

Nitrates in Groundwater: The Path to a Solution

What We Have ♦ What We Need

Overview

- Ensure clean drinking water for affected communities
- Nitrate management has been a priority for years, and we're making progress
- California must base proposed solutions on reliable data and analysis
- More information would better inform decisions
- We are committed to working with you

SB X2-1 Mandate Is Not Yet Met

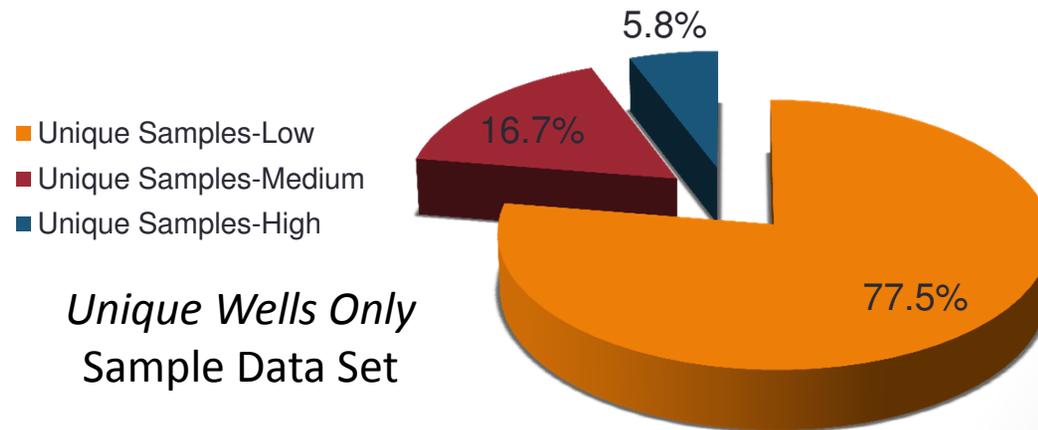
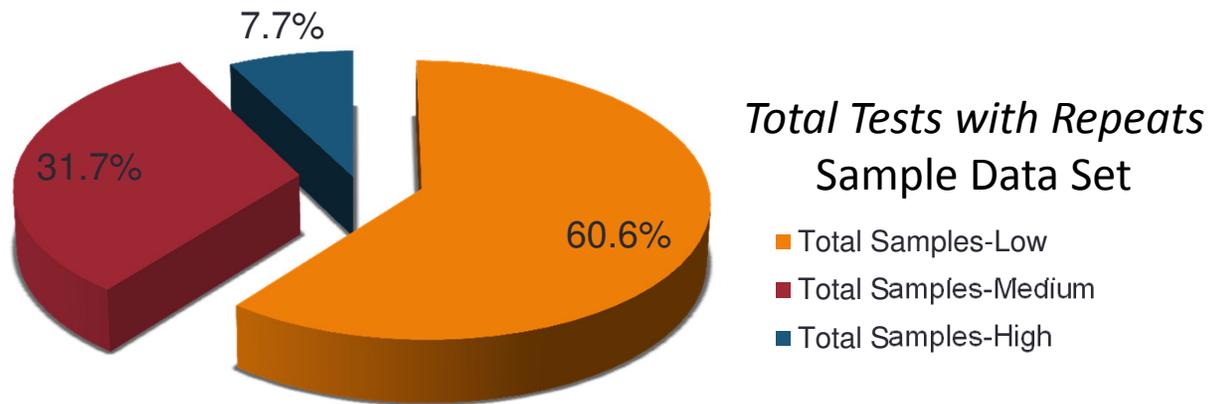
*The SWRCB in consultation with other agencies...**shall** develop pilot projects in the Tulare Lake Basin and the Salinas Valley...that focus on nitrate contamination and do all of the following:*

*(a)(1) In collaboration with relevant agencies **and utilizing existing data...***

