



Fact Sheet
Proposed Cleanup Plan for the
Sunnyvale Town Center Project
Sunnyvale, Santa Clara County

March 2012

The Regional Water Board announces a proposed Cleanup Plan for the eastern portion of the Sunnyvale Town Center Project. The Cleanup Plan proposes the cleanup of tetrachloroethene (PCE) contaminated groundwater by dechlorination and the cleanup of PCE contaminated soil vapor by soil vapor extraction.

We invite any interested persons to comment on the proposed Cleanup Plan. Written comments are due to the Regional Water Board, attention Nathan King, at the above address by April 4, 2012. A public meeting regarding the proposed Cleanup Plan will be held on April 2, 2012, at 6:00 pm at the West Conference Room at City Hall located at 456 West Olive Avenue in Sunnyvale.

Background

The Sunnyvale Town Center Project is located in downtown Sunnyvale in the area bounded by Washington Avenue, Mathilda Avenue, Iowa Avenue, and Sunnyvale Avenue. The Site consists of two areas in the eastern portion of the Sunnyvale Town Center Project (Figures 1 and 2). These are the subject of the Cleanup Plan and are considered to be the Site. The Regional Water Board has issued closure letters for the remainder of the Sunnyvale Town Center Project. The Site will be owned by a private developer (currently owned by lenders) with the City of Sunnyvale owning the parcels

within the Site that will be used for parking structures. The developer intends to develop the Site in cooperation with the City of Sunnyvale with a new, mixed-use development consisting of various commercial, retail and residential buildings, parking, and associated amenities.

Three dry cleaners had been located on the Site, prior to 1978. These dry cleaners, which used PCE (a chlorinated solvent) as a cleaning fluid, are believed to be the source of the PCE contamination at the Site.

The Regional Water Board is the lead agency overseeing the investigation and cleanup at this Site.

Site Investigations

Site investigations conducted from 2007 to 2011 included the collection of soil, soil vapor and groundwater samples. PCE contamination was discovered onsite with contaminants in groundwater migrating offsite, predominantly towards the north-northeast. The contamination is believed to be the result of past releases from the dry cleaners that were located onsite.

Low levels of PCE contamination were detected in onsite soil at concentrations ranging from 5 to 470 parts per billion (ppb).



Elevated levels of PCE were detected in onsite soil vapor. Concentrations have decreased following interim cleanup.

Elevated levels of PCE were detected in onsite groundwater samples with concentrations decreasing with depth. The downgradient extent (to the north) of the PCE contaminated groundwater has been defined (Figure 3). PCE concentrations in groundwater have decreased following interim cleanup.

Drinking water for the area is provided by the City of Sunnyvale from a mix of imported surface water and groundwater from deeper wells in the city. Testing shows that PCE found at the Site has not contaminated the City water system.

A network of soil vapor and groundwater monitoring wells installed on- and off-Site are part of a continuing sampling program to monitor Site conditions.

Completed Interim Cleanup Activities

Early action was taken to address soil vapor and groundwater contamination.

Soil Vapor Cleanup

Two soil vapor extraction (SVE) systems were installed as an interim cleanup in late 2007 and operated through January 2009. The purpose was to remove PCE-contaminated soil vapor. The systems removed over 400 pounds of PCE vapors. Concentrations of PCE in soil vapor decreased significantly during SVE operation. Monitoring of soil vapor continues to verify reductions in concentrations. The current extent of PCE in soil vapor is shown on Figure 2.

Restarting of SVE using two new systems is a component of the Cleanup Plan.

Groundwater Cleanup

Interim groundwater cleanup actions consisted of treating PCE-contaminated groundwater by a process called dechlorination. Areas

targeted for interim groundwater cleanup are shown on Figure 3.

Zero valent iron (ZVI), consisting of iron filings, was injected into the ground using specialized drilling equipment. ZVI cleans up PCE contaminated groundwater by destroying the chemical through dechlorination. This process progressively removes the chlorine atoms leaving harmless end products. Vegetable oil with naturally occurring bacteria that break down PCE was also injected into the groundwater. Vegetable oil provides a food source for the bacteria. These harmless bacteria clean up remaining chemicals not cleaned up by the ZVI, completing the dechlorination process. Regular monitoring of groundwater continues to verify reductions in concentrations. The current extent of groundwater contamination is shown on Figure 3.

Continued groundwater monitoring is a component of the Cleanup Plan.

Proposed Final Cleanup Activities

The Cleanup Plan proposes activation of SVE systems in the northern and southern portions of the Site which, like the interim systems, will continue to reduce concentrations of PCE vapors in soil and which will be protective of occupants of existing and future buildings overlying the Site. A regular monitoring program will verify soil vapor levels and track remediation progress.

The Cleanup Plan proposes to continue to monitor the progress of PCE reduction in groundwater as a result of the prior injection of ZVI, vegetable oil, and bacteria.

