

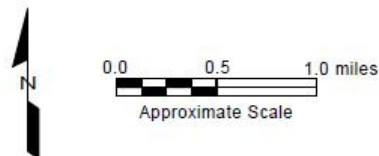
Barstow Perchlorate

Groundwater Results of December 2011 Site Investigation

Tim E. Post, PG, CHG
Lahontan Regional Water Quality
Control Board



- November 2010 – Golden State Water Co. determines Soap Mine Road Well contaminated with perchlorate.
- Water Board staff sample 28 private wells in the area
- Potential source area identified and sampled by USEPA in December 2010



SITE LOCATION MAP

December, 2011
Barstow, California

Why is the Water Board Involved?

- Preserve, enhance, and restore the quality of California's water resources
- Water Board would normally require the “responsible party” to perform site investigation
- No financially viable party was identified
- Water Board then requested funds to perform a limited site investigation.

Investigation Strategy

- Determine extent of perchlorate contaminated groundwater
- Knowing the extent – determine threat to public health
- Use temporary wells to maximize number of samples
- Focus sampling between suspected source area and Soap Mine Road Well





1. Drill to groundwater with hollow-stem auger rig



2. Install temporary well casing.

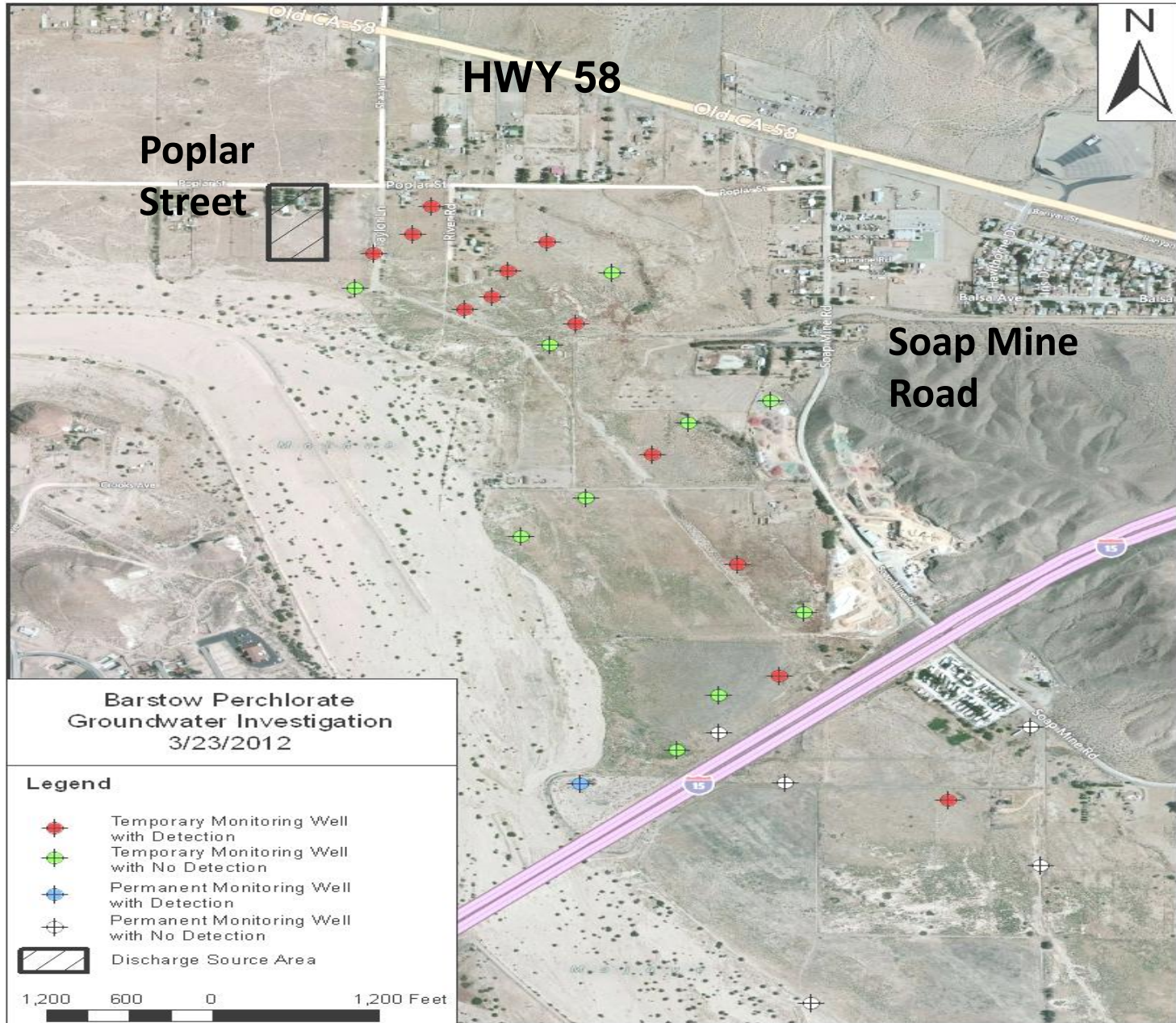


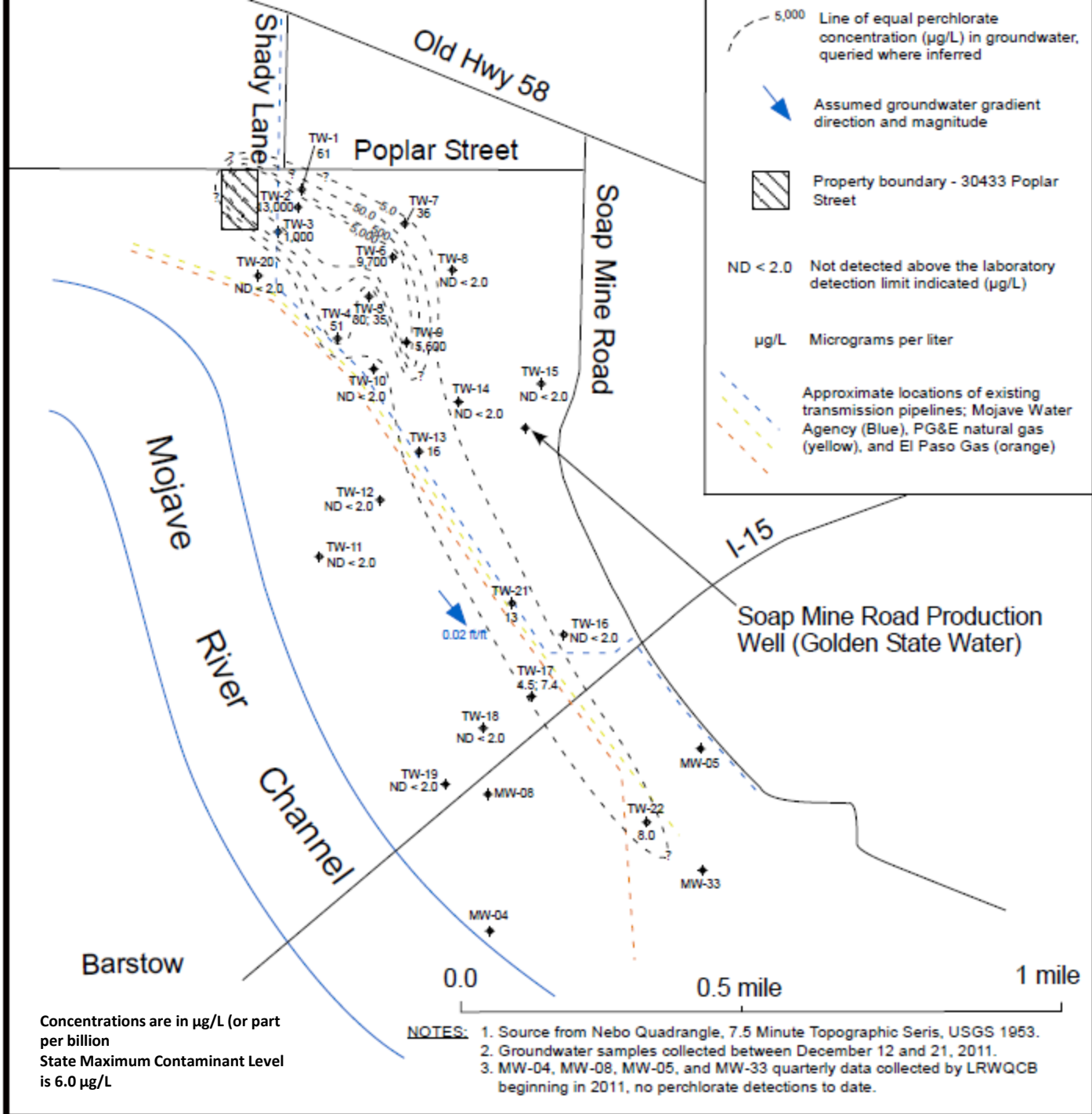
3. Take water level measurement.