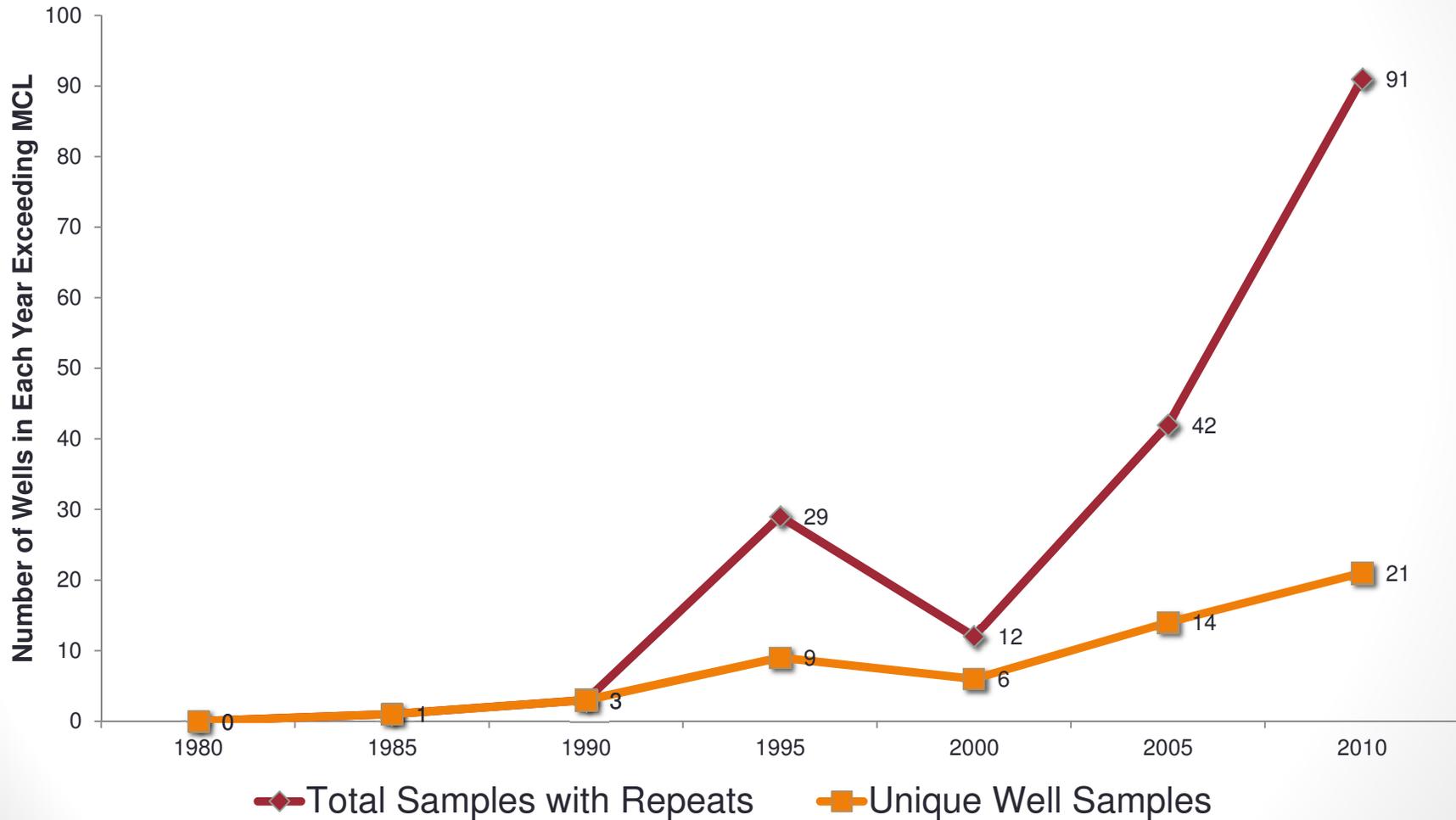
Uncited Studies

- “California GAMA Special Study: Nitrate Fate and Transport in the Salinas Valley,” 2011, Lawrence Livermore National Laboratory and California State University, East Bay
- “California GAMA Domestic Wells: Nitrate and Water Isotopic Data for Tulare County,” 2010, Lawrence Livermore National Laboratory
- “Ground-Water Quality Data in the Monterey Bay and Salinas Valley Basins,” 2007, California, 2005—Results from the California GAMA Program: U.S. Geological Survey Data Series 258
- “Nitrate dynamics within the Pajaro River, a nutrient-rich, losing stream,” University of California–Santa Cruz, 2006
- “Nitrate Contamination in California Groundwater: An Integrated Approach to Basin Assessment and Resource Protection,” 2002, Lawrence Livermore National Laboratory

