Florida Specifier

Practical Information For Environmental Professionals

Single Copy Price: $5

October 2013

Volume 35, Number 10

Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Fire away. And don't forget to fill us in on your organization's new people and programs, projects and technologies—anything of interest to environmental professionals in the state. Send to P.O. Box 2175, Goldenrod, FL 32733. Call us at (407) 671-7777; fax us at (407) 671-7757, or email mreast@enviro-net.com.

Address label changes?

If your mailing label is inaccurate or incomplete in any way, please contact us with your current information at P.O. Box 2175, Goldenrod, FL 32733; call us at (407) 671-7777; fax us at (407) 671-7757; or email us at info@enviro-net.com. We appreciate your assistance.

Presorted Standard
U.S. POSTAGE
PAID
ORLANDO, FL
PERMIT 1556

1310

CHANGE SERVICE REQUESTED

Florida Specifier
P.O. Box 2175
Goldenrod, FL 32733

Photo courtesy of URETEK Holdings Inc.

Technicians from URETEK Holdings Inc. implement the Deep Injection™ Process of polyurethane injection to form an in-situ vertical contamination cutoff wall at an FDOT District 4 site in Riviera Beach. This project will be among those discussed at the FDOT panel discussion during the 2013 Florida Remediation Conference.

DEP issues new guidance, revamps Low-Scored Site Initiative program

By ROY LAUGHLIN

As part of its efforts to reform petroleum cleanup regulations, the Florida Department of Environmental Protection released its new Low-Scored Site Initiative guidance in August.

The document includes provisions that limit eligible sites to those with a score of 29 or below; restrict funding to $30,000 or less; redefine the meaning of "no further action" with reference to site closure; and establish and define copayment and cost-sharing requirements for responsible parties.

Sites with a risk evaluation score of 29 or below are eligible for the LSSI assessment under the new guidelines. According to Jorge Caspary, PG, director of the DEP Division of Waste Management, the score break at 29 indicates that a contaminated site has no drinking water well close enough to contamination to pose a risk.

The LSSI program has been in existence since 2010 and earlier had used a lower score for participation. This score redefines the risk relative to potentially potable water contamination and is consistent with the original intent to protect drinking water resources.

Some background about the LSSI initiative may be helpful for understanding the new guidance.

The DEP's list of eligible sites for cleanup currently numbers over 17,300. About 3,400 of those have remediation efforts underway.

This list of petroleum-contaminated sites includes a significant number of facilities, more than 6700, that have never been assessed or whose assessment score has been low enough that remediation efforts have not been made and are unlikely to be initiated in the foreseeable future.

Site selection is made based on risk and actual remediation is dependent on annual funding, in recent years roughly $125 million annually.

Some of the low-scored sites have been listed for years–well before the LSSI program began. The owners or responsible parties of these sites typically have little incentive to undertake remedial activities.

The low score gives the sites such

LSSI
Continued on Page 6

Conference preview:

2013 FRC event features mix of technology, policy talks

By ROY LAUGHLIN

Soil and groundwater cleanup in Florida is a high-tech industry, driven by both policy and economics. Each year, the Florida Remediation Conference highlights important aspects of both to provide environmental cleanup professionals with useful insights.

FRC Chair Nick Albergo

This year, policy exerts more influence in the short term than technology in two important state programs. First, the newly reformed state Petroleum Restoration Program is rapidly modifying its practices under legislative mandate.

In addition, during its last session, the Florida Legislature redefined and limited conditions for tax incentives in the Brownfields program.

Both consultants and their clients must now make sense of distinctly different regulatory conditions than existed just a year ago. This year's conference has multiple sessions dealing with the facts and implications of these policy changes.

In contrast to policy, cleanup practitioners anticipate annual change on the technology front. The discussion of emerging technology has always been FRC's primary focus, and a sharper focus on policy initiatives this year will not change that.

"It will be one of the better technical conferences that we've had, introducing new concepts and practices that will advance remediation in Florida," said FRC Chair Nick Albergo, PE, DEE, principal with HSA Engineers & Scientists in Tampa.

This year, the technical agenda is more expansive than ever with the inclusion of several concurrent sessions.

"Simultaneous sessions give participants the chance to choose," said Albergo. "We can cater a bit more specifically to the needs of our attendees."

The state transportation sector may not at first glance seem like a big player within the remediation industry. But road projects increasingly involve land with contamination issues.

Day One of the conference features

FRC
Continued on Page 12

EPA proposes electronic reporting of Clean Water Act permit data

Staff report

The U.S. Environmental Protection Agency proposed a rule to require National Pollutant Discharge Elimination System permit holders to submit required reporting data electronically via the Internet.

Currently, the Clean Water Act, of which NPDES is a part, requires permit holders to monitor the composition and volume of discharges directly into waters of the U.S.

Permittees may also be required to provide information about management and mitigation actions involving their discharges. Monitoring results are presently reported on paper to state and other regulatory authorities.

The EPA's proposal outlines a new E-reporting rule protocol under which municipalities, industries and facilities obligated by NPDES permits would adopt and use an electronic data reporting system. The data system will report directly to the appropriate regulatory authority.

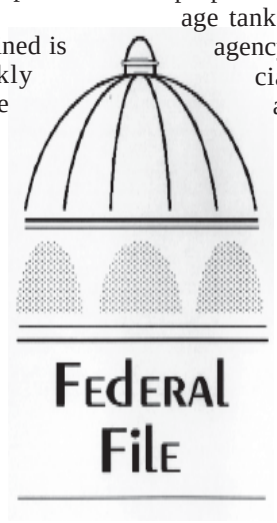
Electronic data submission will be required within a year of rule adoption with exceptions expected for data reporters with inadequate electronic reporting capabilities.

For those in the second group, the agency intends to provide support to "develop or enhance state electronic reporting capabilities."

The EPA cited several advantages to the proposed rule change. First, it will save approximately $29 million annually across the country. It will also allow regulators to spend less time on paperwork and more time on efforts that directly improve water quality.

In addition, the data obtained is expected to be more quickly added to publicly accessible online databases. Data from all states and territories should be available within the same time frame after collection, a benefit the EPA sees as a fairness issue for all data reporters.

More information is available on the web at http://www2.epa.gov/compliance/proposed-npdes-electronic-reporting-rule.



Oil, gas storage tank standards. In August, the EPA promulgated updated emission standards for oil and gas storage tanks that annually emit six or more tons of volatile organic compounds.

Tanks brought into use after Apr. 12, 2013, must reduce VOC emissions by 95 percent within 60 days of initial use or by Apr. 15, 2014—whichever is later.

Storage tanks in use before Apr. 12, 2013, must reduce VOC emissions by 95 percent no later than Apr. 15, 2015.

These are essentially the same rules proposed for temporary oil and gas storage tanks last April by the EPA. The agency's rationale is that tanks associated with recently drilled oil and gas production wells release more VOC. Over time, VOC releases associated with production activity at a well will wane.

