

# *Nitrates in Nevada Groundwater*

## 2007 NITRATE WORKSHOP

August 9 – 10, 2007, Carson City Plaza, Carson City, Nevada



Anna Makowski sampling a suction cup lysimeter in Spanish Springs Valley  
Taken by: Karen Thomas, U.S. Geological Survey

### Hosted By:

*Desert Research Institute*

*Nevada Division Of Environmental Protection*

*Nevada Water Resources Association*

*U.S. Geological Survey*

*Washoe County Department Of Water Resources*

**Nevada  
Water  
Resources  
Association**



### **NITRATES IN NEVADA GROUNDWATER PLANNING COMMITTEE**

**Michael Rosen, Ph.D.**, Program Chair, U.S. Geological Survey

**Donna Bloom**, Nevada Water Resources Association

**Nevan Kane, P.E.**, Nevada Division of Environmental Protection

**Christian Kropf**, Washoe County Department of Water Resources

**Russ Land, P.E.**, Nevada Division of Environmental Protection

**Jason Mace**, Southern Nevada Water Authority

**John Nelson, P.E.**, Washoe County Department of Water Resources

**Greg Pohll, Ph.D.**, Desert Research Institute

**Scott Tyler, Ph.D.**, University of Nevada, Reno

# Nitrates in Nevada Groundwater Letter from the Chair:

Welcome to the first NWRA 2007 Nitrates in Nevada Ground Water Workshop. This is a new workshop that was initiated due to concerns about increases in nitrate concentrations in ground water in many populated areas of Nevada. I hope you find the workshop to be both enjoyable and full of information that you can take back with you to the office and the field. In addition, the organizing committee hopes that the workshop will provide a forum for discussion on nitrate issues in Nevada that can be used to solve problems in your area. The workshop will cover all aspects of research on nitrates including the use of isotopes and chemical methods, sources and sinks of nitrogen as well as information on management and funding issues that can be used at both the local and state level.

As nitrate is continuing to increase in ground water in many of the populated areas of the state, increased pressure from the public to ensure good quality drinking water may result in possible legislation from local and state agencies. Therefore, understanding nitrate issues detailed in this workshop will allow scientists, water managers, and the public the ability to assess their local nitrate issues within a state-wide context and will enable people to draw on the knowledge of all the experts assembled for this workshop.

Networking is a key at this event during the breaks, luncheon and reception. I hope the many discussions you have with workshop attendees enhance your ability to deal with nitrate issues and to foster greater cooperation on nitrate issues that are common amongst the attendees. Please take a moment to thank the workshop sponsors, who are making this event a great success.

I would like to thank the workshop organizing committee for the superb job of assembling the program. Without their dedication this first nitrate workshop would not be possible. On behalf of the organizing committee, I welcome you to this first nitrate workshop and I trust that you will both learn from and share information with your fellow attendees.

Sincerely,



Michael R. Rosen  
Workshop Chair



# Workshop Sponsors

We would like to extend our thanks to the following organizations for their help and sponsorship of this workshop - it would not have been possible without their participation:

## ★ Gold Level Sponsors

Nevada Division of Environmental Protection



URS Corporation



U.S. Geological Survey



Washoe County Department of Water Resources



# Preliminary Program

## Day 1 – Thursday, August 9, 2007:

7:30 a.m. - 4:00 p.m.

### Symposium Registration

8:30 a.m. – 9:00 a.m.

### Opening Remarks -

Michael Rosen, Ph.D., *Symposium Chair*

#### ◆ Keynote Speaker:

**Allen Biaggi**, Director

Department of Conservation and Natural Resources

9:00 a.m. – 10:00 a.m.

### Overview of Science and Research

#### ◆ **Graham Fogg, Ph.D.**, Professor,

University of California, Davis – *Sources of Nitrates*

#### ◆ **Carol Kendall, Ph.D.**, Project Chief

U.S. Geological Survey – *Analyses*

10:00 a.m. – 10:20 a.m.

### Break – Poster & Reception Area

10:20 a.m. – Noon

### Sources of Nitrates

#### ◆ **Pete Hartsough**, Research & Training Assistant, University of Nevada, Reno – *Sources of Naturally Occurring Nitrates*

#### ◆ **Michael Rosen, Ph.D.**, Research Hydrologist, U.S. Geological Survey – *Septic Tanks*

#### ◆ **Ralph Seiler, Ph.D.**, Hydrologist, U.S. Geological Survey – *Agricultural & Urban Nitrates*

#### ◆ **Brian Andraski, Ph.D.**, Research Hydrologist, U.S. Geological Survey – *Nitrates in Soil Zone*

Noon – 1:30 p.m.

### Luncheon

#### ◆ Keynote Speaker:

**Shane Snyder, Ph.D.**, Research and Development

Project Manager, Southern Nevada Water Authority -  
*Endocrine Disruptors in the Water*

1:30 p.m. - 2:30 p.m.

### Health Issues – *What will happen if steps are not taken to address nitrates? What health issues do nitrates cause? How can these health issues be mitigated?*

#### ◆ **Doug Coulter, P.E.**, Washoe County Health Department

#### ◆ **John Ungvarsky**, U.S. Environmental Protection Agency, Region 9

2:30 p.m. – 3:00 p.m.

### Break – Poster and Reception Area

3:20 p.m. – 5:00 p.m.

### Testing and Analyses

#### ◆ **Steve Silva**, Hydrologist, U.S. Geological Survey – *Analyses*

#### ◆ **Gary Pohl, Ph.D.**, Associate Research Professor, Desert Research Institute – *Modeling*

#### ◆ **Mike Brisbin**, Water Quality Control Coordinator, Truckee Meadows Water Reclamation Facility – *Analytical*

# Preliminary Program

5:00 p.m. – 6:30 p.m.

Poster Reception and possible Dinner with Keynote

## Day 2 – Friday, August 10, 2007:

7:30 a.m. – 10:00 a.m.

Symposium Registration

8:00 a.m. – 9:30 a.m.

**What are Cities, Counties and States Doing?**

- ◆ **Eric Dano**, Hydrologist, Southern Nevada Water Authority – *Septic Nitrates: Study of a Shallow System*
- ◆ **Russ Land, P.E.**, Supervisor, Ground Water Protection, Branch, Nevada Division Environmental Protection – *Permitting*
- ◆ **Christian Kropf**, Senior Hydrogeologist, Washoe County Department of Water Resources

9:30 a.m. – 9:45 a.m.

Break

9:45 a.m. – 11:15 a.m.

**How are ideas being implemented?**

- ◆ **Joe Maez, P.E.**, Technical Services Branch, Nevada Division Environmental Protection – *State Approval of Design that mitigates pollution, i.e. denitrifying systems*
- ◆ **Dale Devitt, Ph.D.**, University of Nevada, Las Vegas – *Nitrate in Irrigation*

11:15 a.m. – 12:30 p.m.

**Program Funding – What grants are available? What are the criteria?**

- ◆ **Adele Basham, P.E.**, Supervisory Engineer IV, Nevada Division Environmental Protection
- ◆ **John Nelson, P.E.**, Licensed Engineer, Washoe County Department of Water Resources

12:30 p.m.

Closing Comments and Wrap up

*Nevada Water Resources Association*  
**Nitrates in Nevada Groundwater**  
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