Where Better Analysis Will Be Helpful

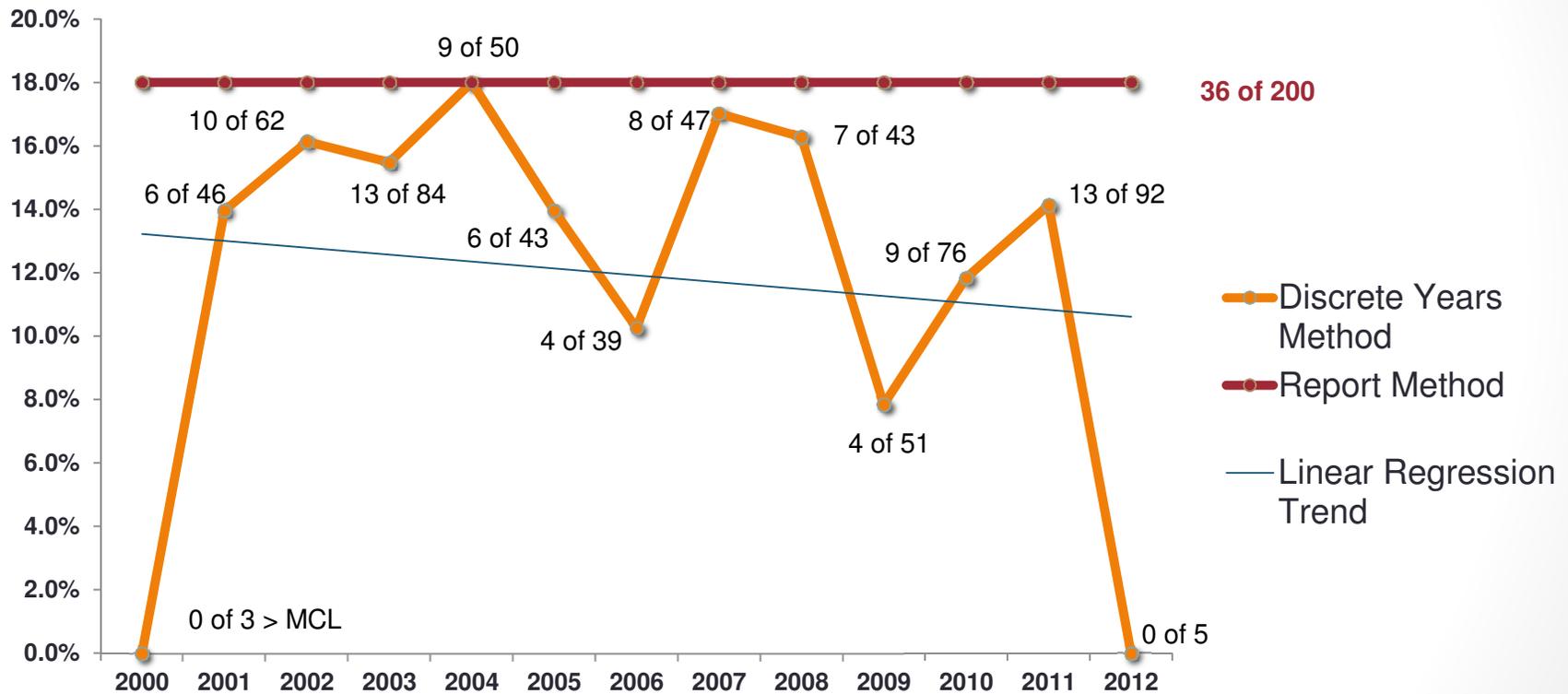


Where Better Analysis Will Be Helpful



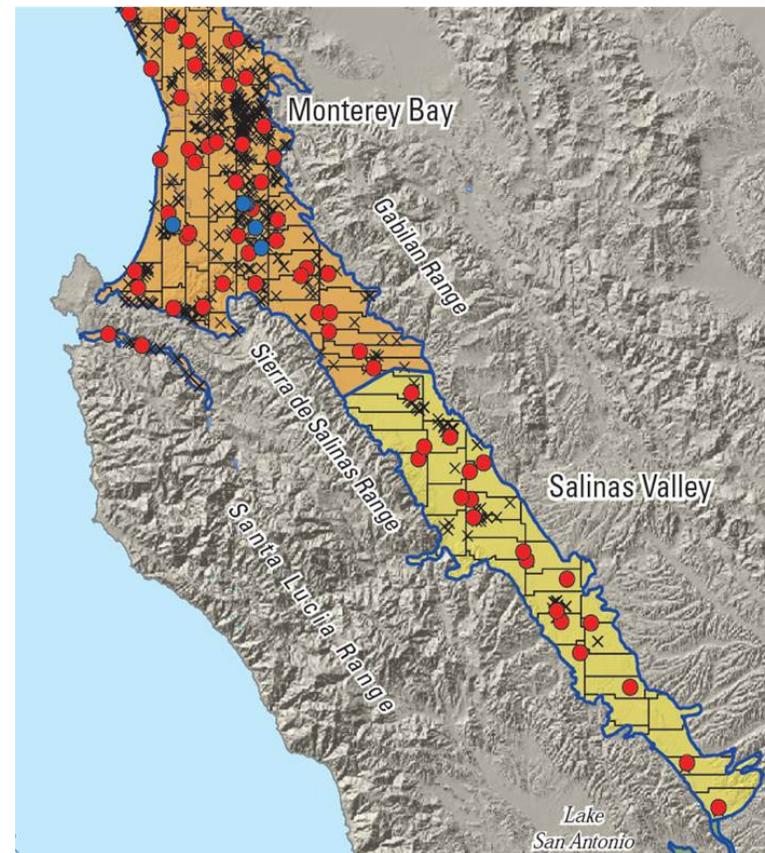
Where Better Analysis Will Be Helpful

Percentage of 200 Monterey Co. Wells with NO₃ Levels > MCL 2002-2010



U.S.G.S. Geospatial Sample Grid

- The USGS relies upon a spatially unbiased grid to select its well locations to assess aquifer-scale groundwater quality in the Salinas Valley.
- CDPH well data are used to identify well contaminants, extrapolate within grid cells, and perform spatially-weighted calculations at aquifer scale.
- Use of this methodology prevents statistical distortions caused by numerous areas in the CDPH databases with heavy clusters of exceedence wells, such as that seen north of the city of Salinas.



