United States Department of the Interior

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May 16, 2002

Mark Purcell, Remedial Project Manager
U.S. Environmental Protection Agency
Region 6 superfund Program
Dallas, Texas 75202

Dear Mr. Purcell:

Thank you for the opportunity to review the March 2002, Molycorp RI/FS Workplan (Workplan) and the April 1, 2002, Molycorp Revised Conceptual Site Model Text Submittal. While we have made an attempt to comment on all portions of this plan applicable to U.S. Fish and Wildlife Service (Service) trust resources, it is far too long and complex to evaluate adequately in writing alone. In our opinion, the plan submitted does not fully support the Molycorp Baseline Ecological Risk Assessment framework prepared by Environmental Protection Agency's (EPA) ecological risk assessment staff. Moreover, in many cases the number of sample sites and sampling frequency will not result in statistically significant results. The Workplan often assumes a homogeneity in sample data that is not supported by existing data and/or site characteristics. A follow-up meeting among the EPA Molycorp technical team and Molycorp will be important to discuss the particulars of sample types, locations, frequency, etc.

We consider the Migratory Bird Treaty Act, the Endangered Species Act, the Bald and Golden Eagle Protection Act, and the Fish and Wildlife Coordination Act to be Applicable, Relevant, and Appropriate Requirements (ARARs) under Comprehensive Environmental Remediation, Compensation, and Liability Act (CERCLA). Despite Molycorp's contention to the contrary, waterfowl and other migratory birds, listed species, and their supporting habitat should be addressed and protected by CERCLA.

We are also concerned about the Workplan's elimination of so-called active mine areas and areas subject to the Closeout/Closure Plan (CCP) under the New Mexico Mining Act. While the CCP is an excellent step towards the ultimate remediation and closure of this site, it does not automatically exempt Molycorp from the requirements of CERCLA. Furthermore, issues such as the definition of a "self-sustaining ecosystem" as described in the New Mexico Mining Act, are still being resolved, and could result in the requirement of more extensive ecological risk investigations to finalize the CCP. It is quite appropriate to consider the CCP in the Workplan, as long as it doesn't conflict with CERCLA requirements. As a step in identifying the similarities and contrasts between the CCP and CERCLA, CCP evaluation approaches, remediation designs, and timeframes for remediation should be discussed in the Workplan, and

compared and contrasted with CERCLA requirements. For example, we are concerned that the wetlands on top of the tailings will continue to exist as an ongoing ecological risk to wildlife (and perhaps people) until remediation under the CCP, which may be far in the future.
We are also concerned about the choice of reference areas. The Workplan assumes that the upper Red River is reflective of the entire mine and the Red River. Additional sampling for derivation of reference conditions should be added, either in the Cabresto Creek area, or preferably in the Rio Pueblo de Taos area. This basin is more similar to the lower Red River in terms of stream size, gradient, and other geomorphological characteristics. Likewise, a separate reference area in the Guadalupe Mountains would be useful when evaluating the tailings area. We feel inclusion of the Rio Pueblo de Taos and the Guadalupe Mountain areas will result in better, more cost efficient remedial decision making.

This Workplan also makes extensive reference to prior studies, and other regulatory processes and the documents and reports generated pursuant to those regulations. While inclusion of existing data is necessary for preparation of the RI/FS, this Workplan appears to present a somewhat biased accounting of the available reports and the conclusions therein (there are additional data available from New Mexico Environment Department and EPA that were minimized). Data used in the development of this Workplan could be summarized more efficiently using more tables and figures, rather than in long text passages. This may also reduce the appearance of bias in what data are elaborated on and used for sampling design.

Our comments focus on the overall sampling approaches described for specific portions of the site - we have divided our comments into those addressing the Mine Site, the Red River (including the riparian zone, floodplain, irrigation ditches, ponds, etc.), the Tailings Pipeline Corridor, and the Tailings Facility. These general comments are then followed by additional section-specific concerns/suggestions. Highly technical issues, such as agreement on ecological risk assessment TRVs and soil screening benchmarks are not discussed in this letter, but are important components of the final plan. We hope to address these in subsequent revisions of the Workplan, at meetings, and in phone discussions.

