

# Clean Water Monitor

Working Together with Our Community to Prevent Water Pollution



Your Regional Wastewater Collection & Treatment Facility  
VOLUME 2 ISSUE 1

Serving Coastsiders Since 1976  
SUMMER/FALL 2007

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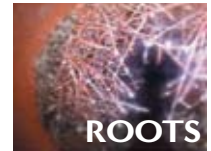
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## HOT SPOT: SUMMER'S THE TIME TO MAINTAIN YOUR LATERAL

Protect Your Home with Regular Check ups to Prevent Backups

If you own your home or a rental property, you also own the sewer lateral (*the section of underground pipe that connects the wastewater system from your home or building to the sewer main line*). Complete or partial pipe blockages can cause backups, while defective or broken private laterals can allow root intrusion which causes blockages and overflows into the environment. Leaking pipes also allow wastewater to reach groundwater or area waterways, which adds to water pollution.



## Got Sewer Problems?

- Check with your neighbors. Are they also experiencing problems? If so, the cause may be a main sewer line stoppage. Call SAM at (650) 726-0124 for assistance. We are on-call 24 hours a day.
- The sewer backup problem may be caused by grease or debris buildup clogging your private lateral. Simple cleaning may resolve the problem. Back up problems can also result from tree roots or a crack in your lateral that may require more extensive repairs.
- Look in the yellow pages under "Sewer Contractors" or "Plumbers" to locate a reputable sewer cleaning company or contractor if you are unable to do the job yourself. Get several opinions and free estimates. Prices do vary WIDELY for the same quality work.

## What You Can Do

- Keep it clean. Property owners should always be aware of the condition of their sewer lateral, just like pipes from sinks, bathtubs, toilets and showers in their home.
- Think FOG: fats, oils and grease (*cooking oils, dairy products and salad dressings*) — don't put them down the drain.
- Schedule an inspection. A qualified plumber can maintain your private sewer lateral and cleanout (*a vertical pipe from the underground lateral to the surface and has a removable cap for maintenance access*).
- Replace your cleanout cap with a screw-on backflow prevention device. In the event of a stoppage, this will relieve pressure at your cleanout instead of inside your home. Know where your sewer clean out is located for quick access to stop messy, costly sewage backups into your home.
- Remember to clear blockages from your lateral. This may prevent future problems. If your home doesn't have a clean out, you may want to add one at your property line. Two-way cleanouts provide easier access to maintain your sewer lateral toward your home and the main sewer.
- If you have a problem, call SAM first at (650) 726-0124.

## SMART IDEA: CAR WASH KIT

Keep Pollution Out of Our Waterways

Car wash kits keep soap and car fluid pollutants (*which damage water quality and are toxic to aquatic life*) out of our waterways by re-routing wastewater to a treatment facility. If you hold community or charity car washes or are an organization that works with those who do, call SAM to borrow our StreamGuard™ SudSafe™ Car Wash Kit at no charge.



## What You Can Do

- Use a professional car wash service to prevent water pollution.
- Use a car wash kit as an alternative if a professional service is not available. The kit uses a hose that connects to a toilet, sink or drain and sends the wastewater to the SAM plant. Without using the kit, water runs off the drive-way, parking lot or street into storm drains and directly into our creeks and ocean.

## SLUDGE MEETS SCIENCE IN ACTION DURING SEWER SCIENCE

Adolescents Learn About an Unfamiliar Sequence in the Water Cycle

By Barbara Lohman and Leigh Detweiler

In 2006, the Half Moon Bay High science department and SAM cooperated on an innovative pilot program to blend curriculum with a meaningful educational opportunity for the younger Coastside population. Linking science and technology to the environment, students learned basic concepts in wastewater treatment through the “Sewer Science” experience. The program was refined in 2007 to meet California Science Content Standards, and used specially-designed digesting and clarifying tanks, lab equipment and safe techniques provided by SAM. Over two years, more than 450 students have learned about the fate of wastewater before its return to the environment as part of the water cycle. SAM is the fourth of eight wastewater agencies to sponsor the program since 1997 within San Mateo County.

When asked, a very small percentage of students knew of SAM’s location so it seemed unnecessary to ask them if they knew what it did. Lessons combined microbiology, chemistry, physics, and environmental science, and began with viewing “History of Sewers,” which chronicles the sewers of the early Romans to modern-day Los Angeles. They were shocked at the idea of pouring untreated sewage directly into bodies of water. The students then created and cleaned simulated wastewater through a series of experiments under EPA standards. They combined food, oil, coffee grounds and other materials that might go down the drain. They measured pH and nitrate levels and water clarity as it moved from tank to tank just as it would at the real treatment plant. At this stage, they learned how they can prevent water pollution in their daily lives. Using microscopes, students examined commonly found microorganisms in activated sludge from the advanced secondary treatment function of plant

where wastewater is combined with a mixture of bacteria and air bubbles in aeration tanks to remove up to 90% of pollutants. They got a kick out of the term “sludge.”