- USGS-grid well
- USGS-understanding well
- × CDPH well

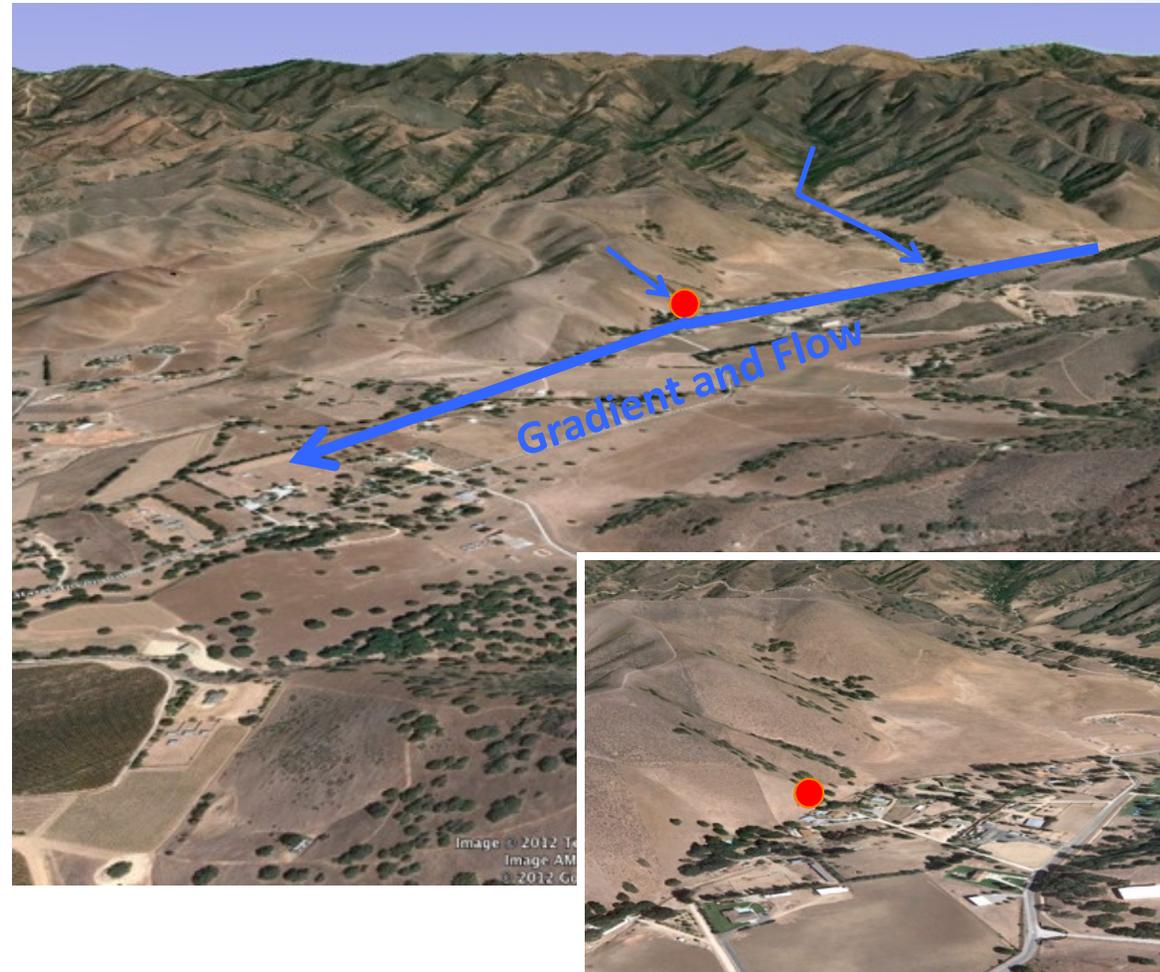
Where Better Analysis Will Be Helpful

- Alternate sources may be significant
- Nitrate dilution does occur
- Experts say Salinas Valley and Tulare Lake Basin should be analyzed separately
 - USGS
 - Lawrence Livermore Lab
 - Monterey County Regional Water Authority