The EPA's rule distinguishing between young production facilities and mature facilities is an effort to reduce VOC releases from the biggest emitters first.

In its announcement, the agency said that the number of oil and gas wells drilled increased far more than the agency expected when it began drafting rule proposals a couple of years ago.

The updates also incorporate more recent data than was available during the original planning, including accounting for the unexpected increase in hydraulic fracturing as a production method.

The EPA said that the updates respond to petitions for reconsideration of the 2012 New Source Performance Standards for oil and natural gas production.

Wind, solar facility siting. Siting alternative energy production facilities—those exploiting wind, solar or other renewable energy sources—is highly competitive with other land uses.

Contaminated lands, and former landfills and mine sites are typically subject to less competition for alternative uses.

With this in mind, the Obama administration made a special effort to give contaminated sites consideration when locating alternative energy generation facilities.

As part of the Obama administration's alternative energy initiatives, the EPA has released an updated RE-Powering Mapping and Screening Tool that lists 66,000 sites across the country, an increase of 42,000 sites from the original 24,000 sites listed in 2008.

According to the EPA, screening criteria in the new mapping tool identify more than 10,000 contaminated sites that could host a 300-kilowatt or greater solar array.

If the identified areas were developed for solar energy production, they would produce 30 times more solar energy than is currently produced by all renewable energy systems in the U.S.

Today, only 70 renewable energy projects are in operation on contaminated lands or landfills. They produce about 200 MW of installed capacity, sufficient to power about 30,000 homes.

Green sports directory. The EPA unveiled a new online Green Sports Resource Directory that can "help teams, venues and leagues save money and reduce carbon pollution through increased energy efficiency."

The directory advises organizations on reducing waste and gaining recognition for their programs that reduce the environmental impact of their events.

The agency is partnering with the Green Sports Alliance, an organization of more than 180 members that works with 75 teams on both the professional and collegiate levels, and more than 100 stadiums and sports venues in the U.S.

With its Green Sports Resource Directory, the EPA provides methods and advice for improving waste management, water and energy conservation, and other sustainability initiatives.

To track winning efforts, the EPA compiled a green scoreboard to highlight winning efforts by sports leagues and a tally of "environmental and saving benefits."

The Green Sports Resources Directory is available at: http://www2.epa.gov/green-sports.

EIS exclusions. The U.S. Forestry Service published a final rule that grants categorical exclusions from environmental impact statements under certain circumstances.

EISs will no longer be required when restoring uplands, wetlands, floodplains and riparian systems to natural conditions that involve removal of other structures; removing debris and sediment following disturbance events such as floods and hurricanes; and restoring lands occupied by roads and trails.

These three types of activities will now receive a categorical exclusion from environmental assessments that otherwise would be required under NEPA, the National Environmental Policy Act.

The Forest Service typically prepares 2,000 to 2,500 categorical exclusions and 400 environmental assessments annually. The service reports that assessments take three times longer to prepare than categorical exclusion documentation.

The agency said that allowing more categorical exclusions will "allow the forest service to more efficiently analyze and document potential environmental effects of soil and water restoration projects intended to restore the flow of waters to natural channels and floodplains."

The new rule allowing categorical exclusions may be used in projects to restore and stabilize lands now occupied by roads and trails. But such exclusions will not be used on projects involving National Forest System roads or trails, or the public use of them.

Ocean current power study. Florida Atlantic University's Southeast National Marine Renewable Energy Center overcame a major hurdle in August when the Bureau of Ocean Energy Management issued its final environmental assessment with a finding of no significant impact for a planned offshore power generation testing center.

SNMREC, a research unit with substantial U.S. Department of Energy funding, intends to establish test berths to evaluate turbines that one day may generate electricity. In this case the current will be the Gulf Stream.

The decision moves FAU closer to the next milestone—applying for permits and a five-year lease to conduct turbine tests on the Outer Continental Shelf.

To facilitate turbine tests, SNMREC will place a set of mooring buoys anchored in deep water about 13 miles from shore.

FEDFILE

Continued on Page 16

Florida Specifier
P.O. Box 2175
Goldenrod, FL 32733
Phone: (407) 671-7777
Fax: (407) 671-7757
www.enviro-net.com

MICHAEL R. EASTMAN
Publisher/Editor
mreast@enviro-net.com

Support services provided by
OSS
Orlando, FL

Contributing writers and columnists

SUSAN BEASON
Public Informaton Specialist
Florida Dept. of Environmental Protection
Tallahassee, FL

PRAKASH GANDHI
Senior Environmental Correspondent
Orlando, FL

BLANCHE HARDY, PG
Environmental Correspondent
Sanford, FL

LYLE JOHNSON
President
Florida-Spectrum Environmental Services Inc.
Ft. Lauderdale, FL

ROY LAUGHLIN
Environmental Correspondent
Rockledge, FL

JEFF LITTLEJOHN, PE
Deputy Secretary for Regulatory Programs
Florida Dept. of Environmental Protection
Tallahassee, FL

DAN MILLOTT
Environmental Correspondent
Miami, FL

SUSAN TELFORD
Environmental Correspondent
Jupiter, FL

The *Florida Specifier* makes every effort to ensure the accuracy and validity of all editorial and advertising content. The newspaper is independent in its views and does not support, endorse or guarantee any data, statements or opinions that appear under any reference or are attributed to or quoted from any known source. The views expressed by authors do not necessarily reflect the views of NTCC Inc. or the *Florida Specifier*.

The *Florida Specifier* (ISSN 0740-1973), founded in 1979, is published each month for $24.95 per year ($49.95 for three years) by National Technical Communications Co., Inc., P.O. Box 2175, Goldenrod, FL 32733. Subscription refunds are not provided.

Standard postage paid at Orlando, FL 32862. **POSTMASTER:** Send address changes to the FLORIDA SPECIFIER, P.O. Box 2175, Goldenrod, FL 32733.

ENVIRO-NET
www.enviro-net.com

National Technical Communications Company, Inc.
P.O. Box 2175 • Goldenrod, FL 32733
(407) 671-7777 • Fax (407) 671-7757
info@enviro-net.com

Florida leaders announce $37 million to cleanup state's springs

Staff report

Florida springs received a huge boost in September when Gov. Rick Scott and state lawmakers set aside $37 million in public money to start restoration work at some of the state's best-known springs.

The statewide program includes $11 million from the state's Florida Families First and Department of Environmental Protection budgets, plus about $26 million from local governments and the state's five water management districts.

More than half the program's $37 million will be spent on Silver Springs, which suffers from decreasing water flows and pollution from fertilizer-laden stormwater and sewage.

In addition, a city of Ocala wastewater treatment plant will be upgraded and Marion County's effluent discharge will be rerouted from a spot near Silver Springs to a golf course for use in irrigation.

