

# California Regional Water Quality Control Board, Lahontan Region

## Barstow Groundwater Perchlorate Pollution Update

### Background

In 2010, perchlorate, a chemical used to make rocket fuel, fireworks, flares, and explosives, was found near Barstow in wells used by Golden State Water Company. Within days of the discovery, Golden State Water Company had cleaned the distribution system and contaminated water is not being distributed in the municipal supply. Perchlorate was detected in the groundwater during a site investigation by the U.S. Environmental Protection Agency (USEPA) at 30433 Poplar Street, Barstow, CA. This site is considered the perchlorate contamination source area.

The California Regional Water Quality Control Board, Lahontan Region (Water Board) completed an investigation of the perchlorate-contaminated groundwater down gradient of the source area in 2012. The Water Board also samples residential wells and City of Barstow (City) monitoring wells on a regular basis to track the movement of the plume.

### Activities, 2011-2014

- In 2011 and 2012, USEPA conducted site investigations and cleaned up shallow soils at the source area
  - Over 1,100 tons of contaminated soil was removed from the site
  - A plastic liner was installed in the excavated area before being backfilled to prevent water from getting into the soil which still contains perchlorate at depth
  - To protect the plastic liner from being damaged, Land Use Restrictions against digging in the liner area (deed restrictions) were put on the site in 2014
- In 2011, the Water Board investigated groundwater downgradient of the source area. Investigation results showed the presence of a high concentration plume of perchlorate in groundwater from the source area and extending to the southeast.

**Figure 1 – Nitrate and Perchlorate Plume**



### FACT SHEET

February 2016

California Regional  
Water Quality  
Control Board,  
Lahontan Region

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Una versión en español de  
datos acerca de la  
contaminación de perclorato  
en las aguas subterráneas  
está disponible en la página  
electrónica

[www.waterboards.ca.gov/lahontan](http://www.waterboards.ca.gov/lahontan) Esta página provee la  
manera de comunicarse con  
el personal de la junta de  
Control de Calidad de Agua –  
Región Lahontan (Junta de  
Agua).

California  
Environmental  
Protection Agency

## Current Activities

With permission of well owners, the Water Board continues to sample groundwater, from City-owned groundwater monitoring wells and from domestic supply wells in the area. Results from the October 2015 sampling event show the following:

- High concentrations of perchlorate near the source area (up to 2,400 µg/L) and in two private domestic supply wells in the area northwest of Interstate 15 (I-15).
- The perchlorate contamination is moving in groundwater south and east beyond I-15 at concentrations above the maximum contaminant level (MCL) of 6 micrograms per liter (µg/L).
- The perchlorate plume greater than the MCL appears to extend more than 1.8 miles southeast from the source area.
- The lateral and vertical distribution of perchlorate is still not well known. At its most eastern point the perchlorate plume has mixed in with a nitrate plume in groundwater (caused by the City's treated sewage discharge site). See reverse side for an updated plume map showing both the perchlorate and nitrate plumes in groundwater. A separate Fact Sheet describing the status of the nitrate plume can be found at [http://www.waterboards.ca.gov/lahtan/water\\_issues/programs/nitrate/index.shtml](http://www.waterboards.ca.gov/lahtan/water_issues/programs/nitrate/index.shtml)

## Perchlorate and Drinking Water Standards

While the federal government has not yet set an MCL for perchlorate, California has established the MCL (the drinking water limit) for perchlorate at 6 micrograms per liter (µg/L, also known as parts per billion or ppb). MCLs are set for drinking water purposes only. It is important not to drink or prepare food with water that exceeds an MCL of 6 µg/L for Perchlorate. Boiling the water will not remove perchlorate and may actually concentrate it in the water. However, water that exceeds an MCL can be used for other purposes such as washing dishes, washing clothes, and general cleaning. MCLs are for humans. No standards exist for consumption by animals or for irrigation purposes. Persons wishing to better understand the health effects related to perchlorate are encouraged to contact the San Bernardino County Environmental Health Services, Safe Drinking Water Section or the State Water Resources Control Board, Division of Drinking Water.

## Next Steps

- The Water Board is continuing to work with other state agencies to determine the next steps for additional groundwater investigation and remediation, and possible funding sources.
- The California Rural Water Association has been awarded a planning grant to look at forming a legal entity in the area that could receive grant monies to provide a safe and reliable source of drinking water for each household. The planning grant will be considering a variety of alternatives. Community members are encouraged to participate in the process.

## Reference/Resource

Barstow Perchlorate

*Mojave River Pyrotechnics Assessment Report*, dated October 2011 and *Perchlorate Groundwater Investigation Report*, 30433 Poplar Street, Barstow, California

[http://www.waterboards.ca.gov/lahtan/water\\_issues/programs/perchlorate/index.shtml](http://www.waterboards.ca.gov/lahtan/water_issues/programs/perchlorate/index.shtml)

## Health Related Resource

San Bernardino County, Department of Health Services, 172 W. 3rd Street, 1st Floor,  
San Bernardino, CA 92415

(800) 442-2283

[http://www.sbcounty.gov/dph/dehs/Depts/EnvironmentalHealth/BusinessServices/safe\\_drinking\\_water.aspx](http://www.sbcounty.gov/dph/dehs/Depts/EnvironmentalHealth/BusinessServices/safe_drinking_water.aspx)