On the field trip, students learned where wastewater goes when you use a drain. Guided through the plant’s functions by knowledgeable SAM crew, they were appalled by the balls of fat removed from pipes. They viewed root-clogged pipes and lettuce leaves floating on the water’s surface. They enjoyed learning about the use of microscopes and computers during plant operations. They were interested to learn where the cleaned wastewater outfall was located since some of the students are surfers. They remarked, “That was a really wonderful field trip” and “We didn’t even know that place was there.”

We’re sure that they told their parents about the excursion, but hope that it

**Under close supervision, students transfer simulated wastewater from the sedimentation tank to the aeration basin.**

**Students examine and identify microorganisms at testing stations during classroom instruction. They also filtered their simulated wastewater through a tertiary treatment process (tube apparatus located in the forefront of the picture).**

**Throughout the curriculum, students tested oxygen demand, pH and turbidity levels of the water.**

wasn’t at the dinner table. Back in the classroom, their processed simulated sewage was looking very clear and testing well while the control was remaining cloudy and becoming aromatic.

The result of this lesson is a generation of young adults who know a lot more than the average citizen about cleaning wastewater. They’re better prepared to be responsible users of SAM’s services and better stewards of the environment. We thank SAM for bringing Sewer Science to the classroom as an investment in their future. 💧



Half Moon Bay High School students who are learning biology and life science tour the wastewater treatment plant during the week-long Sewer Science program sponsored by SAM.

## THE SEARCH FOR SOLUTIONS IN THE SURF ZONE

### SAM Collaborates on Keeping Water Blue

By Carol-ann Towe, Blue Water Task Force coordinator

Surfers and ocean enthusiasts of the Blue Water Task Force (BWTF), a volunteer-driven water quality effort led by the San Mateo County chapter of the Surfrider Foundation, have tackled the effects of urban run-off and non-point source pollution on our area's water quality since 2000. Along the way, partnerships have formed to establish the county's first non-profit independent water quality lab, including what may seem an unlikely affiliation between a wastewater agency and local surfers. The lab, emerging from an underutilized garage bordering a Pillar Point Harbor boatyard, is owned by SAM, and leased without cost to Surfrider. BWTF volunteers regularly collect and test samples from coastal waters and creeks



along the Peninsula to determine the patterns and sources of pollution in the near shore environment. "SAM's contribution is a proven asset to the community by providing not only the brick-and-mortar housing for the lab but also on-going operational support that keeps our efforts continuously running," said Ed Larenas, chapter chair. By working collaboratively, turnaround time for reporting more detailed sampling results in "real time"



has improved and greater momentum has been gained in solving local water quality issues. All results are made public — not just those that are found to be above state standards. Water quality conditions at our beaches and near shore waters are published on [www.earth911.org](http://www.earth911.org).

Interested in becoming a BWTF member, or making a donation to continue the search for solutions to coastal pollution? Contact Ed Larenas: [surfdoggie@gmail.com](mailto:surfdoggie@gmail.com).

#### Did You Know?

According to the county, up to 80% of toxins originate from garbage, fertilizers and oil to animal and human waste, and are carried in stormwater that pours into gutters, which run into storm drains, which feed into waters along the San Mateo County coast.

The BWTF also supports the San Mateo County Environmental Health Services' weekly sampling mandate. Volunteers collect sea and fresh water samples (about 2,000) from more than 30 sites along the coastline year-round. Samples are analyzed under rigorous standards for bacterial contaminants such as e.coli and enterococcus to determine if waters near public beaches should be posted with alerts, or closed until remedied. Data collected under the AB 411 mandate is also providing a new baseline against which the number of future beach warning postings and closures are compared.

## NOT DOWN THE DRAIN: TRICLOSAN & OTHER ANTIBACTERIAL AGENTS

### The Unintended Consequences of a Widely Used Additive

Triclosan (*an antimicrobial disinfectant*) is the most common ingredient in antibacterial soaps. It is an additive in everyday household and personal care products that are disposed down residential drains.