Alternate Causation: Chualar Canyon

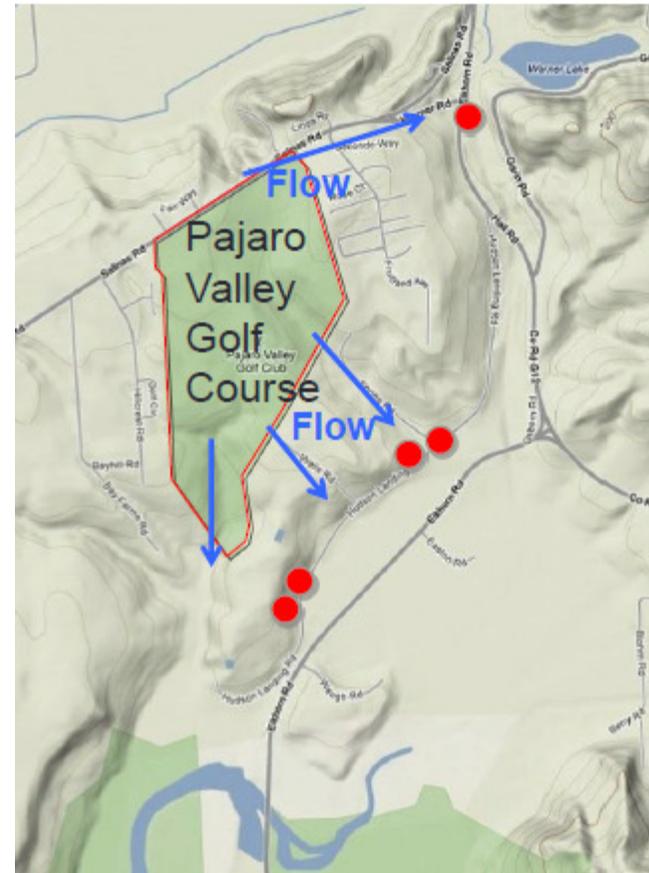
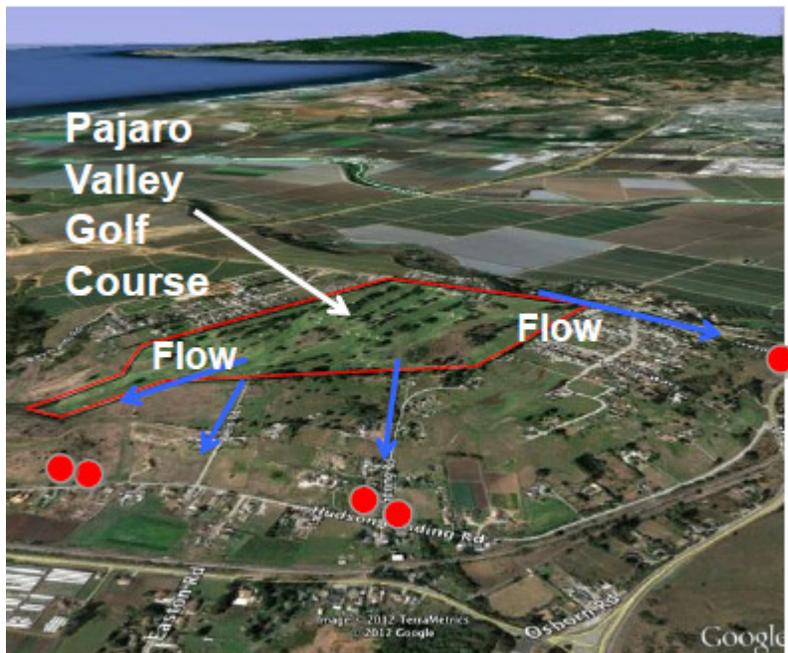
The report fails to adequately explain high groundwater nitrates found in natural vegetation areas distant from manmade sources of nitrates.

This local small system well east of Chualar tested 97 mg/l NO₃ in 2011, over double the nitrate MCL.



Alternate Causation: Hudson Landing Rd.

The exceeding wells are located in the drainage flow from a hilltop at Pajaro Valley Golf Course to the lowlands below. Golf courses apply nitrate fertilizers to their turf.



Sources: Small System Wells: Monterey County Department of Health, 2011; Base Maps: Google Earth and Google Terrain

Scientific Validation is Critical

- Independent peer review can resolve concerns about:
 - Data integrity and gaps
 - Statistical analysis
 - Inconsistencies with other studies
 - Errors and omissions

Summary

The State Water Board must have the benefit of a scientifically defensible study that meets the legislative mandate and has been validated in peer review before sending a report to the Legislature.

We Are Committed To A Solution

- Agricultural practices have evolved and today are reducing nitrates in groundwater
- We have a track record of working toward solutions and achieving results
- This will be no exception