The Cleanup Plan proposes engineering controls, as necessary, to further prevent the intrusion of any residual soil vapors into future buildings constructed on the Site. Soil vapor mitigation systems will be installed in newly-constructed buildings if warranted by sampling results at the time of construction. The soil vapor mitigation systems would consist of impermeable vapor barriers installed beneath building foundations, passive

and active sub-foundation venting systems and regular monitoring and sampling programs.

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Regional Water Board Oversight Process

The Regional Water Board oversees more than 3,000 site cleanup cases in the Bay Area. Regional Water Board staff direct investigation or cleanup work and set cleanup standards under Water Code authority. Responsible parties typically propose specific measures, perform the actual work, and submit technical reports documenting task completion.

As part of this process, we circulate key documents, such as draft cleanup plans, to interested persons and provide an opportunity for comment on these documents. Interested persons include other agencies, local officials, non-profit organizations, and interested landowners and residents/occupants in the site vicinity.

Report Availability

Submitted reports for this Site are located on the Water Board's website at:

<http://geotracker.waterboards.ca.gov/search.asp>

The unique case number for this site is 43S1101. Entering this number in the "Advanced Search" mode will retrieve the site database. Click on "Report" and then the "Site Maps/Documents" tab. All submitted reports for this Site will be available at this location. The draft documents for review can be found at the "Community Involvement" tab.

Additionally, submitted reports for the Site are also available for viewing at the Sunnyvale Public Library located at: 665 West Olive Avenue, Sunnyvale; Phone: (408) 730-7300; Regular Hours:

Monday – Wednesday	10 a.m. - 9 p.m.
Thursday - Saturday	10 a.m. - 6 p.m.
Sunday	Noon - 6 p.m.

Contact Information

For additional information on this subject, please contact any of the following individuals.

Regional Water Quality Board contact:
Nathan King, at (510)-622-3966, e-mail: nking@waterboards.ca.gov.

Project technical consultant: Russell Juncal, Ground Zero Analysis, at (530) 475-3863, e-mail: rjuncal@groundzeroanalysis.com

City of Sunnyvale contact: Mark Rogge, (408) 730-7426, e-mail: MRogge@ci.sunnyvale.ca.us.

Downtown Hotline:
(408) 737-4900
www.downtown.inSunnyvale.com.



