

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – DIVISION OF FINANCIAL ASSISTANCE
MAY 7, 2013**

ITEM 4

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION TO ALLOCATE \$252,070 FROM THE CLEANUP AND ABATEMENT ACCOUNT (CAA) TO THE CITY OF TURLOCK (CITY) FOR IMPROVING REMEDIATION OF PERCHLOROETHYLENE (PCE) IN GROUNDWATER (PROJECT)

DISCUSSION

The City is requesting a total amount of \$252,070 from the CAA to continue and improve groundwater remediation of PCE for an additional three years. The requested funding amount would be used to: 1) modify the groundwater remediation system, thereby increasing the PCE removal rate; 2) provide for the continued operation and maintenance of the groundwater extraction and treatment system for an additional three years; and 3) abandon monitoring wells that are no longer necessary.

Technical and Regulatory Background

Several dry cleaning facilities were formerly located near the downtown area of the City in Stanislaus County. The historic dry cleaning operations at those facilities resulted in the release of PCE into soil and groundwater. The PCE pollution has impacted the groundwater and has adversely affected the beneficial use of the groundwater as a municipal water supply. The source was never conclusively determined, so in 2009 the City volunteered to lead the cleanup effort. The State Water Resources Control Board (State Water Board) has previously provided \$786,000 from the CAA for this project. The City relies upon the groundwater for its municipal water supply.

In 1994, the City, the California Department of Toxic Substances Control, and the Central Valley Water Board entered into an "Agreement for PCE Investigation and Removal in Turlock", wherein the City agreed to investigate and remediate the PCE pollution and the parties agreed to work cooperatively to obtain funding for these activities. As part of the Agreement, the City abandoned a number of municipal supply wells in the downtown area. Furthermore, the City adopted a Groundwater Management Plan, which included a wellhead protection plan.

The City has contributed approximately \$1.4 million thus far with previous PCE investigation and remediation efforts in partnership with the Central Valley Water Board. The City will also contribute an additional \$91,296 in City staff labor over the course of this three year project.

In June 2002, the City received \$136,000 from CAA ([Resolution No. 2002-0124](#)) to implement a pilot study to remediate groundwater contamination from PCE and Trichloroethylene (TCE).

In January 2009, the City received an additional \$650,000 from CAA ([Resolution No. 2009-0003](#)) for the continued investigation and remediation of PCE plumes in downtown Turlock.

In 2011, the City started an extraction and treatment system to capture, contain, and remove PCE from the groundwater plume. The groundwater extraction and treatment system consists of one extraction well and a network of monitoring wells. The extracted groundwater is treated through an air stripper which discharges the volatile organic compounds (VOCs) to the atmosphere under an air permit and the treated groundwater is discharged to the sanitary sewer. The system is currently designed to extract groundwater at a rate of up to 40 gallons per minute (gpm) but is limited to about 25 gpm due to the high VOC influent concentrations and air permit discharge limitations.

Since startup of the system in late 2011, the extracted groundwater has consistently contained concentrations of PCE over 1,000 micrograms per liter ($\mu\text{g/L}$) and the City has pumped approximately 15.5 million gallons and removed over 133 pounds of PCE from the groundwater.

A capture zone analysis has not been conducted and the endpoint for this groundwater cleanup cannot be determined at this time. Influent concentrations of PCE into the treatment system have been stable but have not declined. For the past year, the City has been operating the groundwater extraction and treatment system with its own funds but has lacked additional funding to optimize the system or confirm its effect on the groundwater plume. The requested CAA funding would allow the City to increase the mass removal of PCE. Specific improvements to the remediation system would include the addition of a vapor phase carbon treatment to the air stripper exhaust to allow for greater PCE mass removal without exceeding air emission permit limits. The continued operation and maintenance of the extraction and treatment system is estimated to remove the bulk of the PCE mass in groundwater and stabilize the remaining plume, preventing it from posing a continued threat to the City's municipal water supply. Part of the additional funding would also be used to conduct confirmation sampling to determine the extraction system's effect on the PCE groundwater plume and determine the remaining duration of the cleanup efforts.

The requested allocation is consistent with the purposes of Water Code section 13442. Water Code 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 ISSUES

Should the State Water Board:

1. Approve \$252,070 from the CAA to fund the Project?
2. Approve the funding with the expectation that if the agreement has not been executed by November 30, 2013, the Executive Director will bring this item back to the State Water Board in January 2014 for possible rescission of funding?
3. Make the funds available until January 30, 2017, and revert any unexpended funds to the CAA as of March 30, 2017, unless the Deputy Director or Assistant Deputy Director of the Division of Financial Assistance authorizes an extension?

