i. Proposal number.# 2001-F202*
ii. Short proposal title.# Passivation technology for mine restoration*

APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN
1a1. Link to ERP Strategic Goals: What Strategic Goal(s) is /are addressed by this proposal? List the letter(s) of all that apply.

A. At-risk species
B. Rehabilitate natural processes
C. Maintain harvested species
D. Protect-restore functional habitats
E. Prevent non-native species and reduce impacts
F. Improve and maintain water quality# D, F*

1a2. Describe the degree to which the proposal will contribute to the relevant goal. Quantify your assessment and identify the contribution to ERP targets, when possible.# ERP Goal D - This project has the potential to provide indirect system-wide benefits in reducing metal loading to the environment and improvement of aquatic habitat and water quality.

ERP Goal F - This demonstration project, if successful, will contribute to this goal by improving water quality and reducing the load of toxic metals to water.

ERP Target #6 (Reduce input of contaminants into the Mokelumne River).*

1b. Objectives: What Strategic Objective(s) is/are addressed by this proposal? List Objective (from the table of 32 objectives) and describe potential contribution to ERP Goals. Quantify your assessment, when possible.# This project directly addresses Goal F, Objective 1 (reduce loadings and concentrations of toxic contaminants**).***

1c. Restoration Actions: Does the proposal address a Restoration Action identified in Section 3.5 of the PSP? Identify the action and describe how well the proposed action relates to the identified Restoration Action.# Restoration Action #6 (Contaminants in the Central Valley) - The project directly addresses restoration activities described in the PSP. The PSP states that Hg and trace metal studies should include bench scale testing and pilot projects to remove or reduce concentrations and loads from their source.*

1d. Stage 1 Actions: Is the proposal linked directly, indirectly or not linked to proposed Stage 1 Actions? If linked, describe how the proposal will contribute to ERP actions during Stage 1.# The proposed project is directly linked to the following State 1 Actions:

Stage 1 Action #6(Trace metals: Participate in remediation of mine sites as part of local or Delta restoration) and Stage 1 Action (Mercury abatement: participate in remediation (drainage control) of mercury mines).*

1e. MSCS: Describe how the proposal is linked to the Multi-Species Conservation Strategy and if it's consistent with the MSCS Conservation measures. Identify the species addressed and whether the proposal will "recover", "contribute to recovery" or "maintain" each species.# The proposal does not directly contribute to the recovery or maintenance of threatened or endangered species. It is presumed that there will be some incremental benefit to the environment if the project is successful and can be widely used to treat mine tailings.*

1f. Information Richness/Adaptive Probing related to the proposal: Describe the degree to which the proposal provides information to resolve one of the 12 scientific uncertainties (Section 3.3 of the PSP), and whether the proposal offers a prudent approach to answer these uncertainties.# The proposal will directly address the need for cost effective technologies to reduce metal loadings from mine sites. This is related to Scientific Uncertainty #11 (Contaminants in the Central Valley).*

1g. Summarize comments from section 1a through 1f related to applicability to CALFED goals and priorities. Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.# The Department of Conservation Report on Abandoned Mines reported that over 4,000 abandoned mines are thought to represent environmental hazards. A large portion of those mine are located within the Sacramento and San Joaquin River Watersheds. Mercury and other trace metals are leached to surface and groundwater from many of these mine sites in concentrations potentially toxic to aquatic organism.

Under Proposition 13, CALFED is initiating a program to fund mine drainage control and restoration projects to control discharge of toxic metals to water. In light of this and other CALFED goals, objectives and actions pertaining to Hg and other trace metals and other trace metals, results from this project could apply to many other mine sites CALFED may work on. Restoration of mine tailings can be costly and the results of this Pilot Project will be useful in evaluating future alternatives for restoration.

