

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – DIVISION OF FINANCIAL ASSISTANCE
AUGUST 20, 2013**

ITEM 6

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION TO ALLOCATE \$417,500 FROM THE CLEANUP AND ABATEMENT ACCOUNT (CAA) TO THE CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (CENTRAL VALLEY WATER BOARD) FOR PARTIAL RECONSTRUCTION OF THE FINAL COVER AND REMEDIATION OF ACIDIC LEACHATE IN THE PENN MINE LANDFILL (PROJECT)

DISCUSSION

The Central Valley Water Board is requesting \$417,500 from the CAA to address higher than expected volumes of acidic, high-metals concentration leachate generated by the Penn Mine Landfill in Calaveras County. The proposed solution to reduce the volume of leachate is to seal the landfill final cover to the liner geomembrane to prevent surface water infiltration.

Penn Mine is an abandoned copper and zinc mine that operated intermittently from the 1860s through the 1950s and is situated adjacent to Mokelumne River and Comanche Reservoir. In the 1960s, East Bay Municipal Utility District (EBMUD) acquired part of the Penn Mine property to build the Camanche Reservoir. In 1978, EBMUD and the Central Valley Water Board constructed a remediation project in an attempt to reduce the impacts caused by acid mine drainage from the abandoned mine. Subsequently, the Central Valley Water Board and EBMUD were found jointly responsible under the Clean Water Act for the acid mine drainage due to their operation of the remediation project. (*Committee To Save Mokelumne River v. East Bay Mun. Utility Dist.* (9th Cir. 1993) 13 F.3d 305.)

The Central Valley Water Board has previously expended approximately \$6,543,000 from the CAA between 1995 and 2001 for activities at the Penn Mine site. A total of \$7,225,000 has previously been allocated from the CAA through State Water Board Resolutions [No. 95-14](#), [No. 98-001](#) and [No. 2001-008](#) for the following activities: preparation of an Environmental Impact Report; operation of a wastewater treatment system; landfill design and construction; excavation and disposal of mine waste; landfill closure; post-closure monitoring and other activities; revegetation; and stream restoration.

The Penn Mine Landfill was designed and constructed by OHM Remediation Services Corporation (OHM) in 1998 under contract with EBMUD with a cost sharing agreement with the Central Valley Water Board. Shaw Environmental & Infrastructure, Inc. (Shaw) later purchased OHM. The design included an overlap of the final cover with the liner system of approximately seven feet from the outside edge of the cover geomembrane and the interior slope of the liner geomembrane. Final covers that overlapped the liners were standard landfill design in 1998, and this design was reviewed and approved by Central Valley Water Board staff and EBMUD staff. Current design practice is to weld the final cover geomembrane to the liner geomembrane, as is proposed for the Penn Mine Landfill.

The landfill has generated more leachate than originally anticipated. Leachate volumes spiked immediately after rainfall events, indicating a significant source of surface water entry into the landfill. Shaw conducted an investigation in 2012 and submitted a January 18, 2013 *Investigation Summary Report & Recommendations Report*; which concluded that the most likely source of the high volume of leachate was surface water entering through the gap between the cover and the liner despite the designed overlap of the cover system with the underlying liner system. In the report, Shaw recommended performing additional work to weld the final cover geomembrane to the liner geomembrane and to reconstruct the radial drain around the landfill perimeter to eliminate the potential source of surface water into the landfill.

The leachate is highly acidic and contains high concentrations of metals due to contact with the acid-generating mine waste rock in the landfill. Leachate buildup on the landfill liner system is a threat to underlying groundwater quality. The costs for leachate removal, transportation, and disposal will continue until the source of the leachate is abated.

The funds requested from CAA will be used for 1) sealing the final cover geomembrane to the liner geomembrane to prevent surface water infiltration into the landfill; 2) reconstructing the radial drain around the landfill perimeter; 3) installing an upslope trench to route surface water away from the landfill; 4) applying seed and binder to cover soil to reestablish vegetation, and 5) third party oversight costs.

The overall project costs are estimated at \$1,235,000, which is based on a cost estimate submitted by Shaw. This cost estimate includes a 20% contingency, as well as third-party oversight costs to ensure the project meets construction quality assurance requirements. The proposed project would be implemented by Shaw. The Central Valley Water Board and EBMUD will each contribute \$417,500 to fund the project. Additionally, Shaw is expected to pay approximately one third of the project costs (\$400,000) in exchange for modifications to their current contract with EBMUD for the removal, transport, and disposal of the leachate. The Central Valley Water Board expects that the change order to the existing agreement will be finalized in the near future.

The Central Valley Water Board supports the funding request and adopted [Resolution No. R5-2013-0053](#) in May 2013 to request that the State Water Board approve funding from the CAA for the Project.

The State Water Board established Program Preferences for CAA funds based on statewide priorities and Strategic Goals outlined in the Strategic Plan Update 2008-2012. The Project meets the following CAA program preference:

- Preference # 6: Cleanup and/or abatement of contaminated site when the viable responsible party has not been identified.