FISCAL IMPACT

The current uncommitted CAA balance is estimated to be no less than \$8 million.

REGIONAL BOARD IMPACT:

Yes. The Central Valley Water Board will review and approve all Project work prior to implementation, review monitoring and remediation progress reports, conduct inspections, and participate in phone calls and meetings over the three-year time period.

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. It will also assist the Water Boards in reaching Goal 4 of the Strategic Plan Update: 2008-2012, to comprehensively address water quality protection and restoration, and the relationship between water supply and water quality, and describe the connections between water quality, water quantity, and climate change, throughout California's water planning processes.

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STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2013-

ALLOCATE \$252,070 FROM THE CLEANUP AND ABATEMENT ACCOUNT (CAA) TO THE CITY OF TURLOCK (CITY) FOR IMPROVING REMEDIATION OF PERCHLOROETHYLENE (PCE) IN TURLOCK GROUNDWATER (PROJECT)

WHEREAS:

1. The City is requesting a total amount of \$252,070 from the CAA to continue groundwater remediation of PCE within the City;
2. This funding request would be used to expand the treatment system and continue the operation and maintenance for an additional three years;
3. The Regional Water Board has committed to review and approve all Project work prior to implementation, review monitoring and remediation progress reports, conduct inspections, and participate in phone calls and meetings over an estimated three-year time period;
4. Several dry cleaning facilities were formerly located near the downtown area of the City which is located in Stanislaus County. The historic dry cleaning operations at those facilities resulted in the release of PCE into soil and groundwater. The PCE pollution has impacted the groundwater and has adversely affected the beneficial use of the groundwater as a municipal water supply. Financially viable dry cleaners responsible parties were not identified during enforcement efforts undertaken in the early 1990s, so the City applied for monetary assistance from the State Water Resources Control Board's Clean Up and Abatement Account. The City relies upon the groundwater for its municipal water supply;
5. In 1994, the City, the California Department of Toxic Substances Control, and the Central Valley Water Board entered into an "Agreement for PCE Investigation and Removal in Turlock", wherein the City agreed to investigate and remediate the PCE pollution and the parties agreed to work cooperatively to obtain funding for these activities;
6. The City has contributed approximately \$1.4 million thus far with previous PCE investigation and remediation efforts in partnership with the Regional Water Board. The City will also contribute an additional \$91,296 in City staff labor over the course of this three year project;

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7. In June 2002, the City received \$136,000 from CAA ([Resolution No. 2002-0124](#)) to implement a pilot study to remediate groundwater contamination from PCE and Trichloroethylene (TCE);
8. In January 2009, the City received an additional \$650,000 from CAA ([Resolution No. 2009-0003](#)) for the continued investigation and remediation of PCE plumes in downtown Turlock;
9. In 2011, the City started an extraction and treatment system to capture, contain, and remove the PCE from the groundwater plume;
10. Since startup of the system, PCE concentrations in the extracted groundwater have consistently exceeded 1,000 micrograms per liter ($\mu\text{g/L}$), and the City has removed over 100 pounds of PCE from the groundwater;
11. The funds now requested from the CAA would be used to: 1) expand the groundwater remediation system to increase the PCE removal rate; 2) provide for the continued operation and maintenance of the groundwater extraction and treatment system for an additional three years; and 3) abandon monitoring wells that are no longer necessary. Specific improvements to the remediation system will include the addition of vapor phase carbon treatment to the air stripper exhaust to allow for greater PCE mass removal without exceeding air emission permit limits. Part of the additional funding would also be used to conduct confirmation sampling to determine the extraction system's effect on the PCE groundwater plume and determine the remaining duration of the cleanup efforts;
12. Continued operation of the system is expected to remove the bulk of the PCE mass, stabilize the remaining plume, and prevent it from posing a continued threat to the City's municipal water supply; and
13. The requested allocation is consistent with the purposes of Water Code section 13442. Water Code 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."

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves \$252,070 from the CAA to fund the Project.

D R A F T

2. Approves the funding with the expectation that if the agreement has not been executed by November 30, 2013, the Executive Director will bring this item back to the State Water Board in January 2014 for possible rescission of funding.
3. Shall make the funds available until January 30, 2017, and shall revert any unexpended funds to the CAA as of March 30, 2017, 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 May 7, 2013.

Jeanine Townsend
Clerk to the Board