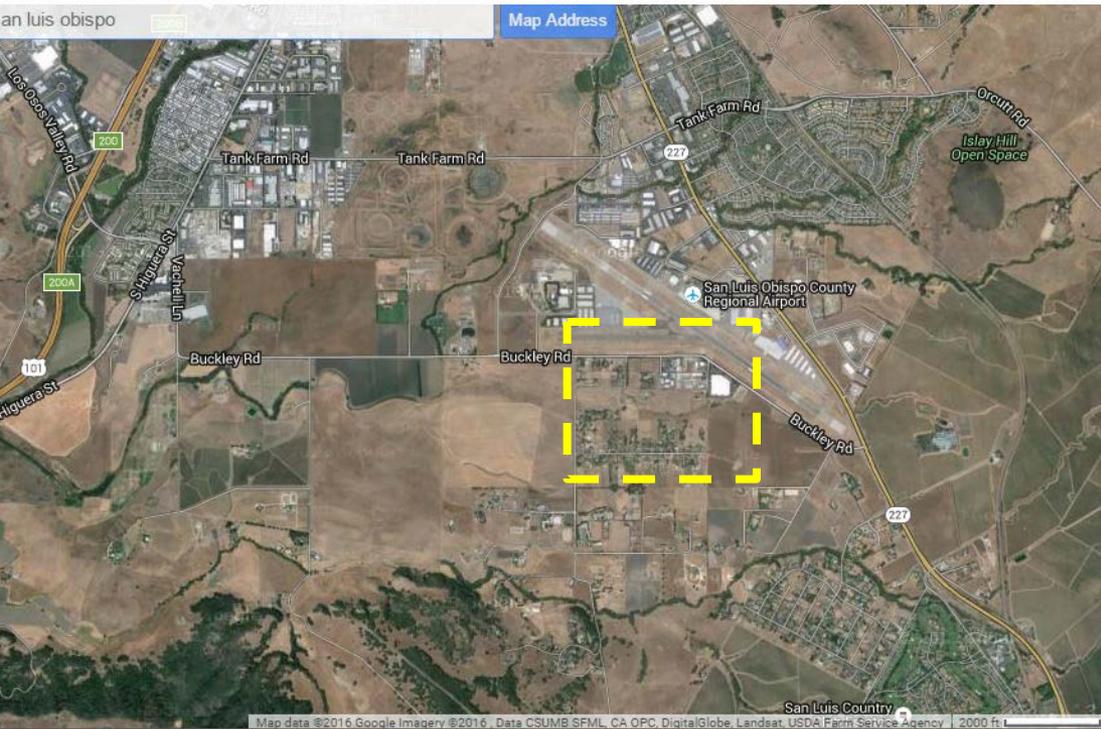


Community Meeting: TCE in the Buckley Road Area



John M. Robertson, PG

Central Coast Regional Water Quality Control Board
February 4, 2016

Meeting Overview

- 1) Background and meeting's purpose
- 2) Agency roles
- 3) Introductions
- 4) TCE health effects
- 5) Effective water system treatment for TCE
- 6) Discuss well results and TCE source investigations
- 7) Next steps
- 8) Contacts and Questions

Background Information

- 1) TCE in drinking water
- 2) 2013 Golden State Water Co. letter
 - Assembled the Water Board team
- 3) We investigated our files and available groundwater databases
- 4) Our focus is on finding the TCE source and providing information to the community

Meeting's Purpose

- 1) Part of a larger Outreach effort
- 2) Provide information to the Community
- 3) Listen/Understand Community needs
- 4) Ongoing communication
- 5) You have resources
- 6) Answer Questions

Agency Roles at Buckley Road

- 1) Central Coast Water Board
 - Requires assessment and cleanup for industrial spills and leaks
 - Can require responsible party to provide replacement water for those impacted by water pollution
- 2) State Water Board, Division of Drinking Water
 - Regulates large drinking water systems (> 200 connections)
- 3) SLO County Public Health
 - Regulates smaller drinking water systems
- 4) Single-family home, private well (domestic well) water quality is largely unregulated

Water Board's Team

- 1) John Robertson, Groundwater group manager
- 2) Thea Tryon, Senior hydrogeologist
- 3) Dean Thomas, Project lead hydrogeologist
- 4) Sarah Treadwell, geologist
- 5) Kurt Souza, Regional Engineer
 - Drinking Water Division
- 6) Tim Moran
 - Public Info/Media

SLO County Public Health's Team

- 1) Dr. Penny Borenstein
 - SLO County Public Health Officer
- 2) Dr. Borenstein will introduce her team