The program also includes $4.6 million to upgrade a Lake City wastewater treatment plant that discharges effluent into an area near the Ichetucknee Springs and the Ichetucknee River.

About $3.5 million will be used to help pay for a pipeline that will allow the city of Apopka to use treated wastewater and collected stormwater for irrigation instead of dumping it into the Little Wekiva River.

Manatee waste to energy. The Manatee County Utilities Department has contracted with SCS Energy—a Concord, MA-based environmental engineering and construction firm—to design, build and operate an electricity-generating plant using methane for fuel.

The project will allow the county to use the gas to power its wastewater treatment plant. It is expected to be complete by late December.

The methane gas is a byproduct of decomposing solid waste in the 316-acre county landfill that opened in 1979. A study indicated 1,500 standard cubic feet of landfill gas is being produced per minute, of which 57 percent is usable methane.

About 600 cubic feet of the gas has been used since 2008 to generate high-intensity heat for a biosolids dryer at the Southwest Water Reclamation Facility built next to the landfill in 1985.

The sludge remaining after wastewater is processed is piped from the treatment plant to the facility or trucked in from two other county water reclamation facilities.

The rest of the landfill gas is currently being flared to prevent it from escaping into the atmosphere.

About 525 cubic feet of methane now being flared will be used to power a combustion engine generator to produce electricity to power the wastewater treatment plant.

The Southeast Water Reclamation Facility uses 12 million kilowatt hours of electricity a year, costing the county about $1 million.

The county expects to save $600,000 a year in power costs.

SCS Energy will design and build the system for $3.6 million and be paid $365,000 per year for ten years to manage and operate the plant.

The landfill is expected to reach capacity and close around 2040 but will continue to produce methane for another 30 years.

State conservation lands. State environmental officials have removed nearly 10 percent of the acreage from its initial list of possible state conservation lands that could be proposed for sale.

Some environmental groups and residents living near the targeted areas were concerned about the initial list of 5,331 acres. But a revised list posted on the Florida Department of Environmental Protection web site removed 474 acres.

The 2013-14 state budget provides $70 million for the purchase of conservation lands, including $50 million from the sale of existing state lands.

Environmental activists said they were skeptical the state could find $50 million worth of land to sell.

Florida Notes

Suwannee medical waste facility. A medical waste facility is now on the drawing board in Suwannee County. Integrated Waste Management Systems Inc. proposed to construct a new medical waste incinerator there. They hope to start construction within the next 18 months.

The proposed facility will consist of four hospital medical infectious waste incinerator units. Each unit will burn 2,500 pounds per hour, a maximum of 30 tons per day of medical waste.

Air pollution controls consist of a sodium bicarbonate injection system and a fabric filter with a catalyst-impregnated structured bag system.

The project is expected to bring 51 to 60 jobs at full operation.

GREC cranks up. The 100-megawatt Gainesville Renewable Energy Center began generating electricity in August. The plant generated a modest 15 megawatts of power from biomass for the Gainesville Regional Utilities electric grid.

The next step is a 500-hour endurance test with the plant running close to capacity. The facility is expected to be commercially operational in mid-November.

About 62,000 tons of biomass fuel is currently on site. The plant has started generating power in spite of local opposition over the terms of the city's 30-year contract to buy all the plant's output at a price of about $130 per megawatt-hour.

The city will not begin paying the contractual rate for electricity until the plant is commercially operational.

GRU plans to use the plant to meet its year-round base-load demand.

Vero Beach ethanol. A facility in Florida has become the world's first large-scale biorefinery to produce ethanol from waste using a technology that combines thermochemical and biological processes.

INEOS' Indian River BioEnergy Center in Vero Beach will be capable of producing eight million gallons a year of cellulosic ethanol from municipal solid waste, lawn clippings and woody biomass.

On the site of an old grapefruit juice

NOTES
Continued on Page 17

Algae samples from St. Lucie Estuary blooms test positive for toxins

Staff report

Algae samples taken from blooms in the St. Lucie Estuary from the St. Lucie Canal to the St. Lucie Inlet tested positive for toxins. Tests by the Florida Department of Environmental Protection confirmed high concentrations of Mycrocystis aeruginosa, a type of cyanobacteria known to make humans and animals sick.

The bacteria result from high levels of stormwater runoff containing nutrients, pet and wildlife wastes, plus human sewage and the discharges of nutrient-rich water from Lake Okeechobee.

These conditions, in combination with low-salinity, warm water and sunlight, produced high concentrations of the toxins starting in late July.

Even before the toxins were confirmed, the Florida Department of Health in Martin County warned residents to avoid contact with the algae known to cause stomach and intestinal illness, respiratory distress, allergic reactions, skin irritations, liver damage and neurotoxic reactions.

Partnership for water quality improvement. The Suwannee River Water Management District partnered with three cities to provide cost-share funds and assist the cities with flood protection and water quality improvement projects.

The city of Newberry received $28,550 in cost-share funds to replace old, ineffective water meters with efficient, precise meters that will help detect water losses in the system and save water once leaks are repaired.

The city of Perry received $350,000 in cost-share funds to assist with improvements to Spring Creek for invasive species removal and establishing native plants to help improve water quality through natural filtration.

The city of Archer received $350,000 in cost-share funds to assist with the construction of a wastewater collection, treatment and reuse system.

Aquafarm withdraws permit request. Sturgeon Aquafarm of Bascom temporarily withdrew its request to increase its daily drawdown from its current 2.8 million gallons to a daily average of 5.7 million from the Floridan Aquifer.

At an open house session at the Northwest Florida Water Management District last month, questions were addressed regarding the permit application with many local residents objecting to the permit request, citing drought and other conditions that will make the drawdown a danger to the environment, wildlife and residents that depend on the aquifer for drinking water and recreational use.

According to district staff, the company will most likely reapply after responding to several questions posed by staff and providing the additional information necessary to complete the permit application.

SFWMD, USACE support CEPP. The South Florida Water Management District's Governing Board unanimously approved supporting the Central Everglades Planning Project by moving forward with the release of a draft report for public and agency review by the U.S. Army Corps of Engineers.

The CEPP will identify and plan for projects on land already in public ownership to allow more water to be directed south to the Central Everglades, Everglades National Park and Florida Bay, while improving the health of coastal estuaries.

The CEPP is also part of the federal process to deliver a technically sound plan, known as a Project Implementation Report, for a host of restoration projects in the Central Everglades to prepare for congressional authorization as required under the Comprehensive Everglades Restoration Plan.

DEP issues permit for A-1. The Florida Department of Environmental Protection issued a permit for the first part of the A-1 Flow Equalization Plan, authorizing the South Florida Water Management District to start construction, operation and maintenance of a 15,000-acre shallow basin south of Lake Okeechobee.