The PSP states on Page 6 that Public agencies may not use funds to support existing agency mandates or requirements. The PSP also states that projects that are regulatory conditions or mitigation requirements for a prior project will be evaluated on a case by case basis. The above statements in the PSP should be clarified by CALFED legal staff in relation to this proposal. There are existing Federal and State mandates and likely enforcement orders/agreements that require investigation and cleanup of this site. *

APPLICABILITY TO CVPIA PRIORITIES

1i. Describe the expected contribution to natural production of anadromous fish. Specifically identify the species and races of anadromous fish that are expected to benefit from the project, the expected magnitude of the

contribution to natural production for each species and race of anadromous fish, the certainty of the expected benefits, and the immediacy and duration of the expected contribution. Provide quantitative support where available (for example, expected increases in population indices, cohort replacement rates, or reductions in mortality rates).# The natural production of San Joaquin River fall-run chinook salmon could benefit from this proposal. However, neither the expected magnitude of the contribution to natural production not the certainty of the expected benefits can be determined. This lack of specificity is due to two reasons: First, the lack of clearly defined product(s) from this proposal precludes any assessment of benefits to be derived therefrom. The only indication in the text states that the "outcome of this investigation will establish guidelines for remediation in other abandoned and inactive mine sites in the state of California." Second, although acid mine drainage contamination in the aquatic environment has been well documented as a causative agent in the decline of a wide range of aquatic organisms in other systems, the extent to which the Newton Copper Mine acid mine runoff affects San Joaquin River drainage species is unknown. The mine runoff drains into Copper Creek, approximately « mile downstream from the mine. Copper Creek runs another 1-1/2 miles to its confluence with Sutter Creek, which flows west to Dry Creek, a tributary of the Mokelumne River. Minimal data are presented on conditions either in the runoff or in the receiving waters. Pilot tests were conducted to test the frequency of the remediation techniques on the Norton Mine tailings; the limited data presented indicate the pH of the runoff from the tailings ranged from ~2.0 to <3.0 pH, and that the discharge has adversely affected wetland habitats in the vicinity of the mine. The Newton Mine exists under Cleanup and Abatement Order No. 98-178 issued May 20, 1998, by the Central Valley Regional Water Quality Control Board. The objective of this proposal is to conduct an on-site full-scale pilot demonstration of the "passivation process" for the remediation and restoration of the inactive acid-generating Newton Copper Mine site. The mining waste contains sulfide minerals which oxidize to produce acid mine drainage. The passivation process creates an inert layer on the sulfides by contacting the sulfide with a basic permanganate solution to produce an inert manganese-ion oxide layer. This layer prevents contact with atmospheric oxygen during weathering of the sulfide rock, thus preventing sulfuric acid generation. Another critical element of the process is the addition of trace amounts of magnesium oxide during pH adjustment which enhances the coating process. The proposal is designed to analyze the effectiveness of two variations of the passivation process - the DuPont version and the University of Nevada, Reno version. Pads will be constructed onsite to hold 50-100 tons each of mine waste tailings. One pad will be a control, one will be a demonstration pad for the DuPont passivation process and one will be a demonstration pad for the University of Nevada, Reno, passivation process. Leachate from each pad will be collected and analyzed for various parameters over a 12-month process. The proposal will conclude all work within two years. Therefore, the immediacy of the expected contribution (i.e. remediation guidelines) will be realized two years after the work in the proposal is initiated. The duration of the expected contribution cannot be determined until the research is completed.*

1j. List the threatened or endangered species that are expected to benefit from the project. Specifically identify the status of the species and races of anadromous fish that are expected to benefit from the project, any other special-status species that are expected to benefit, and the ecological community or multiple-species benefits that are expected to occur as a result of implementing the project.# San Joaquin River fall-run chinook salmon might benefit from the project. The extent of the existing problem is not defined, making identification of potential beneficiary species virtually impossible. The proposal refers to the negative impact of the runoff on wetlands habitat adjacent to the mine, but no affected species are identified. Presumably, species at various trophic levels in the aquatic food web of Copper Creek have been, or are potentially in danger of being, exposed to the

deleterious conditions associated with the acid mine drainage. These species should benefit from the anticipated reductions in the acid mine drainage that would occur as a result of this proposal.*

