NITRATE TREATMENT TECHNOLOGY WORKSHOP
Sponsored by
State Water Resources Control Board (SWRCB)
and
California Department Public Health (CDPH)
September 4 & 5, 2013
Byron Sher Auditorium
Second Floor CalEPA Building
1001 I Street
Sacramento, CA 95814
(Public Webcast: http://www.calepa.ca.gov/broadcast)

Day One

Morning Session

***Updated!* As of: 8/28/2013**

Part I

8:30 – 9:00	**CHECK-IN**	
9:00 – 9:15	I.	Opening Remarks (15 minutes) – Frances Spivy-Weber, Vice Chair, SWRCB and Mark Starr, DVM, MPVM, DACVPM, Deputy Director for Environmental Health, CDPH
9:15 – 9:25	II.	Nitrate in Groundwater and its Effects (10 minutes) – John Borkovich, Senior Engineering Geologist, SWRCB
9:25 – 9:50	III.	Regulatory Requirements / Health Concerns (25 minutes) – Mark Bartson, Supervising Engineer and Eric Miguelino, M.D., Research Scientist, CDPH
9:50 – 10:10	**BREAK**	
10:10 – 10:35	IV.	Impacts to Small Disadvantaged Communities and Case Studies (25 minutes) – Jeanette Pantoja, Water and Land Use Community Worker, California Rural Legal Assistance, Inc. and Omar Carillo, Policy Analyst, Community Water Center
10:35 – 11:00	V.	Challenges for Treatment of Nitrates / On-going Nitrate Treatment Studies (25 minutes) – Chad Seidel, Manager of Water Technology, Jacobs Engineering
11:00 – 11:25	VI.	Disposal Options for Treatment Residuals from Drinking Water Treatment Systems (25 minutes) – Rob Busby, Supervising Engineering Geologist, Central Valley Regional Water Quality Control Board – Sacramento Office
11:25 – 11:50	VII.	Biological Treatment - General Overview (25 minutes) – Eugene Leung, Senior Sanitary Engineer, CDPH

LUNCH ON YOUR OWN (11:50 AM – 1:05 PM)

Part II

Technical Presentations

Technical presentations at a minimum should include the following and will be limited to 20 minutes and additional five minutes for questions and answers for a total of 25 minutes:

1. Costs: system purchase price, installation costs, O&M costs
2. Effectiveness of treatment for other co-contaminants, such as arsenic or pathogens
3. System reliability
4. Suitability for small water system (minimum treatment capacity)
5. Strength and quantity of brine/residuals if applicable
6. Brine/residuals disposal options if applicable
7. Location(s) of existing system installation(s)
8. Quality of treatment system waste stream (volume, pollutant concentrations)

Disclaimer: The presentations are intended as a guide of nitrate treatment technologies and should be used as an informational tool only. The contents of the presentations are solely the responsibility of the presenters/authors and do not necessarily represent the official views of the State Water Resources Control Board and the Department of Public Health. The selection and design of the most appropriate nitrate treatment alternative for a particular water system depends on a variety of factors and requires the expertise of experienced professional engineers. Discussion of proprietary technologies is intended to provide information about treatment alternatives and does not imply endorsement.

Day One

Afternoon Session

***Updated!* As of: 8/28/2013**

Residential Level Treatment Technology (rescheduled)

1:05 – 1:30	VIII.	Smart Water Systems For Distributed Deployment (25 minutes) – Yoram Cohen, Professor, Chemical and Biomolecular Engineering, University of California, Los Angeles

Innovative Biological Treatment Technologies for Nitrate

Summary: Biological treatment of nitrate relies on bacteria to transform nitrate to nitrogen gas. A major advantage of biological treatment is the avoidance of waste brine disposal. Substrate or media for the bacteria to grow on and an electron donor are key elements for treatment technologies of this type. Variations of biological treatment lie in the type and/or form of substrate used and electron donor used, as well as its delivery method.