THE WATER WATCH

Designed to store 60,000 acre-feet of stormwater, the basin will reduce the impact of peak stormwater flow by providing temporary storage, and will work in tandem with proposed and existing stormwater treatment areas.

The basin will also contain vegetation to help naturally filter out phosphorous before discharging water to the Everglades.

Florida Rock sues U.S. Sugar. Jacksonville-based Florida Rock Industries filed suit against U.S. Sugar Corp. for breach of contract and the right to pursue construction of a 7,500-acre quarry on land destined for Everglades restoration.

In the complaint, the mining company claims to have suffered losses close to $1.4 million pursuing permits for a proposed quarry near Clewiston. The quarry was to be constructed in sugar cane fields that U.S. Sugar contracted to sell to the South Florida Water Management District.

Representatives from U.S. Sugar stated that the contract to develop the quarry was terminated because Florida Rock had not obtained all of the necessary permits by the Dec. 31 deadline; therefore, the contract was automatically terminated.

Water quality grant. The Southwest Florida Water Management District recently provided Citrus County with a $350,000 grant for the extension of a retention pond near the post office in Crystal River to aid in water quality improvements.

The money will be used to purchase land adjacent to the pond. The pond will be expanded in size by 40 percent.

The expansion, in addition to the drainage improvements occurring alongside the city's road projects and a wetland treatment area at Three Sisters Springs, are all part of the county's water quality improvement plan.

Jax environmental stewardship. The city of Jacksonville, the Florida Department of Environmental Protection and the St. John's River Water Management District hosted a ribbon cutting ceremony this summer to recognize completion of the NAS Jacksonville Wastewater Reuse Project.

Using a $400,000 grant from SJRWMD, the city of Jacksonville, in partnership with installation, environmental and utilities staff, completed construction of a pump station and 800-foot pipeline from the station reuse pond to the station golf course irrigation system.

The new wastewater reuse system will provide over 300,000 gallons per day of treated water from the reuse pond and eliminates the need to pump 37 million gallons a year of groundwater from the Floridan Aquifer.

Best tasting water. The Florida Rural Water Association recognized Marion County as having the state's best tasting water. A panel of judges, made up of professionals from the Florida Department of Environmental Protection and other water supply companies, chose Marion County out of field made up of more than a dozen competitors.

The county will now compete with the rest of the country in the Great American Water Taste Test in Washington, DC, in February.

Consortium: Central Florida fast approaching extent of available groundwater resources

By PRAKASH GANDHI

A consortium of Florida water experts has come out with a troubling projection of water resources in Central Florida over the next 20 years. The group said that the region's aquifer cannot handle the 40 percent increase in water use projected by 2035.

In fact, if the region's utilities were to start pumping all of the groundwater currently permitted by the state today, much of Central Florida's environment would suffer greatly, according to utility and government experts working as a consortium called the Central Florida Water Initiative.

The group estimates that the area's current water use—about 800 million gallons a day—will grow to more than one billion gallons a day by 2035.

Mark Hammond, director of resource management at the Southwest Florida Water Management District, said traditional groundwater sources can meet some, but not all, of the projected needs.

"Some type of alternative sources will be needed," he said. "These could include surface water supply, reclaimed water, conservation and desalination. Other sources will have to be found to meet the region's needs."

The study focused on the region's main source of water, the Floridan Aquifer. The consortium's boundaries include southern Lake County and all of Orange, Osceola, Seminole and Polk counties.

Hammond said 850 million gallons a day is probably a sustainable withdrawal volume. But he said that the existing withdrawal levels are causing harm to the area's springs and wetlands, and requires additional measures to prevent further harm.

Officials said there are solutions to help avoid water shortages from excessive aquifer pumping. These include improved conservation measures, more sophisticated pumping patterns to spread the pressures of water withdrawals, and the use of alternative sources such as the St. Johns and Kissimmee rivers.

Population growth is expected to be the biggest driver of the region's rising demand for water. Based on estimates by the University of Florida's Bureau of Economic Business Research, the number of people living within the consortium's boundaries will grow from 2.8 million in 2010 to 4.1.million in 2035.

Utilities currently provide their customers with about 435 million gallons of water each day. The next biggest user of the aquifer is agriculture, which draws about 185 million gallons a day.

But by 2035, utilities' daily pumping is expected to increase to 653 million gallons, while agricultural needs will remain relatively unchanged at a projected 214 million gallons daily.

Tom Bartol, water supply bureau chief at the St. Johns River Water Management District, said current water use in the area is about 800 mgd. The group concluded that 850 mgd is a reasonable sustainable limit.

"Therefore, there is about 50 mgd of groundwater available before management measures or water source options would need to be identified and implemented," he said.

The group found that the springs, rivers, lakes and wetlands most vulnerable to deterioration from increased aquifer pumping are along the Wekiva River north of Orlando and the ridge area of south Lake County to the west of the city.

Osceola County's demand for water is expected to almost double from 105 million gallons daily to 196 million gallons. Orange County's needs would grow the most, by 118 million gallons a day.

A new groundwater pumping limit is to become part of water supply planning by the state's three largest water management districts involved in the study, the St. Johns River, South Florida and Southwest Florida water management districts.

Later this year, consortium members will start formally presenting their findings to local governments, business groups, and civic and environmental organizations to increase awareness of the looming problem.

Agricultural BMPs, STAs combine to reduce 'Glades phosphorus levels

By SUSAN TELFORD

Reducing phosphorous through implementation of best management practices consistently proves to be an effective strategy for improving Everglades water quality.

That's the message from Daniel O'Keefe, chairman of the South Florida Water Management District's Governing Board.

The most commonly used BMPs include more precise fertilizer application methods, refined stormwater management practices, and erosion control to reduce the amount of phosphorous transported in runoff to the Everglades and connecting water bodies.

The implementation of BMPs produced a 41 percent phosphorous reduction in the 470,000-acre Everglades Agricultural Area south of Lake Okeechobee for the Water Year 2013 monitoring period, May 1, 2012, to Apr. 30, 2013, according to the district.

This is the 18th consecutive year that improved techniques achieved phosphorous reductions that exceeded those required by law.

"These BMPs, working in concert with existing treatment wetlands and the state's restoration strategies initiative, are moving us toward the goal of achieving water quality standards for the River of Grass," said O'Keefe.

In an effort to meet Florida's Everglades Forever Act, the amount of phosphorous leaving the EAA must be 25 percent less than the amount before phosphorous reduction efforts started. The average annual reduction over the 18-year history is 55 percent, more than twice the amount required by law.

A science-based model was used to compute the reductions and make adjustments to account for the influences of rainfall.

Stormwater treatment areas are also providing additional improvements to water quality. Water leaving the EAA and C-139 Basin receive additional treatment in one of several STAs before entering the Everglades.

The constructed wetland filters the water naturally, absorbing the phosphorous while enhancing water quality by further reducing phosphorous levels.

