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GENERAL MANAGER'S CORNER

## Orphaned Nutrient Pounds Should Not Call The James River Home

**T**he great environmental debate continues: How can Virginia best meet the *Chesapeake 2000* agreement while wisely spending limited public funds? More importantly, do the Tributary Strategies support the overall goal of improving Bay water quality, or do they focus primarily on reducing nutrients? In particular, I question the "strategy" of the proposed 2004 James River Tributary Strategy as an environmental scientist with 40 years of experience evaluating nutrient issues of state waters.

The proposed 2004 James River Strategy is more stringent and costly than the existing 2000 strategy, with ensuing costs skyrocketing from \$300 million to \$1.6 billion. Costs are certainly impor-

tant, but the lack of scientific justification for greater stringency is my single greatest concern with the proposed strategy.

including Virginia, established an annual limit of 175 million pounds of nitrogen entering the Bay by 2010, down from the present 285 million pounds. Currently, HRSD is maintaining 1996 nutrient levels despite a growing population, consistent with the 2000 strategy.

The burden of making the nitrogen reductions was distributed among each state and tributary. For the James River, the science supported the same level of effort as the 2000 strategy. However, more rigorous reductions were recommended for the northern Bay area, to eventually be included in the proposed strategies for that area.

While many stakeholders supported this approach, the State of Pennsylvania indicated it would not commit to more stringent controls than those in the northern areas, including Virginia and Maryland. Pennsylvania's refusal to reduce northern Bay pollution to more stringent levels "orphaned" some 4 million pounds of nitrogen reductions needed for the Bay.

To help find a home for the orphaned pounds, Virginia agreed to adopt 1.5 million orphaned pounds by imposing more strict reductions in the James River. It is ironic – no, tragic – that this transfer of pounds will negatively impact the northern Bay and provide no benefit to the southern Bay. Scientists have proven that nitrogen reduction in the James

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Northern Bay Rivers	Southern Bay Rivers
Susquehanna	York
Patuxent	James
Potomac	Elizabeth
Rappahannock	

Virginia's wastewater agencies have not been shown why more strict controls are needed or what specific improvements would be realized. I would think that such basic demonstrations of need and benefit would be required to justify an expenditure of \$1.6 billion.

The technical issues are complex and many, but the issue of "orphaned nutrient pounds" is a prime example of misdirected science. Bay Agreement partners,

# HRSD Helps Hampton Solve Bacteria Mystery

The City of Hampton is tracking the source of enterococci, or bacteria, that have caused the closure of area beaches. Although no closures have occurred this year, the city closed Buckroe Beach last August for 19 days due to high bacteria levels. The city has enlisted the scientific expertise of HRSD and Virginia Tech to investigate the source of the enterococci contamination. Enterococci exist in fecal matter and pose risks to human health.

Bacteria detectives are performing sampling and analyses to solve the mystery of the bacteria source, whether it be human, pet, or wildlife waste. HRSD is collecting samples and monitoring the water quality at Buckroe Beach, in conjunction with the Hampton Health District beach monitoring program. The Hampton Department of Public Works has partnered with HRSD for sampling and analytical services, which are provided through HRSD's Municipal Assistance Program.

The agreement specifies that HRSD will collect samples and perform analysis for enterococcus, as well as measure pH, temperature, salinity, and dissolved oxygen. The monitoring will be conducted at two storm water outfalls and two beach locations. Samples will be collected weekly from May through October in conjunction with the beach monitoring program. Additional samples will be collected monthly during wet weather. Colonies of enterococcus will be isolated and sent to Virginia Tech monthly for comparison analysis.

HRSD is teaming with Virginia Tech, who is performing bacterial source tracking (BST) analysis. BST is a new method being developed to determine the sources of bacteria from environmental

samples. Virginia Tech can identify the genus and species of the enterococci to differentiate between human, wildlife, and even pet sources as well as specific animal sources (e.g., raccoon, duck, geese, dog).