The requested allocation is consistent with the purposes of Water Code Section 13442. Section 13442 provides that the State Water Board may order monies to be paid from the CAA to a public agency and certain not-for-profit organizations and tribal governments that serve disadvantaged communities, and have the authority to cleanup or abate the effects of a waste in order “to assist it in cleaning up the waste or abating its effects on the waters of the state.”

POLICY USE

Should the State Water Board:

1. Approve \$417,500 from the CAA to fund the Project?
2. Approve the funding with the expectation that if the agreement has not been executed by March 31, 2014, the Executive Director will bring this item back to the State Water Board in May 2014 for possible rescission of funding?
3. Make the funds available until March 31, 2015, and revert any unexpended funds to the CAA as of June 30, 2015, unless the Deputy Director or Assistant Deputy Director of the Division of Financial Assistance authorizes an extension?

FISCAL IMPACT

According to the most current data, the uncommitted CAA balance is estimated to be no less than \$8.7 million.

REGIONAL WATER BOARD IMPACT

Yes, the Central Valley Water Board staff will oversee the Project as Contract Manager and will review and have final approval over all Project Deliverables.

STAFF RECOMMENDATION

The State Water Board should adopt the proposed Resolution.

State Water Board action on this item will assist the Water Boards in reaching Goal 2 of the Strategic Plan Update: 2008-2012, to improve and protect groundwater quality in high-use basins by 2030.

DRAFT

STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2013-

ALLOCATE \$417,500 FROM THE CLEANUP AND ABATEMENT ACCOUNT (CAA) TO THE CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD (CENTRAL VALLEY WATER BOARD) FOR PARTIAL RECONSTRUCTION OF THE FINAL COVER AND REMEDIATION OF ACIDIC LEACHATE IN THE PENN MINE LANDFILL (PROJECT)

WHEREAS:

1. The Central Valley Water Board is requesting \$417,500 from the CAA to address acidic, high-metals concentration leachate generated by the Penn Mine Landfill in Calaveras County;
2. Penn Mine is an abandoned copper and zinc mine that operated intermittently from the 1860s through the 1950s and is situated adjacent to Mokelumne River and Comanche Reservoir;
3. In 1978, East Bay Municipal Utilities District (EBMUD) and the Central Valley Water Board constructed a remediation project in an attempt to reduce the impacts caused by acid mine drainage from the abandoned mine;
4. Subsequently, the Central Valley Water Board and EBMUD were found jointly responsible under the Clean Water Act for the acid mine drainage due to their operation of the remediation project;
5. A total of \$7,225,000 has previously been allocated from the CAA to the Penn Mine Site through Resolutions [No. 95-14](#), [No. 98-001](#) and [No. 2001-008](#). From this amount, the Central Valley Water Board expended \$6,543,024 for the following activities: preparation of an Environmental Impact Report; operation of a wastewater treatment system; landfill design and construction; excavation and disposal of mine waste; landfill closure; post-closure monitoring and other activities; revegetation; and stream restoration;
6. The landfill has generated more leachate than originally anticipated, posing a threat to underlying groundwater quality and resulting in considerable costs for the removal, transportation, and disposal of the leachate;
7. An investigation conducted in 2012 by Shaw Environmental & Infrastructure, Inc. (Shaw) concluded that the most likely source of the high volume of leachate was surface water entering through the gap between the cover and the liner despite the designed overlap of the cover system with the underlying liner system;
8. Welding the final cover geomembrane to the liner geomembrane and reconstructing the radial drain around the landfill perimeter is expected to eliminate the potential source of surface water into the landfill;

DRAFT

9. The funds requested will be used for 1) sealing the final cover geomembrane to the liner geomembrane to prevent surface water infiltration into the landfill; 2) reconstructing the radial drain around the landfill perimeter; 3) installing an upslope trench to route surface water away from the landfill; 4) applying seed and binder to cover soil to reestablish vegetation, and 5) third party oversight costs;
10. Total project costs including third party oversight are estimated at \$1,235,000. The Central Valley Water Board and EBMUD will each contribute \$417,500 to fund the project. Additionally, it is expected that Shaw will also pay approximately one third of the project costs (\$400,000) in exchange for modifications to their current contract with EBMUD for the leachate removal, disposal, and transportation; and
11. The requested allocation is consistent with the purposes of the Water Code section 13442. Water Code section 13442 provides that the State Water Resources Control Board (State Water Board) may order monies to be paid from CAA to a public agency with the authority to cleanup or abate the effects of a waste in order "to assist it in cleaning up the waste or abating its effects on waters of the state."

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves \$417,500 from the CAA to fund the Project.
2. Approves the funding with the expectation that if the agreement has not been executed by March 31, 2014, the Executive Director will bring this item back to the State Water Board in May 2014 for possible rescission of funding.
3. Shall make the funds available until March 31, 2015, and revert any unexpended funds to the CAA as of June 30, 2015, unless the Deputy Director or Assistant Deputy Director of the Division of Financial Assistance authorizes an extension.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on August 20, 2013.

Jeanine Townsend
Clerk to the Board