<u>Mine Site</u>

Soils

We disagree with the Work Plan's claim that open pit and subsidence area soils represent insignificant ecological risks. Targeted samples should be collected in bench areas and other locations that allow for vegetative growth, or have the potential for vegetative establishment. For example, portions of the open pit at the bottom, and large areas of the subsidence zone, are accessible to wildlife. For the remaining areas of the mine site, soil sampling approaches are, in general, appropriate, with the following caveats (assuming that EPA's review confirms that sampling frequencies and locations are statistically adequate).

Some of our concerns would be addressed by collection of additional samples. (1) in areas subject to plant rooting and/or burrowing animal activity, samples should be collected at the

surface as well as 12-36 inches. (2), areas surrounding waste rock piles should be sampled more intensively to determine extent of contaminant migration away from the piles. (3) targeted samples should be collected in drainages. (4) Molycorp's property boundary should not reflect a boundary for sampling. Samples should be collected in any areas potentially contaminated due to wind or erosion. (5) in some areas, samples are spaced by as much as a quarter mile. This may not be adequate sampling frequency to determine cost-effective remedial boundaries. (6) soil sampling reference areas appear to be biased slightly towards natural scar areas. This assumes that the baseline condition of the mined area is the same as the upstream scar areas. Adequate data are not presented justifying this assumption. For example, what is the acreage of upstream scar areas versus pre-mine mined area scar acreage? Additional reference soils should be collected from a site other than the upper Red River Canyon. Soils in the nearby Cabresto drainage may be appropriate.

Biota

Unless an area is part of active operations and is routinely disturbed, or the area is very small, the absence of suitable habitat is not an adequate reason to eliminate biota sampling. The very reason that habitat is inadequate may be related to COCs and ecological risks from those COCs. Furthermore, the specified three samples for biota metals analysis are not sufficient to develop any kind of statistically significant relationship between soil metal concentrations and biota concentrations.

Plant sampling is especially limited. Prior studies conducted by Molycorp clearly established that different species of plants bioaccumulate metals, especially molybdenum, quite differently. Any vegetation sampling plan must recognize and account for this differential metal uptake. Moreover, while sampling of entire aboveground plant biomass will yield some limited data on soil-plant bioaccumulation, it will indicate nothing about exposure pathways to herbivorous wildlife. To evaluate exposure to herbivorous wildlife, seeds, leaves, and roots must be sampled. In aquatic environments, key forage plants should be sampled.

The currently proposed biota metal concentration sampling in the Work Plan is so limited, that it is practically without use for developing ecological risk estimates and developing remedial strategies. This section should be significantly expanded to better follow EPA's proposed ecological risk assessment framework.

Surface Water and Sediment

Water, sediment, and biota in perennial and ephemeral waters within the canyons in the mine site sampling area should also be sampled. Examples include perennial portions of Capulin and/or Sulfur Canyons and any impounded waters resulting from rain, snow, and seepage collection systems. Seepage collection systems that exclude wildlife via fences and netting do not need to be sampled.

Groundwater

Groundwater sampling and analysis is not the Service's area of expertise, so our comments are brief. However, it seems that the existing well distribution is inadequate to determine the down-gradient extent of contamination. For example, furthest down-gradient wells MMW2, MMW3, and MMW42A indicate groundwater still has elevated contaminant concentrations. Additional wells further down-gradient may be needed to evaluate the extent of contamination. At present it seems that the assumption is that groundwater contamination is limited to the north side of the Red River. A hydrological analysis of this potential boundary should be provided, or additional wells to the south of the Red River should be installed.

Red River

Because the pH of the Red River is typically greater than 7.0, most metals added to this system will tend to remain in the particulate phase and/or precipitate into sediments. Therefore, toxicity of the water-column to aquatic biota may not be chronic, but instead a short term, acute phenomena related to pulsed loading of metals following snow-melt or storm runoff. Studies, such as those performed on the Clark Fork River in Montana, demonstrated that pulsed exposures to metals can adversely affect biota, even when chronic exposure concentrations are low. Thus, the timing of water sampling and toxicity testing is important. Sampling of water, sediments, biota, and toxicity testing, should be designed to capture these potentially short term, infrequent events that could be markedly influencing the ecological health of the Red River corridor.

Stream Water

A total of 25 sampling locations are identified. Of these 25 sites, 8 are above potential mine influences. These 8 samples extend over approximately 35 river miles, or about 1 sample every 4.5 miles. The remaining samples extend downstream for another ~35 river miles, ending at site LR16, just above the New Mexico Fish Hatchery (~1 sample every 2.1 miles).