Health Effects of TCE

Dr. Penny Borenstein

- SLO County Public Health Officer

Effective Treatment Methods for TCE

Kurt Souza

- State Water Board's Division of Drinking Water

Buckley Road area TCE Investigation



KURT SOUZA

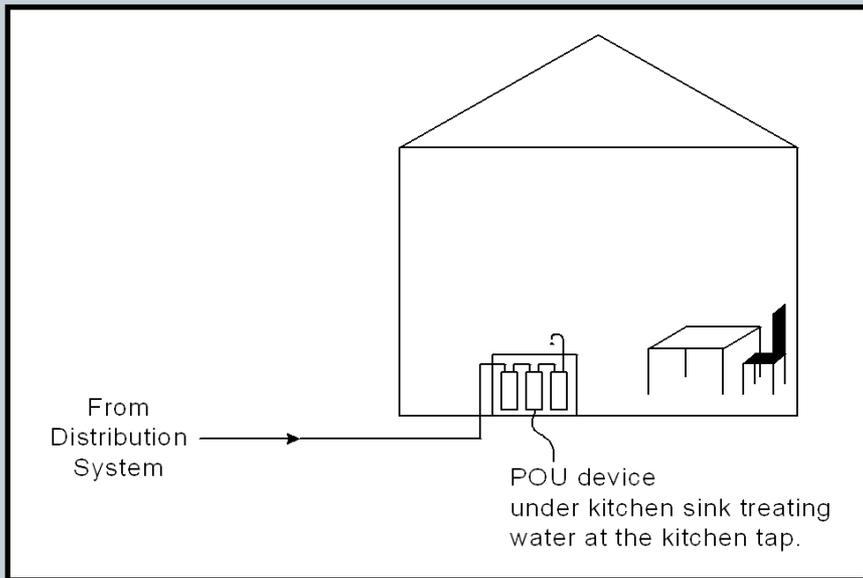
**STATE WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER**

Types of Treatment

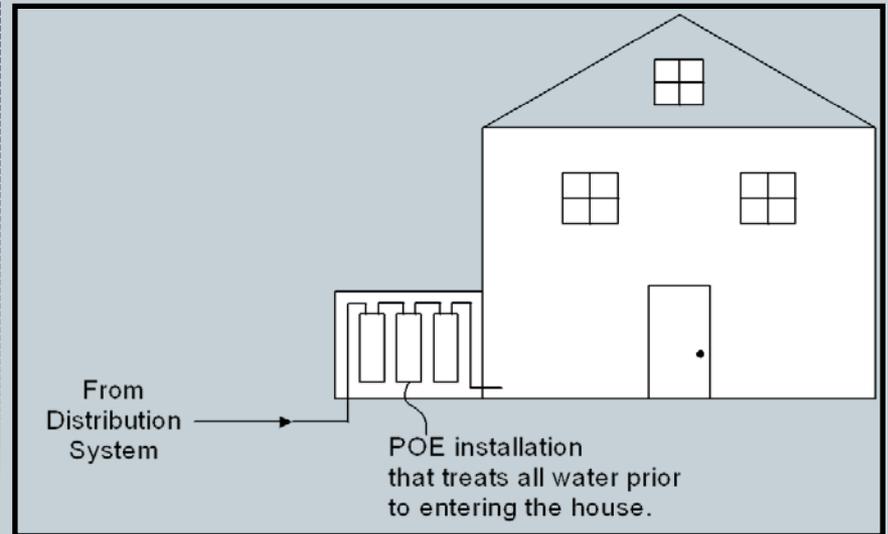


- **Where to locate your treatment**
- **Why do you treat**
- **What type of treatment is recommended**

POU or POE?



Treats water at a single tap.



Treats all water entering a building

POU or POE?



Health Risks



- Drinking, cooking
- Showering
- Washing dishes, cloths
- Handwashing

- Trichloroethylene (TCE)
 - PHG = 1.7 ppb
 - ✦ The PHG was set at a level providing a *de minimis* theoretical lifetime excess individual cancer risk of one in one million (10^{-6}) through ingestion of tap water, plus an allowance for inhalation and dermal exposures to TCE via **showering**, flushing of toilets, and other typical household uses of tap water.
 - MCL = 5 ppb; 4.67 x 1,000,000 risk factor

What type of Treatment



- Granular Activated Carbon-Best Available Technology
- Carbon filtration
- NSF approved for VOC (Volatile Organic Carbon) Reduction – NSF 53 Health Effects, ~~NSF 42 Aesthetics~~
 - POU are approved
 - POE - recommend approved materials
- RO does not remove VOC but a post carbon filter along with the RO unit can be very effective and listed.
- Brita pour through filters are not listed but faucet mounted are listed as approved for VOC reduction.
- Filters usually last 4 to 6 months, depends on usage
- Sampling?
 - Prior to replacement of filter (GAC)

VOC Reduction-POU- NSF 53



7.2.4.1 VOC reduction claims

Claims for chemical reduction may be made for the group of organic chemicals shown in Table 10 when tested in accordance with 7.2.4. The system shall reduce the arithmetic mean of the influent concentrations of chloroform at $300 \pm 30 \mu\text{g/L}$ at each sample point by at least 95%.

NOTE – The use of chloroform as the surrogate is limited to systems using an activated carbon filter component to accomplish the organic chemical reduction.