1k. Identify if and describe how the project protects and restores natural channel and riparian habitat values. Specifically address whether the project protects and restores natural channel and riparian habitat values, whether the project promotes natural processes, and the immediacy and duration of benefits to natural channel and riparian habitat values.# The project could restore both natural channel values and promote natural processes. The project is designed to develop information that could be used later to reduce the Newton Copper Mine acid mine drainage into Copper Creek. This reduction in toxic contaminants would restore natural food web relationships in Copper Creek downstream from the mine and in wetlands adjacent to the mine that have been negatively affected by the presence of the contaminants. The immediacy of the benefits to the natural channel values will not be realized for at least two years following initiation of work on the proposal when some type of acid mine drainage remediation guidelines will be completed. The duration of the expected contribution cannot be determined until the research is completed.*

1l. Identify if and how the project contributes to efforts to modify CVP operations. Identify the effort(s) to modify CVP operations to which the proposed project would contribute, if applicable. Efforts to modify CVP operations include modifications to provide flows of suitable quality, quantity, and timing to protect all life stages of anadromous fish as directed by Section 3406 (b)(1)(B) of the CVPIA, including flows provided through management of water dedicated under Section 3406(b)(2) and water acquired pursuant to Section 3406(b)(3).# No evidence is presented to indicate whether/how the project would contribute to efforts to modify CVP operations. No such relationship is apparent.*

1m. Identify if and how the project contributes to implementation of the supporting measures in the CVPIA. Identify the supporting measure(s) to which the proposed project would contribute, if applicable. Supporting measures include the Water Acquisition Program, the Comprehensive Assessment and Monitoring Program, the Anadromous Fish Screen Program, and others.# The project does not obviously contribute to implementation of the supporting measures in the CVPIA.*

1n. Summarize comments from section 1i through 1m related to applicability to CVPIA priorities (if applicable, identify the CVPIA program appropriate to consider as the source of CVPIA funding [for example, the Anadromous Fish Restoration Program, Habitat Restoration Program, Water Acquisition Program, Tracy Pumping Plant Mitigation Program, Clear Creek Restoration Program, Comprehensive Assessment and Monitoring Program, and Anadromous Fish Screen

Program]). Identify the strengths and weaknesses of the proposal, highlighting the applicability of the proposed project to CALFED and CVPIA goals and priorities. Focus on aspects of the proposal that may be important to later stages in the project review and selection process.# This project is appropriate for funding support from the Anadromous Fish Restoration Program. The project could contribute to meeting the goal of the Anadromous Fish Restoration Program to increase the natural production of anadromous fish by reducing the toxic affects of Newton Copper Mine acid mine drainage on Copper Creek, which is in the Mokelumne River watershed, and in wetlands adjacent to the mine. The proposal intends to develop remediation guidelines that can be applied to various mines in California that currently experience acid mine drainage problems. The proposal is consistent with Central Valley-Wide Action No.3 (Reduce toxic chemical and trace element.) in the Revised Draft Restoration Plan for the Anadromous Fish Restoration Program, May 30, 1997; this is identified as a high priority in the draft plan. The strength of the proposal is that the entire process from evaluation of the problem to the development of potential solutions will be done in one contiguous effort and under the singular control of one program manager. The weakness of the proposal is that it will only produce recommendations for remediation. There is no guarantee if/when funding of the remediation work will be secured.*

RELATIONSHIP TO OTHER ECOSYSTEM RESTORATION PROJECTS

2a. Did the applicant explain how the proposed project relates to other past and future ecosystem restoration projects, as required on page 57 in the PSP? Type in yes or no.#yes*

2b. Based on the information presented in the proposal and on other information on restoration projects available to CALFED and CVPIA staff, describe how the proposed project complements other ecosystem restoration projects, including CALFED and CVPIA. Identify projects or types of projects that the proposed project would complement, now or in the future. Identify source of information.#Project provides benefits for CALFED objective to reduce load of toxic pollutants from mines and improve water quality in the Mokelumne River watershed. Complements other CALFED projects designed to reduce mining pollutants (99B06) and improve watershed management in the Mokelumne River (99C02,99N15, 98E12). This is the next phase of a project in which the first phase was funded by University of Nevada, Reno. Information source: Proposal and CALFED tracking table.*