Upstream reference sample locations (above potential mine references) seem appropriate. Sites below the Molycorp properties also look fine up to site 16 at the Eagle Rock Campground, above Eagle Rock Lake. The concern is that the next sampling point is not for another 10 river miles, at LR5, near the tailings facility. The flood plain in this area, directly below Eagle Rock Lake, is wide and the river bifurcates. At least one irrigation ditch could also serve as a conduit for contaminated water and sediments to this floodplain area. While it is likely that the southern channel of the Red River is dry during low flows, during high flows this channel likely carries a portion of the total flow in the Red River corridor. This area should be thoroughly sampled.

Four additional sampling sites should be established in the main channel between site 16 and LR5. One below the outfall from Eagle Rock Lake, one above the Cabresto Creek inflow, one below Cabresto Creek, and one more midway between Cabresto Creek confluence and LR5. In addition, when there is flow, 2-3 sample sites should be established in the southern channel of the Red River and in the Emergo irrigation ditch. Lastly, to remain consistent with historical samplings, one sample site should be added below the State of New Mexico Fish Hatchery. If

after initial samplings, COC concentrations below the hatchery are greater than reference concentrations, additional downstream sites should be investigated to determine the downstream extent of COC concentrations.

NOTE: If data from historical sampling sites are to be used in remedial decision making, current samples should be collected to verify that historical results are accurate and consistent over time.

Sampling frequency- To fully characterize the heterogeneity of chemical concentrations in the Red River over time, samples should be collected during winter low-flow, spring-runoff, summer low-flow, and fall-storm flows. More intensive storm event sampling should be collected at an upstream reference and, at a minimum, below Capulin Canyon using an ISCO-type automated water sampler. Five samples should be collected prior to, during, and after a storm event at ~30min intervals to model the relationship between flow and contaminant loading. A high flow and moderate flow event should be evaluated in both the spring and fall. Once this relationship is defined, it can be used to plan event sampling at other sites throughout the Red River corridor. The three samples proposed by Molycorp at one storm event are not adequate to fully describe stormwater effects on the Red River.

Stream Sediments

Sediments should be collected at all sites sampled for water, at or near locations sampled for invertebrates (for those sites where invertebrates are sampled). At sites that have sediment depositional zones, a second, independent sample should be collected there. In depositional sediments with noticeable organic matter, acid volatile sulfide and TOC should also be analyzed. Sediments should be sampled two to three times a year, or at least prior to and after a major storm event (e.g., summer low flow and following a fall storm event).

Wetlands, Backwaters, and Lakes

Lakes, ponds, irrigation water impoundments, and wetlands are extremely attractive to wildlife in this semi-arid region. These ecological features should be located and sampled if there is any possibility that they have received contaminants. Sampling procedures at these features are very limited in the Workplan.

In addition to water samplings at Fawn and Eagle Rock Lakes, any wetlands, ponds, and other ecologically unique habitats (e.g., significant in-stream ponds or backwaters) should be sampled. These areas tend to accumulate fine sediments and organic matter, which may concentrate COCs and/or increase their bioavailability to biota. Several other small ponds are indicated on the maps provided. Any ponds that could have received COCs should be sampled. In addition to Eagle Rock and Fawn Lakes, ponds at the New Mexico State Fish Hatchery should be sampled. As opposed to the depth-integrated water sampling proposed by Molycorp, a surface sample should be collected to evaluate the drinking pathway for birds and other wildlife, and then a depth-integrated sample.

Because only one toxicity test is proposed for the both the lakes and the Red River, a "worst-case" sample should be evaluated, such as right after or during a moderate storm event. Sample(s) should be collected in near-shore, shallow areas where the majority of biota are found. In addition to fish, tadpoles, frogs, and/or salamanders should be collected for COC analysis to evaluate the food exposure pathway to carnivorous birds and other wildlife, such as the racoon.

In the Work Plan, only a single composited sediment sample will be collected from each lake. A single sample is inadequate to evaluate the nature and extent of contamination in this or any small body of water. At a minimum, three sampling sites should be established for Eagle Rock and Fawn Lakes, and the Hatchery Ponds. Water, sediment, and biota should be collected and evaluated for population structure, metal concentrations, and toxicity.