Five STAs south of Lake Okeechobee effectively treat 57,000 acres, and provide natural filtering for 13.4 million acre-feet of water, retaining more than 1,707 metric tons of phosphorous.

Since 1994, Florida has invested more than $1.8 billion to improve water quality in the Everglades and, up until the end of April 2013, more than 4,390 metric tons of phosphorous were filtered using treatment wetlands combined with BMPs.

Farming pilot project to benefit St. Lucie Estuary

By SUSAN TELFORD

In an effort to improve water quality, and restore and protect the St. Lucie Estuary, the South Florida Water Management District recently approved a water farming pilot project to store excess water on citrus land before it can flow to the St. Lucie Estuary.

Under the pilot program, Caulkins Citrus Company will pump water onto 450 acres of its property located along the St. Lucie Canal in Martin County.

This will capture an average of 6,780 acre-feet of water a year that would otherwise flow through the canal from Lake Okeechobee and surrounding basins into the St. Lucie River and Estuary.

"Managing water on these lands, known as the Dispersed Water Management Program, is one tool to reduce the amount of water flowing during the wet season into the lake and discharged to coastal estuaries for flood protection," said district officials in a recent press release. "Private ranch lands in this program currently provide a storage volume of more than 60,000 acre-feet."

The program encourages property owners to either retain water on their land rather than drain it, or accept or detain regional runoff—or both.

Since 2005, the district has been working with a coalition of agencies, environmental organizations, ranchers and researchers to enhance opportunities for storing excess surface water on private and public lands.

LSSI
From on Page 1

low priority that they will never rank sufficiently high enough for action that would result in their removal from the contaminated site list.

The LSSI program received $10 million annually over the past few funding cycles, earmarked to underwrite assessments of the low-scored sites. Many practitioners see this initiative as an effective way to expeditiously and competently reduce the list of eligible sites.

The new LSSI guidance also incorporates the 2013 legislative session's reform mandate, especially with respect to bidding processes and contractual requirements.

One of the primary changes from the earlier LSSI is that participants must complete a one-page application to participate in the initiative. Subsequently, the site will be placed on a list, from which selection depends primarily on a first-come, first-served process.

When a site becomes eligible, a contractor is selected to perform a site assessment. The cost of that site assessment may not exceed $30,000—an amount that, under Florida statute, DEP may obligate without a formal bidding process including soliciting three or more qualifying bids.

Competitive bidding is necessary to meet legislation passed in the 2013 session.

The meaning of "no further action" in LSSI is: "Under the LSSI, the Department will issue either a SRCO or SRCOC as prescribed by Chapter 62-780, FAC, or a LSSI NFA as prescribed by section 376.3071 (11)(b), FS." The implications are important to the LSSI program.

The most desirable outcome for both responsible parties and the DEP is a closure order for a clean site. Most sites, however, will have some level of contamination remaining. If contaminants are deeper than two feet below the surface and below threshold concentrations, the site can get a SRCO NFA designation, "Closure with No Further Action."

"An LSSI NFA given to an owner does not affect liability or marketability because the department is telling the owner that the contamination is minimal," said Caspary.

It means only that as far as DEP is concerned, the site is not eligible for any further action by the agency because it meets its criteria for minimal risk. Other circumstances may, however, influence the owner to undertake further remedial actions.

The third possible end point could be "Site Remediation Closure Order with Conditions." SRCOC may be imposed when contamination is located close to the surface and is of sufficient concentration to pose a risk to human health and the environment.

The conditions usually involve engineering or institutional controls to limit exposure and therefore reduce risk.

Diane Pickett, PG, an environmental consultant with DEP in Tallahassee, said that in the past three years, no LSSI assessment has led to a SRCOC.

One change in the LSSI is subtle: If a site owner voluntarily brings a site into the LSSI assessment process, they cannot reject a NFA finding. In the past, by rejecting an NFA finding, the site owner could perhaps hold out for DEP to perform some remediation that further reduced liability risks or made the property more marketable.

The new philosophy is that liability and marketability are the owner's issues. The DEP focus is only on defined risk to drinking water and surface waters.

Consultants interviewed for this article are divided about the fairness and utility of this new policy for owners and RPs.

Glenn MacGraw, vice president with The FGS Group in Tallahassee, said that the most important issue for consultants and contractors will be to communicate DEP's new policy accurate and completely with site owners and responsible parties.

"I hope contractors tell property owners about the new procedures so they can make good decisions," he said.

The new LSSI guidance includes at least two pages of general instructions for consultants and contractors to follow to complete an assessment that leads to closure.

In addition, it encourages substantial communication between consultants to quickly characterize the status of the site and to confirm that the low ranking is justified for sites that have never been assessed, or to verify that low-ranked sites maintain that status.

Mike Scaringella, director of operations for Handex Consulting & Remediation-SE LLC, said that some sites have been on the list for so long that natural attenuation has already reduced contamination sufficiently to justify site closure under favorable conditions for both the owners and DEP. He is a strong LSSI advocate for that reason.

A look at the LSSI numbers gives some insight as to why the Legislature and DEP see this effort as so cost effective.

In the last fiscal year, DEP spent $24 million to conduct 1205 site assessments for sites that were not in the LSSI program resulting in closure of 132 of those sites (11 percent).

The agency spent $68 million on 1,500 other sites to fund different types of remediation activities from monitoring natural attenuation to construction and maintenance and operation of remedial systems.

That effort netted 175 closures (12 percent of the sites).

But under the LSSI, DEP spent $10 million to perform 239 site assessments leading to closure of 80 sites (33 percent of the sites).

Caspary noted the number of LSSI applications, in the short term, is expected to increase on an annual basis, and will likely be more than can be funded with the $10 million annual allotment expected.

However, over a longer time line, LSSI assessments will lead to a substantial number of site closures that will reduce the list of sites eligible for remediation by DEP.

The LSSI program is important to the contractor and consulting community because small businesses and independent contractors can qualify to perform LSSI assessments as easily as larger consulting entities that can bring their big guns to bear on projects.

For the remainder of this budget year, DEP proposes to spend the full $10 million expected for LSSI initiative, and that should be good news for the cleanup community.

Update on DEP petroleum cleanup funding

The DEP's newly created Petroleum Restoration Program is on a short funding leash to ensure that program reforms are implemented expeditiously.

In mid-September, the program submitted progress and planning documents to the Legislative Budget Commission. In its submission, DEP requested the release in November of $25 million of the $75 million that was to be held until January, 2014.

The funding hold was intended to ensure that reforms were being implemented in a timely manner. Early release of a third of the withheld funding signals that the commission accepts the progress to date and will provide funding to support its continuation.

State contractor designation remains one major change yet to be implemented. DEP officials could not provide a specific date for their announcement regarding the contractor selection process.

