). Short lifespan; could have some SW improvement
Fawn Lakes Riparian enhancement	Stratus wrote a draft project description. Actions to remove an obsolete ramp and place large woody debris would help reconnect riparian corridor to periodic high flows and maintain cottonwoods and other vegetation. Stratus is investigating to determine appropriate locations, degree of benefit from actions, and cost.	Improvement to 20 riparian acres would provide approximately 140 DSAYs (5% of injury).
Projects to conserve water use, benefit groundwater quality, or develop groundwater resources for human use – Priority Group 1		
Village of Questa water distribution improvement	Active investigation by Trustees to determine potential costs and degree of benefit.	Not yet known.
Village of Questa WWTP upgrade	Active investigation by Trustees to determine potential costs and degree of benefit.	Not yet known.
Increase GW quantity and improve GW quality at Anderson Ranch...		

Eagle Rock, Fawn Lake, Anderson protection, Alluvial, Anderson expansion

3. Current Status of Projects Originally Included for Consideration

Table 3 summarizes the current status of projects that were originally listed in Table 2 of the Molycorp restoration “booklet” (Stratus Consulting, 2005. Molycorp Cooperative NRDA: Restoration Planning Project Descriptions. Draft Confidential Memorandum. May 25.). This summary helps to track the outcome of the different project ideas. Revised project names are given for some projects with new project descriptions. Projects listed as “removed from consideration” were withdrawn as potential project ideas because of failing to meet the established project screening criteria, including technical and administrative feasibility and need to provide a net environmental benefit. The table also tracks which projects were placed into Priority Group 1 or Priority Group 2.

Table 3. Current status of proposed Molycorp restoration projects

Original project name	Revised project names	Current status	Rationale
Habitat improvements to ponds and lakes			
Cabresto Creek cutthroat trout enhancement	Cabresto Creek Fish Barrier and Rio Grande Cutthroat Trout Restoration	Removed from consideration	Not biologically feasible to remove resident trout with electrofishing to restore cutthroat; use of piscicide to remove resident trout unlikely to gain approval in this location.
Cabresto Creek cutthroat trout enhancement	Pool Development in Upper Cabresto Creek	Removed from consideration	Additional field visits by Trustees and by Chadwick Ecological Consultants determined that habitat in Upper Cabresto Creek is in good condition; additional pool development not needed.
Fawn Lakes habitat improvements	Fawn Lakes Aquatic Enhancement	Priority Group 2	Actions could be taken to benefit fishery in Fawn Lakes; ecological value of these actions is limited because of put-and-take nature of fishery.
Fawn Lakes habitat improvements	Fawn Lakes Riparian Enhancement	Priority Group 1	Actions to remove an obsolete ramp and place large woody debris would help reconnect riparian corridor to periodic high flows and maintain cottonwoods and other vegetation.
Potato Patch Spring habitat creation	None	Priority Group 2	Pond development is technically feasible here; Molycorp and Trustees have agreed that Eagle Rock Lake is the best site for new pond creation. If an additional pond is wanted, this project could be considered again.
Goathill Pond creation	None	Removed from consideration	Because of poor quality Red River water, metals could build up in the proposed wetland and pose a risk to wildlife.
Eagle Rock Lake habitat improvement and creation	Construction of a second Eagle Rock Lake and associated riparian and wetland habitat	Priority Group 1	This project is considered a top priority for the Trustees and for Molycorp.
Hunts pond improvements	None	Removed from consideration	Project considered to be technically and administratively infeasible.

Table 3. Current status of proposed Molycorp restoration projects (cont.)