Figure 1 – Sunnyvale Town Center Mall Location

 Parcels subject to remedial action plan

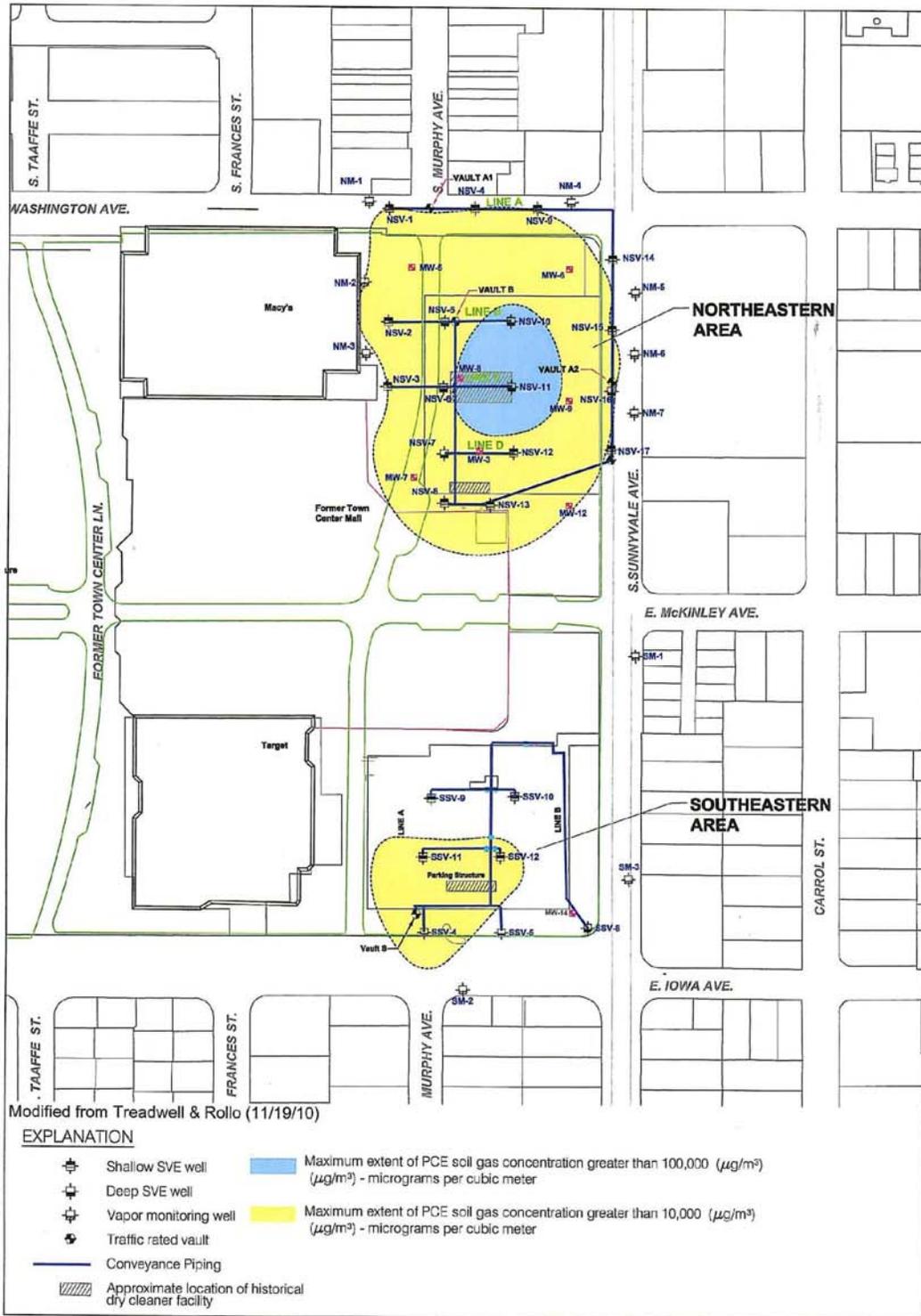


Figure 2 – PCE Soil Vapor Concentrations and SVE System Locations

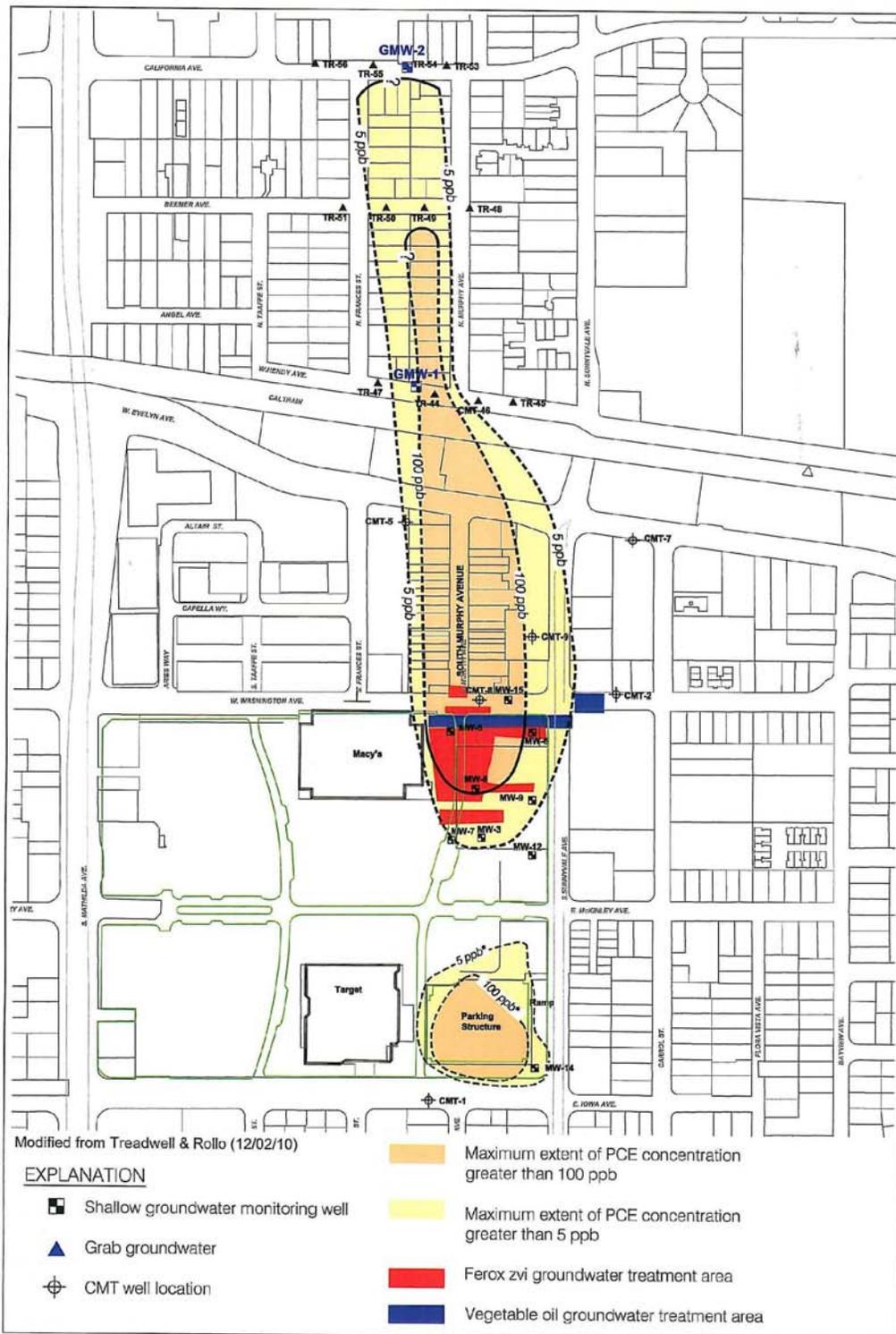


Figure 3 –Groundwater Treatment Areas and PCE Groundwater Concentrations