University scientists use DNA fingerprinting of enterococcus in the lab to target the specific sources. Virginia Tech is collecting



ABOVE: Mike Wiggins from the Technical Services Division investigates potential sources of enterococcus bacteria at Buckroe Beach.

fresh fecal samples in the field and then analyzing and characterizing the DNA of the bacteria found in the samples. The DNA fingerprint of a field sample is entered into the database of catalogued DNA in the Virginia Tech DNA library. If all goes well, a match is made between the field sample and the source of the waste. Criminal investigators use a similar process to match human fingerprints at a crime scene with convicted criminals' fingerprints stored in their databases.

If the Buckroe Beach DNA match indicates human waste, the cause or causes could be failing septic systems, leaking sewer lines, cross-connected pipes (sewer pipes connected to the storm water system), sewer line overflows, or possibly wastewater dumped from recreational boats. If dog waste is the culprit, then the City of Hampton would need to enhance its storm water education program to urge dog owners to pick up after their pets. If wildlife is the problem, the city may need to consider relocating storm water catch basins away from the beach. Animal waste is a key pollutant found in storm water runoff, the primary source of contaminants in waterways.

The sampling and analyses will take several months to complete. The new method of BST expands the ability of science to target the sources of enterococci contamination. The City of Hampton will use the analytical results from HRSD and Virginia Tech to help the city determine the course of action to pursue. Recent beach monitoring programs such as the one at Buckroe Beach are bringing the problem of bacterial contamination to light, yet it has likely existed for decades.

Through the Municipal Assistance Program, HRSD provides environmental analysis and monitoring, training, and consulting to Virginia government agencies, sharing our expertise and resources. Municipalities may contact Danny Barker, Environmental Scientist, at [dbarker@hrsd.com](mailto:dbarker@hrsd.com) or (757) 460-4247 for more information or to request services.

# HRSD Honored For Management Excellence, Peak Performance, and Engineering Excellence

## AMSA Excellence in Management

Each year the Association of Metropolitan Sewerage Agencies (AMSA) presents awards that are considered the Oscars of the wastewater treatment industry. This year HRSD received the first-ever Excellence in Management Recognition, which is valid from 2003 to 2006. Thirty-seven public wastewater agencies throughout the nation were honored for successfully implementing progressive initiatives that address the wide range of management challenges facing the clean water community. Specifically, HRSD demonstrated these key efforts to earn this prestigious award:

- Development and ongoing implementation of a long-term facilities plan and/or strategic plan
- Reductions in the cost or usage of chemicals and utilities
- Design and implementation of an environmental management system or implementation of a total quality system
- Workforce-related initiatives such as leadership/succession planning
- Implementation of water reuse
- Financial and budgetary practices, including debt structuring, revenue generation, and rates management
- Watershed-based activities

## AMSA Peak Performance

AMSA has recognized all of HRSD's eligible treatment plants as peak performers, demonstrating excellence in wastewater treatment. This year, our smaller facilities were eligible to enter. Located on the Middle Peninsula, these facilities discharge less than one million gallons per day. Consistent winners, HRSD plants have received 151 Peak Performance Awards since AMSA established the program in 1987.

Peak Performance Awards are presented in three categories: platinum, gold, and silver. HRSD plants received Gold Awards for meeting all permit limits in 2003 and Silver Awards for five or fewer permit violations in 2003:

### Gold Awards

Army Base (Norfolk)  
Boat Harbor (Newport News)  
James River (Newport News)  
Nansemond (Suffolk)  
Virginia Initiative Plant (Norfolk)  
Williamsburg  
York River (Seaford)

### Silver Awards

Atlantic (Va. Beach)  
Chesapeake-Elizabeth (Va. Beach)  
Mathews  
Urbanna  
West Point

## ACEC Engineering Excellence

The American Council of Engineering Companies (ACEC), North Carolina section, has cited our York River Water Reclamation Facility for engineering excellence. The WaterReuse Association, the nation's only organization dedicated to water reclamation, also recognized HRSD for the initiative, presenting their 2003 Project of the Year Award.