RESULTS AND PROGRESS ON PREVIOUSLY FUNDED CALFED AND CVPIA PROJECTS, INCLUDING REQUESTS FOR NEXT-PHASE FUNDING

3a1. Based on the information presented in the proposal and on project reports and data available to CALFED and CVPIA staff, has the applicant previously received CALFED or CVPIA funding? Type CALFED, CVPIA, both, or none.#none*

3a2. If the answer is yes, list the project number(s), project name(s) and whether CALFED or CVPIA funding. If the answer is none, move on to item 4. If the answer is no, move on to item 4. #*

3b1. Based on the information presented in the proposal and on project reports available to CALFED and CVPIA staff, did the applicant accurately state the current status of the project(s) and the progress and accomplishments of the project(s) to date? Type yes or no.#

3b2. If the answer is no, identify the inaccuracies:#

3c1. Has the progress to date been satisfactory? Type yes or no.#*

3c2. Please provide detailed comments in support of your answer, including source of information (proposal or other source):#

REQUESTS FOR NEXT-PHASE FUNDING
3d1. Is the applicant requesting next-phase funding? Type yes or no.#no*

3d2. If the answer is yes, list previous-phase project number(s) here. If the answer is no, move on to item 4.#

3e1. Does the proposal contain a 2-page summary, as required on pages 57 and 58 of the PSP? Type yes or no.#

3e2. Based on the information presented in the summary and on project reports available to CALFED and CVPIA staff, is the project ready for next-phase funding? Type yes or no.#

3e3. Please provide detailed comments in support of your answers, including source of information (proposal or other source):#

LOCAL INVOLVEMENT
4a. Does the proposal describe a plan for public outreach, as required on page 61 of the PSP? Type yes or no.# No. Rather a combination of a brief mention of a plan and a reference to some points of contact where local environmental groups, conservancies, and local land owners will be notified to ensure awareness of the project and its associated impacts. The plan for public outreach

will include the posting of public notices to concerned parties and public meetings conducted by the Amador County Board of Supervisors and the Amador County Resource Conservation District.
Some local/county government entities and elected officials have been notified.*

4b. Based on the information in the proposal, highlight outstanding issues related to support or opposition for the project by local entities including watershed groups and local governments, and the expected magnitude of any potential third-party impacts.# No opposition to the proposal is identified. Support for the proposal was presented in the form of letters of support from the Office of the General Services Administration and U.S. Representative John Doolittle. California Senator Tim Leslie was identified as having given his support to the proposal, but no letter substantiating his support was presented.*

ENVIRONMENTAL COMPLIANCE

4d. List any potential environmental compliance or access issues as identified in the PSP checklists.# Needs to comply with CEQA to determine impacts for terrestrial species and determine effects of groundwater and species in case of leakage from tanks.*

4e. Specifically highlight and comment on any regulatory issues listed above that may prevent the project from meeting the projected timeline.#None*

COST

5a. Does the proposal include a detailed budget for each year of requested support? Type yes or no.# Yes, for both years*

5b. Does the proposal include a detailed budget for each task identified? Type yes or no.# Yes*

5c. Is the overhead clearly identified? Type yes or no.# Yes, overhead is at 44.3%*

5d. Are project management costs clearly identified? Type yes or no.# Yes*

5e. Please provide detailed comments in support of your answers to questions 5a - 5d.# All information requested has been provided by project proponent in a clear, concise, and understandable format*

COST SHARING

6a. Does the proposal contain cost-sharing? Type yes or no.# No*

6b. Are applicants specifically requesting either state or federal cost share dollars? Type state, federal, or doesn't matter.# Doesn't matter*

6c. List cost share given in proposal and note whether listed cost share is identified (in hand) or proposed.

6c1. In-kind:# n/a*

6c2. Matching funds:# n/a*

6c3. Show percentage that cost sharing is of total amount of funding requested along with calculation.# n/a*

6d. Please provide detailed comments in support of your answers to questions 6a - 6c3.# n/a*