But their comments implied that an announcement is not far in the future. By the time readers receive this issue of the paper, the announcement may already be public.

As this issue goes to press, DEP also announced a proposed rule change for specific parts of Chapter 62.780, FS. The department, in announcing proposed rule changes, said that it had not planned to hold public hearings on the changes unless formally requested to do so.

Flagler acquires Plantation Bay utility

By PRAKASH GANDHI

A long-running effort by Flagler County to buy a utility has come to fruition. County commissioners approved a $5.7 million loan agreement with the Florida Department of Environmental Protection to buy Plantation Bay utility.

The county has been attempting to acquire the utility on and off for more than a decade.

The utility has about 1,600 customers, most of whom are in Volusia County. The utility serves the Plantation Bay development of regional impact that straddles Flagler and Volusia counties plus several smaller areas near the development.

In February, officials approved an agreement between Flagler County and the city of Bunnell to purchase the utility and make necessary improvements to the 28-year-old system.

The total cost for purchasing the sys-

FLAGLER
Continued on Page 20

FLORIDA REMEDIATION CONFERENCE

The Premier Soil and Groundwater Cleanup Conference of the year in the Southeast is back!

Oct. 10-11, 2013

Caribe Royale Resort

Orlando, FL

Day One, Thursday, Oct. 10

PDHs for PEs

PEs and others receive continuing education credits for attending

8:00 **Exhibits open**

8:45 **Welcome**
Mike Eastman, Conference Manager

9:00 **Keynote Address from the Conference Chair**
Nick Albergo, PE, DEE, Founder and Former President and CEO
HSA Engineers & Scientists, Tampa

Session 1: Improving Remediation through High Resolution Site Characterization
Moderator: Drew Baird, PG, East Region Manager, Regenesis, Greenville, SC

9:30: **Use of Innovative Fluorescence Technology for Total Recoverable Petroleum Hydrocarbon Screening**
Jennifer Deal, PE, Senior Environmental Engineer, Tetra Tech Inc., Orlando
Kelly Bergdoll, President, KB Labs Inc., Gainesville

A field investigation was conducted using high resolution site characterization to delineate the vertical and horizontal extent of total recoverable petroleum hydrocarbon contamination following the removal of four underground storage tanks of varying fuel types on a site in north Florida. The property is an active industrial property and rapid assessment methodologies were warranted to minimize business disruption. The ultraviolet fluorescence screening method was chosen to allow for expedited delineation of TRPH concentrations to determine the vertical and horizontal boundaries. One hundred and five soil samples were collected and screened in the field over a two-day period. Confirmation soil samples were collected at locations determined in the field based on real time UVF screening data and sent to a certified fixed-base laboratory for TRPH analysis by FL-PRO. Review and comparison of screening and laboratory data revealed a strong correlation between the fixed-based lab data and the UVF screening data. The cost of on-site UVF analysis on site totaled less than $4,000. TRPH costs for standard turnaround TRPH are generally $80 per sample. The cost to expedite the analysis (48-hour turnaround), which was necessary at this site to meet the schedule set forth by the client, generally results in a 100% upcharge to the standard rate per sample. The cost to run 105 soil samples under standard turnaround time would have been approximately $8,400 and would not have met the schedule deadlines. The cost to run 105 samples under an expedited time frame would have resulted in an associated cost of approximately $16,000. In addition to the cost savings, time was also saved by using this near real-time method, as it was not necessary to wait 48 hours for the results from a fixed base laboratory.

10:00 **Evaluation of TarGOST® Investigations for Multiple Hazardous Waste Sites in the Southeast**
Ernest Mott-Smith, PE, Sr. Tech. Consultant Black & Veatch Special Projects Corp., Tampa
Cal Butler, PG, Geologist VI, Black & Veatch Special Projects Corp., Tampa

Laser-induced fluorescence is a key site investigation technique for detection of nonaqueous phase liquids. As with many high-resolution characterization tools, this technology provides continuous, real-time vertical data streams albeit at a lower accuracy than some traditional approaches. The Tar-Specific Green Optical Screening Tool, TarGOST®, is a specialized version of LIF that was developed for the detection of heavy oils such as creosote, coal tars, tank bottoms, or heavy crudes. Black & Veatch has employed TarGOST on seven EPA Region 4 CERCLA hazardous waste sites since 2009, including wood treating facilities and an oil processing facility. This assessment approach has been instrumental in successfully delineating the extent and nature of NAPL on each of these sites. This presentation will provide an overview of the technology and its application, followed by a series of site case studies to illustrate the overall effectiveness of the approach. The TarGOST data will be correlated with soil photo-logs, soil contaminant concentrations, NAPL well accumulations and the exact lithologic context. In addition, the TarGOST results will be examined in contrast with residual NAPL saturation laboratory studies from several sites. Finally, a novel technique for using TarGOST data for preparing a NAPL mass estimate will be presented.

10:30 **Using Reductive Dechlorination in a Phased Approach for Source Area Treatment to Meet Risk-Based Cleanup Goals**
Nicole Scroggins, Geologist, AECOM, Orlando

Site assessment activities completed at a former industrial facility identified a dissolved chlorinated solvent plume extending into the limestone drinking water aquifer at depths of up to 180 feet below land surface. A phased approach for site restoration is underway. The long-term site restoration objectives are to reduce plume size and contaminant concentrations to allow for risk-based closure. The primary COCs identified are chlorinated ethenes. TCE concentrations exceeding 1% solubility were detected in groundwater during assessment activities and provided presumptive evidence of NAPL to depths up to 80 feet bls. Historical TCE concentrations exceeded 10% solubility at locations up to 30 feet bls. Low concentrations of chlorinated ethanes were also present; groundwater was analyzed for 1,4-dioxane but not detected. Following the completion of site construction and initial interim measures (oil emulsion injection performed by others), supplemental assessment, including groundwater quality assessment and limited high resolution site characterization was performed to confirm remnant source mass distribution, and an approach for additional remedial measures was developed. The selected approach incorporated source area and limited dissolved phase treatment designed to reduce contaminant concentrations to risk-based targets, coupled with the use of institutional controls to eliminate exposure pathways. Client requirements included a design without trenching or other features that would damage surface pavement and a work plan to minimize disruption to multiple site tenants with 24-hour operations. Reductive dechlorination through organic substrate and zero valent iron injections was selected for source area and limited dissolved phase treatment. The organic substrate and ZVI slurry was injected at multiple locations and vertical intervals (46 locations and 137 intervals) using direct push technology. Multi-interval, nested, permanent injection wells (34) were also installed for substrate injection events that minimized the number of monitor well manholes visible at the surface. HRSC was used to design vertical intervals and planned injection locations. A bromide tracer was injected with the substrate and, along with total organic carbon, used as an indicator to monitor substrate delivery. Microbial parameters [DHC CENSUS, methane, ethane, ethene, and carbon dioxide), field parameters and COCs were monitored to evaluate performance. Source area TCE concentrations have been reduced by approximately 85% compared to groundwater quality data collected prior to this most recent phase of work. TCE concentrations are currently below detection limits in the majority of treated intervals. Vinyl chloride is now the predominant COC in groundwater; remnant vinyl chloride concentrations in groundwater are limited and consistent with the requirements for risk-based closure. This presentation will provide details of the design/field implementation, logistical considerations, lessons learned in addressing stakeholder concerns, evaluation of value earned through the use of institutional controls/risk-based targets and plans for future site work. Verification of substrate dose rate, delivery, and reductive dechlorination performance will also be presented.