1:30 – 1:55	IX.	A Novel Biotechnology for Treatment of Nitrate in Water (25 minutes) – Ali Dorri, Director of Business Development, Microvi Biotech, Inc.
1:55 – 2:20	X.	Nitrate Treatment with ARoNite™, a Novel Hydrogen-Based Biological Reduction Process (25 minutes) – David Friese, ARoNite™ Technology Director, APTWater, Inc.
2:20 – 2:40	**BREAK**	
2:40 – 3:05	XI.	Utilization of a Fluidized Bed Bioreactor for the Treatment of Nitrate Laden Water to Potable Water (25 minutes) – Todd S. Webster, Ph.D., P.E., Regional Vice President – West, Envirogen Technologies, Inc.
3:05 – 3:30	XII.	Drinking Water Test at West Valley Water District Site (25 minutes) – Peter Hall, Chief Engineer, MIH Water Treatment Inc.
3:30 – 3:55	XIII.	Efficient Destruction of Multiple Groundwater Contaminants Using the BIOTTTA™ System (25 minutes) – Jess Brown, R&D Practice Director, Carollo Engineers
3:55 – 4:20	XIV.	Biological Nitrate Treatment – Experience and Insights from Two Demonstration Studies (25 minutes) – Issam Najm, President, Water Quality & Treatment Solutions, Inc. (WQTS)
4:20 – 5:00	XV.	Responses to Audience Questions and Technical Discussion (40 minutes)

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Day Two

Morning Session

***Updated!* As of: 8/28/2013**

8:30 – 9:00 **CHECK-IN**

9:00 – 9:10 I. Opening Remarks – Recap of Day 1; Overview of Day 2 (10 minutes) – Gita Kapahi, Facilitator, Director, Office of Public Participation, SWRCB

9:10 – 9:40 II. Challenges Facing Small Systems and Point-of-Use Devices (30 minutes) – Cindy Forbes, Principal Engineer and Eugene Leung, Senior Sanitary Engineer, Drinking Water Program, CDPH

Residential Level Treatment Technologies

Summary: Point-of-Use (POU) and Point-of-Entry (POE) treatment devices rely on many of the same treatment technologies used in centralized treatment plants. However, while centralized plants treat all water distributed to consumers to the same level, POU and POE treatment devices treat only a portion of the total flow. A POU device treats only the water intended for direct consumption (drinking and cooking), typically at a single tap or a limited number of taps, while a POE device treats all the water entering a single home, business, school, or facility.

POU treatment devices may be an interim treatment option for public water systems while a POE or centralized treatment system is designed and installed. POE treatment devices may be an option for public water systems where central treatment is not affordable.

Nitrate POU – Reverse osmosis treatment units are used to treat only the water intended for direct consumption.

9:40 – 10:20 III. NSF/ANSI Certification of Point-of-Use Devices (40 minutes) – Mike Blumenstein, Technical Manager, DWTU, NSF International and Amanda M. Fisher, Product Certification Manager, Water Quality Association

10:20 – 10:40 **BREAK**

10:40 – 11:10 IV. Environmental Justice Group's Experience with POUs (30 minutes) – Shen Huang, Technical Engineer, Community Water Center

11:10 – 12:00 V. Responses to Audience Questions and Technical Discussion (50 minutes)

LUNCH ON YOUR OWN (12:00 PM – 1:15 PM)

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Day Two

Afternoon Session

***Updated!* As of: 8/28/2013**

Centralized Treatment Technologies

1:15 – 1:25	VI.	Ion Exchange Treatment Background (10 minutes) – Chad Seidel, Manager of Water Technology, Jacobs Engineering
1:25 – 1:50	VII.	Small Water System Economics for Near Zero Liquid Waste Denitrification (25 minutes) – Phil Chandler, Managing Director and Mike Waite, Director of Technology, Ionex SG Limited
1:50 – 2:15	VIII.	Innovative Ion Exchange Solutions for the Treatment of Nitrate Laden Water to Potable Water for Small Communities (25 minutes) – William Schwartz, P.E., Process Engineering Manager, West Region, Envirogen Technologies
2:15 – 2:40	IX.	Nitrate in Groundwater; IX & Catalyst Water Treatment Solutions (25 minutes) – Charles Drewry, National Sales Manager, IX/ISEPWater Treatment Solutions, Calgon Carbon Corporation
2:40 – 3:05	X.	Orica Watercare's EnviroPak and Nitrate Technologies (25 minutes) – Scott Ostrowski, Western Regional Manager, Orica Watercare, Inc.
3:05 – 3:25	**BREAK**	
3:25 – 3:35	XI.	Selective Electro Dialysis (10 minutes) – Eugene Leung, Senior Sanitary Engineer, CDPH
3:35 – 3:55	XII.	Other Treatment Technologies (20 minutes) – Chad Seidel, Manager of Water Technology, Jacobs Engineering
3:55 – 4:35	XIII.	Responses to Audience Questions and Technical Discussion (40 minutes)
4:35 – 4:50	XIV.	Closing (15 minutes) – Frances Spivy-Weber, Vice Chair, SWRCB and Mark Starr, DVM, MPVM, DACVPM, Deputy Director for Environmental Health, CDPH

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