Riparian Soils

The Work Plan proposes to collect a total of 10 randomly located samples from the Red River riparian zone. This number of samples will not provide enough data to determine ecological risk and to develop remedial alternatives. We recommend collecting the following additional samples: (1) In the broad flood plain below Eagle Rock Lake, a minimum of 5 additional samples within the 100 year flood zone; (2) a minimum of 10 additional targeted samples along the main riparian area; and (3) 10 reference riparian soils above potential mine influences. Reference locations may need to be sampled in a similar geomorphological environment, such as the Rio Pueblo de Taos, to more adequately reflect baseline conditions of the lower Red River.

Biota

In addition to electrofishing, study reaches should be seined to evaluate the population structure of small fish species not readily identified via electroshocking techniques.

In addition to fish, tadpoles, frogs, and/or salamanders should be collected for COC analysis to evaluate the food exposure pathway to carnivorous birds and other wildlife, such as the racoon. Although Molycorp's CSM argues that reptiles and amphibians are not present at the site, this exposure medium should be retained until field recognizance proves otherwise.

Section 2.8.1 specifies that biota sampling will take place in September to stay consistent with prior sampling. This is fine, however, an additional sampling event in the late spring or early summer should be conducted to evaluate benthic invertebrates prior to emergence as adult insects.

Vegetation sampling

To best evaluate the lower Red River biota and habitats, a reference site other than the upper Red River or Cabrestro Creek (a smaller, higher order stream) should be selected and evaluated. The Rio Pueblo de Taos may be a good choice as a reference for biota and habitat. Furthermore,

sample size, species sampled, and parts of the plant sampled are not considered adequately. See comments below for more specific issues.

Tailings Pipeline Corridor

According to the NMED Work Plan developed to evaluate historical tailings spills (RI/FS Workplan, Volume 2, Appendix C), sampling sites will be determined based on a records search, interviews with residents, and visual reconnaissance. This approach alone is inadequate, especially in those areas where tailings may have been dispersed by floods, rain, or unknowingly deliberate actions by residents. Therefore, we recommend that soil samples be collected at intervals along the pipeline, based on likely deposition areas (e.g., historical pipe locations), surrounding topography, and when obvious, visual identification of tailing deposits. This sampling should include the area southeast of the town of Questa where the pipeline diverges from the Red River corridor on its way to the tailings facility.

Tailings Area

There are numerous samples collected in a relatively short distance from the tailings facility. The purpose of these samples is to identify the extent of potential contaminant transport off of the main tailings deposition areas. Instead of such an intensive sampling in only a few directions, we would suggest that fewer samples be collected in these radial "spokes" and instead sample more directions, add a distinct reference soil sampling site in the Guadalupe Mountains (rather than simply a subsurface sampling in the downwind areas), and add targeted sampling in depressions, ponds, and drainages. Any areas on or off Molycorp property that may have been contaminated by dam breaches or pipeline ruptures should also be sampled.

According to the Work Plan, areas within Tailings Section 14 will not be sampled, because they are considered to be outside CERCLA regulatory authorities. We strongly disagree, and can not accept a RI that does not include this area in an ecological risk assessment. A combination of aerial photographs, topographical maps, and field reconnaissance should be used to clearly distinguish active tailings deposition areas from inactive portions of the tailings facility.

Despite Molycorp's claim that waterfowl are not subject to CERCLA, it is our position that all migratory birds (including waterfowl), listed species, and other wildlife are subject to CERCLA

requirements. Portions of Tailings Area 14 (as defined in the Work Plan) have not been used for tailings deposition since the early 1990s (or before). Since then vegetative communities have established, and numerous well-developed wetland systems have formed. These systems represent significant ecological components, and as such should be sampled thoroughly to determine their potential ecological risks. Water, sediments, plants, and other biota should be sampled for metals. Evaluation of population structure is not necessary since the primary concern with these wetlands is their potential as a COC exposure route for biota using the area. In addition to fish (if present- may have been accidentally introduced as bait fish or dropped from the talons/beak of passing fish-eating birds), tadpoles, frogs, and/or salamanders should be collected for COC analysis to evaluate the food exposure pathway to carnivorous birds and other wildlife, such as the racoon. Although Molycorp's CSM argues that reptiles and amphibians are not present at the site, this exposure medium should be retained until field recognizance proves otherwise.

Lack of a sampling plan for the Tailings Facility wetlands is a significant omission.