HRSD (with Giant Industries, Inc.) implemented Virginia's first municipal industrial water reuse project at our York River Treatment Plant in July 2002. Since operations began, HRSD has furnished more than 250 million gallons of reclaimed water to Giant Industries' Yorktown Refinery.

The success of the project is a reflection of organizational cooperation, determination, and motivation. The York River Treatment Plant staff, in particular, should be commended for ensuring that the daily operations have not only met – but also exceeded – the expectations of the Yorktown Refinery.



ABOVE: Donnie Wheeler, HRSD General Manager (center), accepts the prestigious management award from Ken Kirk, Executive Director of AMSA, and Marian Orfeo, Chair of the AMSA Awards Committee.

## Bob Maunz: Virginia's Laboratory Analyst Par Excellence

The Virginia Water Environment Association (VWEA) has presented Bob Maunz (Microbiology Section Chemist) with the 2004 Laboratory Analyst Excellence Award, the association's highest recognition of a laboratory professional. The award honors individuals for outstanding performance, professionalism, and contributions to the water quality analysis profession. Bob was recognized during the 2004 VWEA annual meeting in Portsmouth.

Since 1987 Bob has performed environmental analyses of wastewater and drinking water, leading the Microbiology Section of our Central Environmental Laboratory since 1996. Most recently, he has performed method validation studies for the U. S. Environmental Protection Agency (EPA). Participation in the studies helped to ensure that EPA methods can produce valid lab results for testing *E. coli* and enterococcus in environmental samples. Also, he helped develop microbiological techniques to evaluate the effectiveness of a new technology to remove invasive species from ballast water.

Although Bob has been instrumental with developing new lab methods, he is highly regarded for his daily initiative, problem solving, and teamwork. When EPA asked HRSD to perform method validation studies, Bob

not only completed his daily analytical duties, he also altered his schedule to accommodate this special request. In addition, he offers to serve as the lead analyst on weekends, receiving samples, overseeing lab operations, and performing analyses. Area high school students have benefited from Bob's tutoring for microbiology-related science projects.

As a problem solver, Bob never questions whether a task can be done; he immediately evaluates how it can be done. Analytical work requires continual problem solving, especially with new studies. An analyst must always keep a sharp eye for any piece of equipment, supply, or sample that could impact the results.

Known for his team spirit, Bob helps other lab sections with analytical work on weekends and holidays and serves on a team that is evaluating lab scheduling to optimize resource efficiency. As a leader, he considers the needs and work of the entire lab, not just the Microbiology Section, and is always willing to lend support when and where needed. Congratulations to Bob on his outstanding achievement!



RIGHT: Bob Maunz, Virginia's laboratory analyst par excellence.

## HRSD Permitted Facilities Honored For Environmental Excellence

HRSD recognized 149 permitted facilities for outstanding pollution prevention (P2) measures and exemplary permit compliance in 2003. Awards were presented for platinum, gold, and silver pretreatment excellence and pollution prevention.



Five facilities received Platinum Awards for perfect permit compliance for the years 1999-2003:

- Bennette Paint Manufacturing Company, Inc.
- Box USA Group, Inc.
- Shorewood Packaging Corporation
- The Virginian-Pilot, Greenwich Facility
- Yorktown Power Station

Gold Awards were presented to 92 facilities that had perfect permit compliance in 2003. Silver Awards were presented to 49 facilities with few permit violations in 2003.

P2 Awards are presented to facilities for outstanding multimedia (air, land, water) efforts that focus on reduction of waste (or its toxicity) at the source, rather than traditional treatment, control, and disposal. The P2 Award winners for 2003 were:

- Department of Homeland Security, U. S. Coast Guard, Integrated Support Command
- U. S. Navy, Sewells Point Complex (Naval Station Norfolk)

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# Water U Doing For The Earth?

## Earth Action Day, Atlantic Treatment Plant

Nearly 100 Virginia Beach high school students and scouts discovered the wonder of science at our Atlantic Treatment Plant and Progress Farm. For the fourth annual event, participants learned through hands-on activities that enhanced environmental awareness through action.