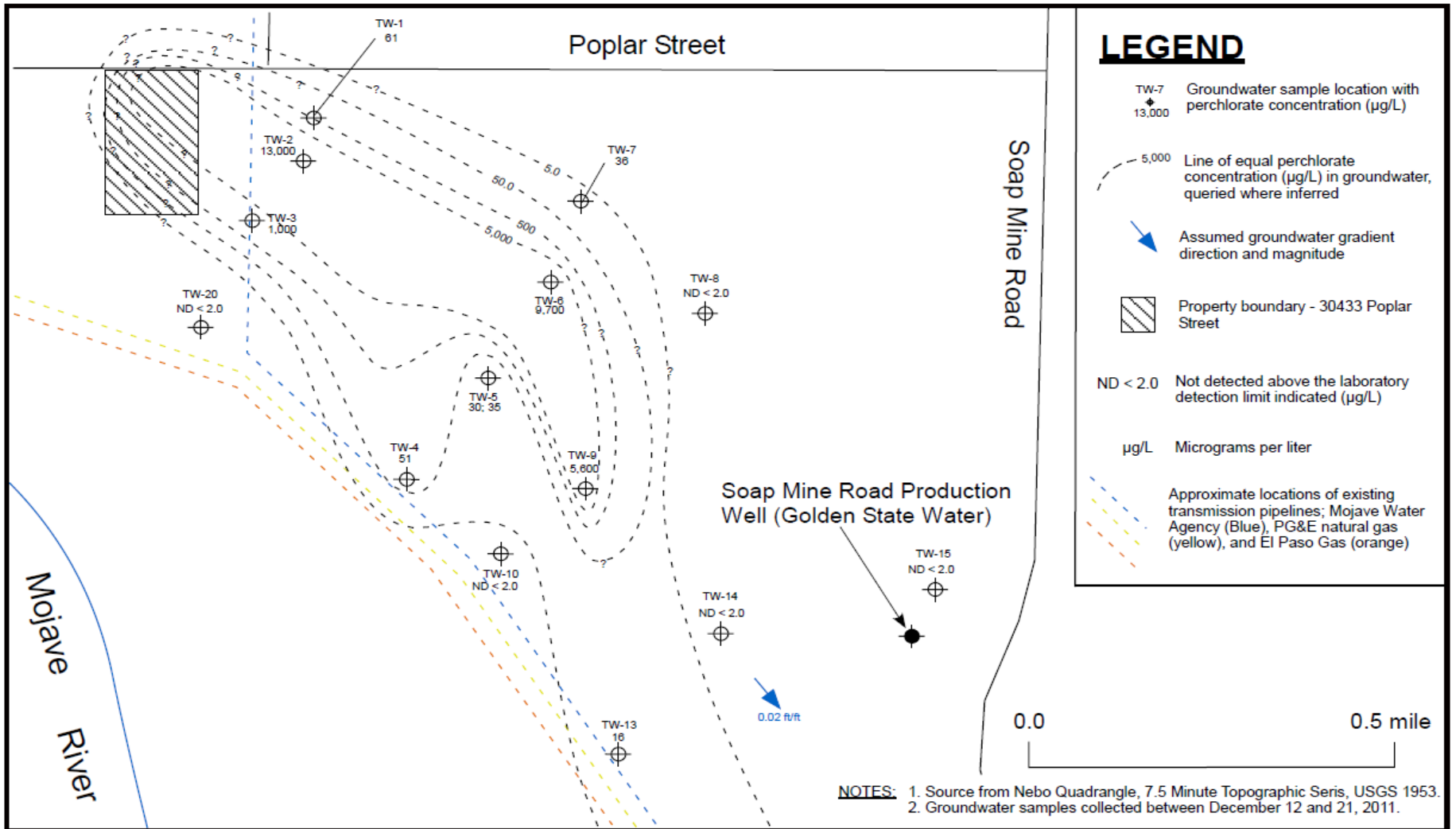


4. Collect water sample with a bailer.

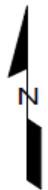
Groundwater Investigation Results







**PERCHLORATE ISOCONCENTRATIONS IN GROUNDWATER NEAR THE SITE
December, 2011
Barstow, California**



Uncertainties

- Extent of contamination to the southeast along utility corridor is unknown
- Thickness of the perchlorate-contaminated groundwater is unknown
- Rate of perchlorate-contaminated groundwater migration



Summary & Conclusions

- Highest concentrations nearest the source area
- Majority of contamination is within an area approximately 1,400 feet wide & 3,500 feet long
- No imminent threats to additional drinking water wells
- Limited sampling to further determine the extent is planned in late spring/early summer



A Special Thanks to the Land Owners & Community

Timothy & Kris Ayer

Euneva Bray

Julie Clemmer

David Huntback

Robert Kasner

Nicholas & Kathy Keating

William & Jo Ann Stanley

Mauray Sweeney

Leopoldo & Juana Zavala

Next Steps

- Monitoring of private water wells and permanent monitoring wells
- Soil cleanup of source area by USEPA



Copies of Site Investigation Reports

Electronic (.pdf) copies of:

- Perchlorate Fact Sheet,
- U.S. EPA's Site Investigation Report,
- Water Board's Site Investigation Report
- This PowerPoint[®] presentation can be downloaded from:

http://www.waterboards.ca.gov/lahtan/water_issues/programs/perchlorate/index.shtml