11:00 Break

Concurrent sessions: 11:30 - 12:30 2A: Successful Amendment Delivery
2B: Inside Florida's Cleanup Industry: The Way Forward

Session 2A: Successful Amendment Delivery

11:30 **Using Shear Thinning Fluids to Improve Amendment Delivery in Heterogeneous Systems**
Donovan Smith, PE, President, JRW Bioremediation LLC, Lenexa, KS

The addition of carbon substrates to enhance in-situ bioremediation has become a well-accepted and successful remedial option. Like all in-situ methods, the overall success of a project many times is directly related to how effectively the amendment is delivered to the target contaminants. An incomplete understanding of the hydrogeology is one issue that hampers the ability to deliver substrate effectively. Even with good site characterization, heterogeneity and preferential flow paths in the subsurface also tend to hinder distribution to the most contaminated portions of the site. Over time, tighter silts and clays can hold higher soil concentrations of contaminants than more permeable adjacent sand and gravel layers as the more conductive regions wash out the contaminants. Even when injecting directly into, above and below these silt and clay lenses in a heterogeneous system, it is difficult to distribute a high proportion of substrate into these low conductivity layers and minimize the amount of substrate washed out of the source area via high permeability preferential pathways. Most ISB amendments are either soluble in water or are oil in water emulsions. Typically they are designed to be low viscosity at injection concentrations to maximize the radius of influence per injection point. One approach to deliver a higher proportion of substrate to the lower permeability matrix in heterogeneous systems is to add a shear thinning fluid to the injection fluid. We prepared combinations of ISB amendments (neat vegetable oil, vegetable oil emulsion, reverse phase soy oil microemulsion, and water soluble substrate) in shear thinning fluids to characterize physical properties, including dynamic viscosity and droplet size. This talk includes theory on shear thinning fluids, results and implications from the various formulations tested, lessons learned about successful mixing and injection of shear-thinning fluids combined with oil amendment, successful delivery to the target treatment zones, and ability to create and sustain anaerobic conditions and corresponding TCE dechlorination reactions in the aquifer.

FLORIDA REMEDIATION CONFERENCE

2013 Conference Registration

October 10-11, 2013
Caribe Royale, Orlando, FL

If registering more than one person,
please copy and complete a separate page.

Full 2013 Conference ___ (Both days) $395

One Day Only (Indicate which day)
__ **Day 1** (Thursday, 10/10/2013) $285
__ **Day 2** (Friday, 10/11/2013) $235

TOTAL: **$** _____

Name _____

Title _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____

E-Mail _____ fs1309

Payment Information:

Check enclosed for $ _____ **Payable to NTCC, Inc.**
(Fed. ID # 59-3036689)

Charge $ _____ to my AmEx Visa Mastercard

Credit Card # _____

Card Holder _____

Exp. Date ____ / ____ Security Code: _____ CC Zip: _____

Authorized Signature _____

Return with payment in full to: **NTCC, Inc.**
P.O. Box 2175
Goldenrod, FL 32733

or fax registration form with credit card info to (407) 671-7757 (secure fax).

12:00 **Field Application of Electrokinetic Enhanced Bioremediation of PCE Source in Low Permeability Materials**
James Wang, PhD, PE, Env. Engineer, Geosyntec Consultants, Columbia, MD
Effective delivery of remediation reagents is a critical component for successful implementation of in-situ remediation technologies such as bioremediation. Traditional injection methods are generally based on hydraulic advection mechanisms and often faced with limitations in areas with low-permeability materials and/or highly heterogeneous geology. Transport of ionic substances such as lactate in an electric field is relatively independent of hydraulic properties and fluid flow. Therefore, effective delivery using electrokinetics can be achieved in areas where permeability is limited and heterogeneous. A field demonstration of electrokinetic enhanced bioremediation for tetrachloroethene source remediation was implemented to assess the ability of the technology to treat PCE DNAPL source materials in interbedded glacial deposits of sand and clay till. The highest PCE concentrations (up to 21,000 mg PCE/kg) have been observed in clay till between three and seven meters below ground surface. The results of the field application show that EK can facilitate the transport of amendments (lactate and dechlorinating bacteria) through clay soils. Microbiological monitoring showed Dehalococcoides and vinyl chloride reductase gene levels increased significantly across the test area compared to baseline levels. Increases in vcrA counts within the clayey materials in the test area confirmed that EK operation was successful in distributing the microorganisms capable of PCE dechlorination to ethene. The test results provided the basis for design and implementation of full-scale implementation of this technology.

Session 2B: Inside Florida's Cleanup Industry: The Way Forward

11:30 **Time for a Change: Contaminated Soils Forum Revisited**
Richard Lewis, PhD, PE, Principal Engineer, HSA Engineers & Scientists, Fort Myers
Over a decade ago, the state of Florida used the Contaminated Soils Forum to develop global risk-based corrective action by incorporation into Chapters 62-780 and 62-777, FAC. These documents provided the first internally consistent method for calculating risk-based cleanup values for a wide range of chemicals using a number of detailed risk management options. In addition, we developed FL UCL, institutional controls, de minimis cleanup and many other ideas. Currently, there are a range of issues—some controversial—that remain before us. We need a balanced approach like the CSF that considers a broad range of perspectives to ensure that we are using resources wisely and protecting public health and the environment. The list of items could include more flexibility in using risk assessment, development of a regional background for chemicals in soil and groundwater, updating toxicity values, vapor intrusion, inclusion of incremental sampling methodology and modified active gas sampling, and what to do about arsenic on golf courses and agricultural land. The history and potential future of the CSF will be discussed.

12:00 **Low-Scored Site Initiative Program: An Industry Success Story**
Mike Scaringella, Director of Operations, Handex C&R LLC - Southeast, Winter Park
Graham Witt, Contract Manager, WRScompass, Tallahassee
Carey Baker, Stare Representative/Senator, Lake County, Eustis
When the Florida Department of Environmental Protection, the Florida Legislature and the cleanup industry work together, good things get done. The Low-Scored Site Initiative has been a success and is working as designed. It was created via a joint effort between industry and DEP, and passed unanimously in the House and Senate in 2010. Despite being vetoed by the governor, it came roaring back to life with a unanimous veto override during special session. In the last three years, the LSSI program has closed 24% of the sites put in the program within the $30,000 cost cap. It has also changed the way the consultants and DEP perform site assessments.