Additional Section-Specific Comments

Pg. 2-6, Section 2.2.3: Provide more detail on alteration of local hydrology with dates, volumes, etc. Provide more detail on current surface hydrology within area canyons, such as estimates of surface runoff volumes and disposition, extent of perennial streams, and surface water impoundments.

Pg. 2-10, 2.2.5: Reference additional studies for existing biological data. (Chadwick Consultants is not the only biological data source).

Pg. 2-11, 2.2.6: Surveys have not been conducted for the endangered Southwestern willow flycatcher along the Red River. There appears to be suitable habitat for this bird between Eagle Rock Lake and the State of New Mexico Fish Hatchery. These birds have been documented in the Taos area. The Mexican spotted owl may also be present in the canyons surrounding the mine. Also, the lower portion of the Red River from above the State fish hatchery to the Rio Grande is designated as Wild and Scenic, and therefore warrants additional protection.

Pg. 2-13, 2.3.1.2: Statements such as "The plantings have been successful and are in the establishment phase" are not suitably justified. First, formal studies used to substantiate such a statement should be cited. And second, if the issue has dissenting opinions or additional unresolved issues, these should be discussed and cited. The purpose of this document should be to present a transparent, unbiased overview of issues at the site. *Throughout the document, subjective statements and arguments should be removed*.

Pg. 2-13, 2.3.1.2.1: Biota (plant roots and burrowing animals) will be exposed to soils from the surface to 36" or more. Molycorp should provide tables of surface, 0-6", 6-12", and 12-36" soil chemistry data, along with number of samples collected, GPS locations, and standard deviations of the means.

Pg. 2-16, 2.10.1.2: According to this section, biota will only be sampled from those sites that have sufficient habitat quality to provide sufficient mass for chemical analyses. This is an inappropriate criterion for site selection, since poor habitat quality may be related to the COC distribution being evaluated. Sites with limited sampling mass should be sampled, and only priority analyses conducted based on the available sample size. If no sample is available, this too is valuable information that should be recorded.

Pg. 2-17, 2.10.2: In lakes, benthic invertebrate tissue samples collected from near-shore areas (rather than at the center of the pond as Molycorp proposes) may be a more universal indicator of exposure to a larger variety of wildlife. Two fish tissue samples collected for ecorisk sampling at each site is inadequate. The variability in metal accumulation by fish can be significant, so to derive a statistically sound data point, 5-10 fish should be sampled per site.

Pg. 2-51 - 2-68, 2.3.8 (Groundwater): This section includes 17 pages of discussion on groundwater hydrology and background contributions of metals. In many places in this document, and this section in particular, Molycorp appears to be making the subjective argument that groundwater and surface water contamination of the site is due to natural background rather than their historical operations. While this viewpoint may ultimately prove to be true, or partially true, this sort of subjective discussion has no place in this type of document. Furthermore, throughout the document, there appears to be a disproportionate use of Molycorp's and their consultant's studies to support their discussions. There are numerous reports written by or contracted by several State and Federal Agencies that should also be discussed.

Pg. 2-73: Current discussion focuses on dissolved metals in surface water. While this is appropriate for regulatory compliance with surface water quality standards, it is not appropriate for nature and extent determinations and ecological risk calculations. Total and dissolved surface water metal concentrations should be discussed.

Pg. 2-75: Remove paragraph 3, beginning with "Existing water quality..." This paragraph is subjective and not supported by adequate data review. Graphs presented do not encompass the range of available data and use of a log scale is not necessary.

Pg. 2-75: Remove last two sentences of paragraph four, beginning with "Generally, ..." This paragraph is subjective and not supported by adequate data review.

Pg. 2-82, 2.4.4: See comments above regarding pg. 2-11. 2.2.6.

Pg. 82, 2.4.5: Ponds on tailings facility are also supported by rain and snowmelt. Some of these ponds have existed for over 10 years based on repeated site visits by the Service and other regulatory entities, and descriptions and photographs in the Service's Fish and Wildlife Coordination Act Report submitted in 1989 in support of the proposed expansion of the existing tailings facility onto the BLM-managed Guadalupe Mountains area.

If you have any questions, please contact Russ MacRae of my staff at (505) 346-2525, extension 124.

Sincerely,

Joy Nicholopoulos
Field Supervisor

cc:
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