Tomorrow's leaders measured water quality, built nesting sites for endangered species, planted a wildflower garden, and toured the plant. Four participants learned how the City of Virginia Beach collects wastewater and how HRSD treats it to ensure clean, healthy waterways. Virginia Beach Mayor Meyera Oberndorf addressed the event participants, delivering her message of environmental stewardship.

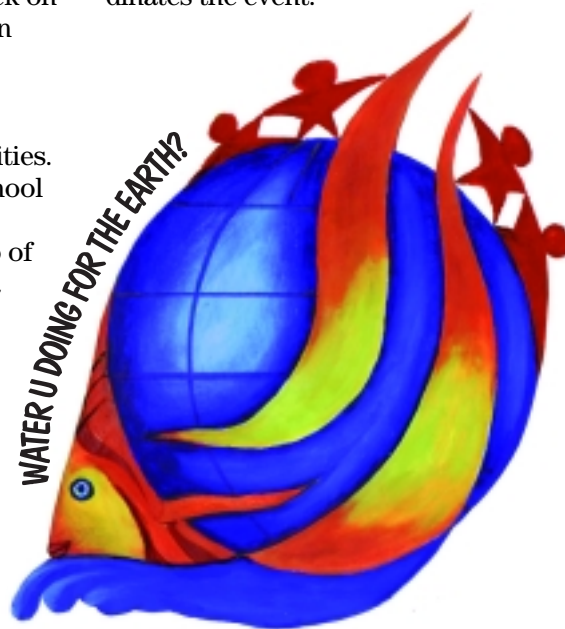
For the Earth Action Day art contest, Virginia Beach high school students were invited to submit designs that reflected the theme *Water U Doing for the Earth?* Senator Yvonne Miller and HRSD Commission Chair Bill Pierce presented the grand prize to Stephen Suratos, a senior at Salem

High School. Honorable mention awards were presented to tenth graders Hallett Connor and Cheli Scott (Princess Anne High School), Meredith Ross (Tallwood High School), and Evan Sokol (Salem High School). To view all award-winning entries, visit <http://www.hrsd.com> and click on News and Education and then Earth Action Day.

Virginia Commonwealth University students also contributed their artistic abilities. Undergraduates from the School of Mass Communications produced a five-minute video of event highlights. To request a copy of the video, contact Nancy Munnikhuisen, Chief of Communications, at [nmunnikhuisen@hrsdc.com](mailto:nmunnikhuisen@hrsdc.com) or (757) 460-7058.

Joining HRSD as event sponsors were Virginia Beach City Public Schools, Ocean Lakes High School, the Virginia Beach Department of Public Utilities, Norfolk Botanical Gardens, and the Virginia Environ-

ment Association. Other participating public agencies include the Virginia Department of Game and Inland Fisheries, the Virginia Beach Sheriff's Office, and the U. S. Navy Dam Neck Medical Corps. Erwin Bonatz, manager of the Atlantic Treatment Plant, coordinates the event.



RIGHT: Public officials present art contest winners with certificates and cash awards.

Front row (l-r): Sen. Yvonne Miller; Virginia Beach School Board Member Sandra Smith-Jones; Honorable Mention Award Winners Cheli Scott, Hallett Connor, Evan Sokol, and Meredith Ross; and Grand Prize Winner Stephen Suratos  
Back row (l-r): HRSD Commission Chair Bill Pierce, Virginia Beach Council Member Harry Diezel, and Virginia Beach School Board Member James DeBellis



## Honorees

continued from page 4

- Shorewood Packaging Corporation

To protect the environment and our system, HRSD issues permits and monitors wastewater discharged from businesses and industries. These facilities pretreat their wastewater before discharging it to HRSD's system. This year marks the seventh annual recognition for P2 Award winners and the eleventh for Gold and Silver Pretreatment Excellence Award winners. The annual awards program is funded through the fines paid by facilities that do not meet their HRSD industrial wastewater discharge permits.

*WaterWays* is published twice a year and highlights HRSD's activities, projects, innovations, services, and goals.