In 2006, the Emerging Contaminants Workgroup of the Santa Clara Basin Watershed Management Initiative examined the body of knowledge regarding Triclosan due to its extensive use and presence in water bodies including San Francisco Bay. They recommended adopting strategies

under a unified regional approach to reduce its use in the Bay Area including public education through partnership networks such as the Bay Area Clean Water Agencies (BACWA).<sup>1</sup> SAM joins this effort as a member of BACWA to educate the public and continue to follow scientific studies regarding the fate of anti-bacterial agents and their by-products in the environment. Others, such as the City of Palo Alto, have discontinued use of these products in their facilities to

See *Not Down the Drain* continued on page 4

Typical Products  
That May Contain  
Triclosan



<sup>1</sup>BACWA's membership includes local publicly-owned treatment works, agencies and leaders working in urban water resource management and public stewardship of the Bay water quality. The group formed to develop a region-wide understanding of the watershed protection and enhancement needs through reliance on sound technical, scientific, environmental and economic information and ensure that this understanding leads to long-term stewardship of the San Francisco Bay Estuary.

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The City of Half Moon Bay, Granada Sanitary District, and Montara Water and Sanitary District are member agencies of Sewer Authority Mid-Coastside through a Joint Exercise of Powers Agreement (JPA) formed in 1976.

## SAM BOARD OF DIRECTORS MEETINGS

Fourth Monday of Each Month 7:30 p.m. at the SAM Plant

## Sewer Authority Mid-Coastside

1000 N. Cabrillo Highway  
Half Moon Bay, CA 94019

Phone: (650) 726-0124 Fax: (650) 726-7833  
Business hours: 8 am–5 pm Monday– Friday (excluding holidays)  
Crew On Call 24 Hours A Day

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[www.samcleanswater.org](http://www.samcleanswater.org)

### *Not Down the Drain* continued from page 3

minimize its occurrence in surface water and wastewater.

Triclosan can be transported to water bodies in runoff that enters the stormwater system through commercial or residential washing of outdoor equipment with antibacterial soaps (e.g., washing cars or restaurant mats with triclosan-containing products). Most runoff that enters storm drains is untreated and directly flows into creeks within many Bay area watersheds. A 2002 U.S. Geological Survey study of 95 different organic wastewater contaminants in U.S. streams found Triclosan to be one of the most frequently detected compounds in some of the highest concentrations.

Researchers at the Swiss Federal Institute for Environmental Science and Technology, along with other extensive environmental studies investigating the behavior of Triclosan in domestic wastewater, have found significant removal of the additive at wastewater treatment operations (79% removed via biological degradation; 15% adsorbed to sludge; 6% remains in effluent) that use mechanical clarification, biological treatment or nitrification, flocculation and filtration processes. The SAM plant uses these processes before discharge. 💧

### What You Can Do

- Read all ingredients when buying household and personal care products to minimize the disposal of antibacterial additives down household drains.
- Choose alternatives to Triclosan and other antibacterial agents such as washing hands with plain soap (*pure glycerin, castile or vegetable-based*) and water and using alcohol or peroxide-based hand gel sanitizing agents for extra assurance.
- Consider using essential oils that have antimicrobial properties such as Australian tea tree, grapefruit seed, and pine oils.
- Continue other routine germ-fighting measures such as adequate handwashing, washing surfaces that come in contact with food, and washing children's hands and toys regularly.
- Use a professional car wash service to keep Triclosan out of our waterways.

### Did You Know?

- The American Medical Association has not endorsed the necessity or efficacy of Triclosan and other antibacterial agents in household or personal care products.
- Scientific evidence suggests that antibacterial products are no more effective than plain soap in protecting us from germs. Physicians indicate that the best germ fighting measure continues to be hand washing with regular soap, or for extra assurance, using alcohol or peroxide-based hand sanitizers. (*2004 study by Columbia University; 2005 study by US Centers for Disease Control and Proctor & Gamble*).
- Though our current understanding of Triclosan's environmental effects is limited, it is a registered pesticide with the EPA, and is not readily or inherently degradable. Evidence of its acute toxicity can have detrimental effects on aquatic ecosystems.
- Triclosan bioaccumulates in fish and human tissue, and the potential negative human health effects of its use are unknown.
- 2005 studies by Virginia Tech and the University of Minnesota suggest that Triclosan can combine with chlorine in tap water to form chloroform classified as a probable human carcinogen by the EPA, and that chlorine and Triclosan can react to form dioxins in the presence of sunlight when it's in river water. (*Chemically stable dioxins are considered extremely toxic and potent endocrine disruptors, and may persist in the environment for long periods*).

For references on the research and studies related to this article, log onto [www.samcleanswater.org/pollutionprevention](http://www.samcleanswater.org/pollutionprevention).

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Content: Project Blueprint<sup>SM</sup> and contributing writers.

Photos: Aerial photo © 2002-2007 Kenneth & Gabrielle Adelman, California Coastal Records Project, [www.Californiacoastline.org](http://www.Californiacoastline.org); Surfrider Foundation/San Mateo County chapter, [www.surfridersmc.org](http://www.surfridersmc.org); San Mateo County Public Works; City of Palo Alto; Project Blueprint<sup>SM</sup>; Tony Pullin/SAM.