



GROUNDWATER RESOURCES ASSOCIATION
O F C A L I F O R N I A

The 17th Symposium in GRA's *Series on Groundwater Contaminants*

“Nitrate in California’s Groundwater: Are We Making Progress?”

April 4-5, 2006 – DoubleTree Hotel, Modesto, California

PROGRAM AGENDA

Tuesday, April 4, 2006

8:00 – 2:00 pm Registration

1:00 – 1:15 pm ***Welcome and Program Overview***
Tom Mohr, President, GRA

General Session 1-1 – Nitrate Occurrence, Impacts, and Vulnerability

Moderators: Jean Moran and Brad Esser, Lawrence Livermore National Laboratory

1:15 – 1:45 pm *Nitrate Groundwater Pollution Hazard Index*
Laosheng Wu, University of California, Riverside

1:45 – 2:15 pm *Nitrate Loading, Transport, and Aquifer Vulnerability Studies*
Steve Carle, Lawrence Livermore National Laboratory

2:15 – 2:45 pm *Decadal Changes in Nitrate Concentrations in the Eastern San Joaquin Valley: Integrating Multi-Scale Monitoring Efforts to Assess Trends*
Jennifer Shelton, U.S. Geological Survey

2:45 – 3:15 pm *Cumulative Impact on Long-Term Groundwater Quality from Nitrogen Sources in Merced and Stanislaus Counties*
Thomas Harter, University of California, Davis

3:15 – 3:30 pm Break in Exhibit Area

General Session 1-2 – Geochemistry and Transport of Nitrate

Moderator: Thomas Harter, University of California, Davis

- 3:30 – 4:00 pm *Nitrate Contamination of Municipal Water Supply Wells: Investigating From Source to Receptor*
Christian Kropf, Washoe County Department of Water Resources
- 4:00 – 4:30 pm *Isotope Tracers of Nitrate Sources*
Carol Kendall, U.S. Geological Survey
- 4:30 – 5:00 pm *Geochemical Indicators of Saturated Zone Denitrification*
Mike Singleton, Lawrence Livermore National Laboratory
- 5:00 – 5:30 pm *Nitrate Reactions in a Heterogeneous Alluvial Fan Aquifer, San Joaquin Valley, California*
Chris Green, U.S. Geological Survey
- 5:30 – 6:30 pm Reception and Poster Presentations – Exhibit Hall**

Wednesday, April 5, 2006

- 7:30 – 11:00 am Registration
- 8:30 – 8:55 am **Keynote Speaker**
Paul Betancourt, Central Valley Regional Water Quality Control Board and President, VF Farms, Kerman, California

General Session 2-1 – Nitrate Loading and Sources

Moderator: Steve Silva, U.S. Geological Survey

- 9:00 – 9:25 am *Nitrate Loading and Fate From Animal-Waste Lagoons*
Tom DeSutter, USDA/ARS National Soil Tilth Laboratory
- 9:25 – 9:50 am *Nitrate Contamination Associated with Land Application of Biosolids*
Bill Showers, North Carolina State University
- 9:50 – 10:15 am *California Groundwater Ambient Monitoring Assessment Program (GAMA) - Nitrate Occurrence in Domestic Wells*
Jan Stepek, State Water Resources Control Board
- 10:15 – 10:30 am Break – Exhibit Hall**

General Session 2-2: Regulation, Management, and Treatment

Moderator: Sarah Raker, MACTEC

- 10:30 – 10:55 am *Fertilizer Research and Education Program Overview: 2006*
Kent Kitade, California Department of Food and Agriculture
- 10:55 – 11:20 am *Adaptive Management of Nitrate in Support of Irrigation with Reclaimed Water: Sensor Network-Driven Simulations with Feedback-Control*
Tom Harmon, University of California, Merced
- 11:20 – 11:45 am *Impact of Improved Nutrient Management Practices on Shallow Groundwater Quality Under Dairies*
Marsha Campbell Mathews, University of California Cooperative Extension Stanislaus County

11:45 – 1:15 pm Lunch

General Session 2-3: Regulation, Management, and Treatment (Continued)