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Communications Division  
P.O. Box 5911  
Virginia Beach, VA 23471-0911

For further information, contact  
Nancy E. Gray  
Public Information Manager  
(757) 460-7049  
ngray@hrsd.com

At HRSD our mission is to prevent pollution, protect public health, and support community development by providing wastewater collection, treatment, and related services.



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## Kudos

The following employee received the Class II license, Wastewater Works Operator, issued by the Virginia Department of Professional and Occupational Regulation:

**David Ewing**, Plant Operator (Chesapeake-Elizabeth Treatment Plant)

The following employees received the Class IV license, Wastewater Works Operator:

**Mike Dandrea**, Plant Operator (Chesapeake-Elizabeth Treatment Plant)

**Craig VanKleek**, Maintenance Operator (Chesapeake-Elizabeth Treatment Plant)

The following employees received the EPA Visible Emissions Evaluation Certification, which enables them to monitor the quality of our plant air emissions:

**Chris Duke**, Lead Operator (York River Plant)

**Reuben Haas**, Lead Operator (Boat Harbor Plant)

**Larry Wagoner**, Lead Operator (Atlantic Plant)

Other employee achievements:

**Carolyn Cagle**, Industrial Hygienist (Safety), has been designated as a Certified Hazardous Materials Manager, Master Level, by the Institute of Hazardous Materials Management.

**J. R. Cannon**, Procurement Manager (Finance & Administration), was appointed to the Communications and Marketing Committee, National Institute of Governmental Purchasing.

**Nancy Gray**, APR, Public Information Manager (Communications), was elected to the Board of the Hampton Roads Chapter of the Public Relations Society of America.

**Norman LeBlanc**, Chief of Technical Services (Water Quality), was appointed to the Panel of the Science Advisory Report for EPA. In this role, Norm will evaluate the agency's Report on the Environment and make recommendations to the EPA Administrator.

**Dave Morse**, Automotive Superintendent (Engineering), is serving as Vice-Chair of the Automotive Advisory Board at Tidewater Community College.

**Linda Wade**, Procurement Specialist (Finance & Administration), was reappointed as Co-Chair of the Professional Development Committee, Virginia Association of Governmental Purchasing. She was also recertified as a Certified Professional Public Buyer by the National Institute of Governmental Purchasing.

**Donnie Wheeler**, General Manager, has been elected Vice President of AMSA. On the state level, VWEA has honored him with the 2004 Enslow-Hedgepeth Award for Outstanding Service. Donnie was also presented with the 2004 Environmental Leadership Award, Honorable Mention, local government category.

**Paul Wilson**, P.E., Interceptor Engineer (Interceptor Systems), received his Professional Engineer license from the Virginia Department of Professional and Occupational Regulation.

**Lisa Yoder**, Payroll Coordinator (Accounting), received the Fundamental Payroll Certification (FPC) from the American Payroll Association.

**Cheryl Young**, Human Resources Analyst (Finance & Administration), was recertified as a court-referred mediator by the Supreme Court of Virginia.

## State Operations Challenge Victory

HRSD Bio-Force took top honors in the state Operations Challenge competition, held in **Portsmouth**. Team members **Erin Girardi, Mike Harris, Joel Niemi, and Wesley Warren** earned a perfect score of 500, winning first place in all five events. Support from team alternates **Wes Printz and Jason Warren** helped make this victory possible.

Two other teams will represent Virginia in the international competition to be held in October in New Orleans: the Collectors (the **City of Virginia Beach** team that placed second) and OMI Fluid Dynamics (**City of Franklin**). Congratulations and good luck to HRSD Bio-Force and coach **George Gregory!**

## HRSD Commissioner News

**Governor Mark R. Warner** has reappointed **William “Bill” H. Pierce** and **Douglas E. Miller** as HRSD Commissioners. Doug Miller began his commission term this spring, representing **Hampton**. He is an attorney with Patten, Wornom, Hatten & Diamonstein and earned his J.D. from the College of William and Mary. A resident of Hampton for more than 30 years, Mr. Miller also serves as the Chair of the City of Hampton Arts Commission, a 13-member commission appointed by City Council to advise city legislators on public arts projects.