Original project name	Revised project names	Current status	Rationale
Shuree ponds improvements; Valle Vidal area	None	Removed from consideration	Trustees and Molycorp prefer that a pond improvement or creation project take place closer to the injured area, in the Red River watershed.
Projects to benefit instream communities and/or riparian habitat			
Columbine Park Pond Complex habitat creation	None	Removed from consideration	Project considered technically infeasible because of risk of contaminated groundwater infiltrating into pond.
Red River habitat improvements in the town of Red River	None	Priority Group 2	Project may be technically feasible. Concern over liability if in-stream work causes flooding.
State fish hatchery fish ladder construction	None	Priority Group 1	Project currently being investigated to determine the degree of benefit of fish ladder construction.
Village of Questa Red River habitat improvements	None	Priority Group 2	Project may be technically feasible. Concern over possible lack of local support for creating holding water which could increase flood risk for adjoining properties.
Mainstem Red River embeddedness treatment/study	None	Removed from consideration	Project considered to have low probability of success.
Rio Costilla aquatic enhancement	None	Removed from consideration	Project considered to have low administrative feasibility.
McCrystal Creek headgate	None	Removed from consideration	Benefit of project to aquatic resources is unclear.
Comanche Creek cutthroat migration barrier	Comanche Creek aquatic enhancement – in-stream habitat	Priority Group 1	Active investigation by Ben Kuykendall to determine potential aquatic restoration projects and degree of benefit.
Restore Rio Grande cutthroat trout in Comanche Creek	Comanche Creek aquatic enhancement – in-stream habitat and riparian enhancement	Priority Group 1	Active investigation by Ben Kuykendall to determine potential aquatic restoration projects and degree of benefit to aquatic and terrestrial resources from riparian enhancement projects.

Table 3. Current status of proposed Molycorp restoration projects (cont.)

Original project name	Revised project names	Current status	Rationale
Projects to benefit surface water quality for streams and rivers			
Stream Crossing improvements – Comanche Creek and North Ponil Creek	Comanche Creek sediment control to benefit aquatic resources	Priority Group 1	Active investigation by Ben Kuykendall to determine potential aquatic restoration projects and degree of benefit, including sediment control projects.
Forest Service road reconstruction near ranger station	None	Removed from consideration	Project considered to have very low net environmental benefit
Obliterate road and return to natural contours – Chuck Wagon Creek and Gold Creek	Comanche Creek sediment control to benefit aquatic resources	Priority Group 1	Active investigation by Ben Kuykendall to determine potential aquatic restoration projects and degree of benefit, including sediment control projects.
Mitigation of off-road vehicle impacts to watershed	None	Removed from consideration	Appropriate locations for project never identified.
General road improvements in the watershed	None	Removed from consideration	Appropriate locations for project never identified.
Rio Grande box recreational facilities development	None	Removed from consideration	Project considered to have very low net environmental benefit (recreation focus).
Cebolla Mesa trail improvement	None	Removed from consideration	Project considered to have very low net environmental benefit (recreation focus).
Projects to improve or protect terrestrial or wetland habitat			
Sunshine Valley/ Anderson Ranch wetland site	Anderson Ranch habitat protection	Priority Group 1	Priority project for Trustees and Molycorp.
	Anderson Ranch habitat expansion	Priority Group 1	Priority project for Trustees and Molycorp if credits are required.
Improve winter range for bighorn sheep	None	Removed from consideration	Project considered to have unacceptable level of risk because of need to conduct controlled burns on steep mountainsides.
Alluvial fan habitat enhancement along the Red River	None	Priority Group 1	Active investigation by Trustees to determine appropriate locations and degree of benefit from actions.

Table 3. Current status of proposed Molycorp restoration projects (cont.)

Original project name	Revised project names	Current status	Rationale
Projects to conserve water use, benefit groundwater quality, or develop groundwater resources for human use			
Well and distribution system for Lama	None	Removed from consideration	Project increases groundwater use instead of providing savings.
Village of Questa water distribution improvement	None	Priority Group 1	Active investigation by Trustees to determine potential costs and degree of benefit.
Development of Water Conservation Ordinances	Develop water conservation program	Removed from consideration	Considered to be administratively infeasible.
Village of Questa WWTP upgrade	None	Priority Group 1	Active investigation by Trustees to determine potential costs and degree of benefit.
Red River WWTP sludge-drying basin lining	None	Removed from consideration	Project opportunity not available.
Red River underground storage tank remediation	None	Removed from consideration	Project opportunity not available.
Septic system concerns in Lama or San Cristobal.	None	Removed from consideration	Project considered administratively infeasible and unlikely to provide high degree of benefit.
Construction of small retention dams for groundwater storage	None	Removed from consideration	Project considered technically and administratively infeasible given water appropriation in area.
Public education about beavers and restoration	None	Removed from consideration	Project considered to provide low degree of direct environmental benefit.
Projects primarily related to recreation or tourism			
Funding for promotion of outdoor activity related tourism	None	Removed from consideration	Project considered to provide no direct environmental benefit.