By passing the surrogate test, the manufacturer may claim to have an equivalent influent concentration of 0.081 mg/L or 81 ppb.

The reduction rate is greater than 99% and the maximum effluent concentration is 0.001 mg/L or 1 ppb.

VOC NSF 53 surrogate testing



Table 10 – Organic chemicals included by surrogate testing

Chemical	Drinking water regulatory level ¹ (MCL/MAC) mg/L	Influent challenge concentration ² mg/L	Chemical reduction percent	Maximum product water concentration mg/L
1,2,4-trichlorobenzene	0.07	0.160	> 99	0.0005 ³
1,1,1-trichloroethane	0.2	0.084	95	0.0046 ⁴
1,1,2-trichloroethane	0.005	0.150	> 99	0.0005 ³
trichloroethylene	0.005	0.180	> 99	0.0010 ³
trihalomethanes (includes):				
chloroform (surrogate chemical) bromoform bromodichloromethane chlorodibromomethane	0.080	0.300	95	0.015
xylene (total)	10	0.070	> 99	0.001 ³

¹ These harmonized values were agreed upon by representatives of USEPA and Health Canada for the purpose of evaluating products to the requirements of this Standard.

² Influent challenge levels are average influent concentrations determined in surrogate qualification testing.

³ Maximum product water level was not observed but was set at the detection limit of the analysis.

⁴ Maximum product water level is set at a value determined in surrogate qualification testing.

⁵ Chemical reduction percent and maximum product water level calculated at chloroform 95% breakthrough point as determined in surrogate qualification testing.

⁶ The surrogate test results for heptachlor epoxide demonstrated a 98% reduction. These data were used to calculate an upper occurrence concentration that would produce a maximum product water level at the MCL.

NSF 53 Listing Example



Brand Name / Trade Name / Model	Element (gallons) (gpm)			Claim
Plumbed-In ProSeries POU	38675	750	.75	Asbestos Reduction Chlordane Reduction Cyst Reduction Lead Reduction MTBE Reduction Mercury Reduction PCB Reduction Toxaphene Reduction Turbidity Reduction VOC Reduction **

Thank you for your attention



QUESTIONS

Well Sampling Results and Source Investigation

Dean Thomas

- Central Coast Water Board

Next Steps and the Path Forward

Technical Steps:

1. Requiring source investigation at the airport – including new groundwater data
2. Continue well sampling on case-by-case basis
 - Define outer extent of plume
3. Continue notifying well owners/users of results

Next Steps and the Path Forward

Outreach/Communication Steps:

1. Future Community meetings
 - Timing and frequency?
2. Email subscription (lyris) and public notice updates
3. Forthcoming project web page
 - Links to more info.



Central Coast Regional Water Quality Control Board

PUBLIC NOTICE

Trichloroethylene Groundwater Investigation

Buckley Road Area in San Luis Obispo County

January 5, 2016

The Water Board is providing this information to landowners, residents/occupants, tenants, and interested parties about the Water Board's investigation of trichloroethylene in groundwater in the Buckley Road area of San Luis Obispo.

El Consejo Regional de la Costa Central para el Control de Calidad de Agua (Central Coast Regional Water Quality Control Board) está proporcionando esta notificación a propietarios, inquilinos e interesados acerca de nuestra investigación del químico "trichloroethylene" encontrado en aguas subterráneas en el área de "Buckley Road" en San Luis Obispo. Si desea obtener información en español, póngase en contacto con Hector Hernandez al (805) 542-4641.

The Central Coast Regional Water Quality Control Board (Water Board) is a state regulatory agency with the responsibility for protecting the quality of the waters of the state within its area of jurisdiction. We are the current lead agency to oversee the investigation of trichloroethylene (TCE) in groundwater and drinking water wells in the Buckley Road/Thread Lane/Davenport Creek Road/Evans Road/Angle Lou Lane/Three Sisters Road area. The purpose of this notice is to provide you with information on groundwater testing and our investigation to identify the source of trichloroethylene (TCE) in this area's groundwater. We also plan to host an informational public meeting at the beginning of February when additional well test results and additional environmental information are available. A separate notice will be sent out to provide details on the time and place of the meeting. Prior to the meeting, we will contact individual well users in the Buckley Road area to discuss their well results, the groundwater investigation, and provide answers to any other questions they may have related to TCE in the area. Additionally, for residences/property owners that had their wells tested between December 28 and December 31, 2015, we will provide the test results to each residence/property owner as soon as they become available.

Project Background

Water Board staff have been searching for the source of the TCE in groundwater since August 2013,

Contacts and Questions

- Dean Thomas: (805) 549-3690
dean.thomas@waterboards.ca.gov
- Thea Tryon: (805) 542-4776
thea.tryon@waterboards.ca.gov
- John Robertson: (805) 542-4630
john.robertson@waterboards.ca.gov
- Sarah Treadwell: (805) 549-3695
sarah.treadwell@waterboards.ca.gov