In related news, **Bill Pierce**, a former Chesapeake City Council member, has been re-elected as Chair of the HRSD Commission. **R. Tyler Bland III**, former mayor of West Point, has been re-elected as Vice-Chair.

## HRSD Enabling Act Revisions

**Governor Mark R. Warner** approved Senate Bill 654, the measure that updated HRSD’s enabling act. The amendments included adding **King and Queen County** to our service area and revising outdated language. The text of this bill and others can be found at <http://legis.state.va.us>.

## Hickory Treatment Plant (Chesapeake) Update

As part of the Edinburgh development (S. Battlefield Boulevard), the **City of Chesapeake** has connected their pipeline to an HRSD force main. Until flow could be diverted to our system, we operated the city’s Hickory Treatment Plant under a contract with the school system. The plant, which has been deactivated, once served four public schools. Built in the mid-1990s, it provided tertiary treatment, with a design capacity of 43,000 gallons per day.

## NEW BRANDING

## Nutri-Green® Compost: Recycling That Grows

As part of a Nutri-Green® branding campaign, our ever-popular compost has a new logo, slogan, and bag design. Nutri-Green® customers can look for the new bags in the marketplace this fall. Each year HRSD sells approximately 11,000 tons of the bulk compost and 1,400 tons of the bagged compost, which is used as a soil conditioner.

Since the biosolids management program began in 1981, HRSD has sold all compost produced, eliminating the need for disposal and therefore preserving valuable landfill space. Wastewater agencies throughout the country often struggle to develop successful markets for their biosolids products, while we struggle to meet the demand for our popular product.

Tune in to the “Green Tips” gardening show on WTAR 850 AM on Fridays at 5 p.m. Show listeners can call with gardening questions, which are answered by **Rhonda Bowen**, HRSD Recycling Manager, and **Steve Urick** with McDonald Garden Center. Rhonda can be reached at [rbowen@hrsd.com](mailto:rbowen@hrsd.com) or (757) 460-4270.



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## General Manager's Corner *continued from page 1*

River affects the Bay main stem minimally.

As a result of these types of dramatic changes in the proposed James River Strategy, 50 percent of Virginia's Bay dollars would be spent in the James basin. This is a five-fold increase from the goals established four years ago. This simply does not make sense. The James River is healthy, with good dissolved oxygen levels and a very productive fishery.

Substantial nitrogen reductions can be made with the controls touted in the 2000 James River Tributary Strategy. These improvements are justified by the water quality needs of the river. The need for additional controls has not been demonstrated. We should give the 2000 strategy a chance before we embark on an effort with unproven needs.

In response to the Tributary Strategies, Virginia's wastewater agencies support phased construction of treatment plant upgrades. Typically, the state's regulations allow only four years to upgrade plants once a permit is issued. We believe that the simultaneous upgrades of 100 or 200 plants could wreak havoc, increasing bid prices, delaying projects, and risking litigation. A reasonably phased construction over 10 or 15 years would allow plants to still complete their upgrades long before the necessary non-point source reductions are completed.

Water quality improvement funding is also needed, as are low interest loans through the state revolving loan fund. Virginia's wastewater agencies question whether this critical state funding program can keep up with the

state environmental program. Under the proposed 2004 James River Tributary Strategy, upgrades to HRSD's treatment plants alone could cost \$171 million according to the Virginia Department of Environmental Quality, although we expect it could cost closer to \$200 million.

I cannot, in good faith, recommend that the state invest its water quality improvement dollars – and that local governments increase sewer rates – to adopt and fund Pennsylvania's orphaned pound reductions. Virginia's wastewater agencies will do whatever science indicates will improve the Bay, but the proposed strategy does not show a need for more stringent controls in the lower James. Legislative actions must return the James River Tributary Strategy to sound science.

For mailing list changes,  
please contact Joanne  
Drinan at [jdrinan@hrsdc.com](mailto:jdrinan@hrsdc.com)  
or (757) 460-4276.

ADDRESS SERVICE REQUESTED

Virginia Beach, VA 23471-0911  
P.O. Box 5911