Moderator: Matt Zidar, WRIME

- 1:15 – 1:40 pm *Building and Sustaining Successful Nutrient Management Partnerships*
Kathleen Thomasberg, Monterey County Water Resources Agency
- 1:40 – 2:05 pm *Progress in Regional Water Quality Control Board, Region 8 and Chino Basin Area in Nitrate and Salt Management*
Mark Wildermuth, Wildermuth Environmental
- 2:05 – 2:30 pm *The Use of GIS for Evaluating Trends and Patterns in Nitrate Contamination in Drinking Water*
Susan Shaw, Tulare County Environmental Health

2:30 – 2:45 pm Break – Exhibit Hall

General Session 2-4: Panel Discussion: Are We Making Progress?

Moderator: John Ungvarsky, U.S. Environmental Protection Agency

- 2:45 – 4:15 pm Panelists:
Martha Guzman, California Rural Legal Assistance Foundation
Bob Martin, Rio Farms
Paul Martin, Western United Dairymen
Jeff Palsgaard, Merced County Environmental Health
David Sholes, Central Valley Region Water Quality Control Board

4:15 – 4:30 pm Closing Remarks - Bill Pipes, Symposium Co-Chair

Poster Presentations

The Groundwater Ambient Monitoring and Assessment (GAMA) Program: A Comprehensive Statewide Monitoring Plan to Assess Groundwater Quality in California
Dorian Bellan, State Water Resources Control Board

Sensitive Nitrate Ion-Selective Sensors Based on Modified Polypyrrole Films
Chris Butler, University of California, Merced

Combining Data and Process-Based Models to Characterize Non-Point Source Pollution to Shallow Ground Water From an Irrigated Dairy Farm
Thomas Harter, University of California, Davis, Department of Land, Air and Water Resources

Fate of Liquid Dairy Manure Nitrogen in an Irrigated Double Crop Corn-Grain Rotation, California
Thomas Harter, University of California, Davis, Department of Land, Air and Water Resources

Regional, Long-Term Impacts From Nonpoint Source Pollution with Nitrate on Groundwater Quality: A Novel Approach
Thomas Harter, University of California, Davis, Department of Land, Air and Water Resources

Risk of Domestic Well Pollution From Septic Tank Leachate
Thomas Harter, University of California, Davis, Department of Land, Air and Water Resources

Holistic Approach to Nitrogen Management in Watersheds
Pio Lombardo, Lombardo Associates, Inc.

Performance of Passive Wastewater Nitrex™ Nitrogen Removal System
Pio Lombardo, Lombardo Associates, Inc.

Evaluation of Sources and Fate and Groundwater Nitrate at a Semi-Arid Catchment in the Central California Coast Ranges Using Stable Isotopes
Vic Madrid, Lawrence Livermore National Laboratory

Constraining Denitrification Mechanisms in Shallow Groundwater at an Instrumented Dairy Site Using Reactive Transport Modeling
Walt McNab, Lawrence Livermore National Laboratory

Use of Isotopic and Co-Contaminant Data for Determining Sources of Nitrate in the Groundwater
Nikos Melitas, Los Angeles County Sanitation Districts

ISEP Technology for Nitrate and/or Perchlorate Removal
Peter Ritchey, Calgon Carbon Corporation

Adaptive Management of Nitrate in Support of Irrigation with Reclaimed Water: Soil Characterization and Monitoring Network Design

Jose Saez, Department of Civil and Environmental Engineering, Loyola Marymount University

Effect of Acid Pre-Treatment on Removal of Nitrate From Drinking Water by Sulfur-Modified Iron®

Cindy Schreier, PRIMA Environmental

Nitrate Distribution in the Llagas Groundwater Subbasin

Michael Taraszki, MACTEC Engineering and Consulting, Inc.

Evaluation of Denitrification as a Natural Attenuation Mechanism in a Nitrate-Contaminated Aquifer

Mark Trudell, WorleyParsons Komex

Bench and Pilot-Scale Testing of a Hydrogen-Based Membrane Biofilm Reactor for Economical Treatment of Nitrate in Contaminated Groundwater

William Wright, California State University, Fresno