List of 2013 FRC Exhibitors and Sponsors

3 Tier Technologies	Groundwater Protection
A&D Environmental Services	GWTT Inc.
A-C-T Environmental & Infrastructure	H2O Engineering
Accelerated Remediation Technologies	HaloSource
Accutest Labs	Handex Consulting & Remediation
Adler Tank Rentals	Hanna Instruments
Advanced Env. Laboratories	Huss Drilling
Aerotek	Innovea Technologies
Alpha-Omega Training & Compliance	JRW Bioremediation
Analytical Laboratories of Florida	Jupiter Environmental Labs
BakerCorp	KB Labs
Capitol Environmental	Lakeland Labs
Carbon Service & Equipment Co. Inc.	LDCFL
Carbonair Environmental Systems	Liquid Environmental Solutions
Carus Corp.	MGD 2014
CASCADE Drilling	Monarch Environmental
CL Solutions	NASA Kennedy Space Center
Clark Environmental	Pace Analytical Services
Clean Earth	Palm Beach Environmental Labs
Clean Earth Systems	Performance Technologies
Clean Harbors	Periodic Products
Cliff Berry Inc.	Petrotech Southeast
Custom Drilling Services	Pine Environmental Services
Enviro-Equipment Inc.	Probe Support Services
Environmental Remediation Services	Product Recovery Management
Enviroprobe Service	Progressive Waste Solutions of FL Inc.
EnviroTek	Redux Technology
EOS Remediation	Regenesis
EQ - The Environmental Quality Co.	Republic Services
ESC Lab Sciences	SiREM Labs
ETEC LLC	Stillwater Technologies
Exo Tech	Sunvalley Solutions
FECC	SWS Environmental Services
The FGS Group	Terra Sonic Inatl, Drilling Services Div.
Flowers Chemical Labs	Terra Systems
FMC Environmental Solutions	Tetra Tech
Fruits & Associates	U.S. Environmental Rental
Geo-Cleanse International	U.S. Peroxide
GeoSearch	Vironex
Geotech Environmental Equipment	Waste Management
GeoTek Services	XENCO Laboratories
Golder Associates	ZEBRA Environmental Corp.
The Goldstein Environmental Law Firm	

12:30 **Day One Luncheon**
Sponsored by **Advanced Environmental Laboratories**

Session 3: Brownfields Cleanups in FL: Policy, Practice, Metrics, Mechanics & Economics

1:30 **The Financial and Liability Management Case for Redeveloping and Closing Contaminated Sites through the Florida Brownfields Program**
Michael Goldstein, Esq., Managing Partner, The Goldstein Environmental Law Firm, Miami
Michael will kickoff this panel with a talk that emphasizes the tax credits and refunds that can help subsidize cleanup costs as well as the statutory protections against cost recovery and pollution litigation that can provide the assurances that developers, lenders, and investors need to green light projects. Michael will also present a concise economic and project-based summary of the 16-year history of the Florida Brownfields Program. This discussion will have an emphasis on the increasingly important role that environmental consultants play in the access to economic incentives as a result the new Brownfield Site Rehabilitation Agreement created by SB 406 in the 2013 Florida Legislature.

2:00 **Preparing the Technical Brownfields Redevelopment Case for Review and Expedited Approval & Coordination with Project Team Members and Principals to Comply with Technical Requirements of Brownfield Incentives**
David Goldman, Senior Vice President, Kimley-Horn & Associates, Jacksonville
David will present a talk designed to educate environmental consultants on how to properly set expectations of usability, relevance and success with private and public sector clients, design due diligence and remedial action strategies that leverage the closure options that the Florida Brownfields Program and Chapter 62-780, FAC, make available, and work in harmony with environmental regulators and local government officials to achieve Site Rehabilitation Completion as quickly and cost-efficiently as possible. The second part of this discussion will focus on environmental consultant strategies for complying with the technical requirements associated with brownfield related economic incentives.

2:30 **Local Government Perspective on Brownfields and the Florida Brownfields Program**
Chris Bird, Environmental Protection Director, Alachua County BOCC, Gainesville
Chris will provide his perspective on brownfields as board chairman for the National Association of Local Government Professionals and will discuss his involvement with two local brownfield sites as the director of the Alachua County Environmental Protection Department.

3:00 Break

Concurrent sessions: 3:30 - 5:00 4A: Biostimulation and Bioaugmentation
4B: Regulatory and Construction Challenges

Session 4A: Biostimulation and Bioaugmentation

3:30 **Proliferation of vcrA across a Large TCE Plume in Florida following Biostimulation and Bioaugmentation**
Jeff Roberts, MSc, Laboratory Manager, SiREM, Guelph, Ontario, Canada
Trichloroethene contamination in groundwater was discovered at a site in Florida in 1995. Remedial actions have been performed at the site since that time, including excavation of contaminated soil, zero valent iron treatment in the source area and more recently, enhanced in-situ bioremediation using biostimulation with vegetable oil and bioaugmentation with KB-1®. The source area was also injected with emulsified zero-valent iron. In 2011, Dehalococcoides and vinyl chloride reductase were detected at some areas of the site, however geographical distribution was limited. Ethene was also detected at certain areas indicating that the complete reductive dechlorination of TCE was occurring at the site. The site conditions were ideal for EISB, with reducing conditions in the sulfate reducing and methanogenic range already present. However, the distribution of vcrA and ethene production across the site was limited. This lead to the full scale implementation of EISB including the use of KB-1 to increase the distribution of vcrA, as well as to promote complete dechlorination across the site. In the fall of 2012, approximately 40,000 gallons of vegetable oil, 20,000 gallons of EZVI and 472 liters of KB-1 culture were injected at the site. Six months after amendment injection and bioaugmentation with KB-1, greater than 50% reduction in TCE has been observed with corresponding increases in ethene. Bioaugmentation led to at least a 60% geographical proliferation of vcrA across the site from baseline. The vcrA has reached levels as high as $7x10^7$ gene copies per liter, which is above the level required for high rates of in-situ reductive dechlorination and ethene production. Results are very promising in other locations and further proliferation of vcrA and complete reductive dechlorination to ethene is expected.

4:00 **Making Biostimulation Work in the Real World: A Process Approach**
Joel Parker, Senior Engineer, Environmental Consulting & Technology Inc., Flint, MI
In-situ biostimulation of halorespiring bacteria for the complete sequential reduction of chlorinated ethenes has been implemented at two dramatically different field sites and demonstrated to be successful. The primary contaminants of concern are aqueous trichloroethene and associated daughter products, and the technology employed is in-situ biostimulation. Indigenous halorespiring bacteria (Dehalococcoides) were stimulated by periodic delivery of an electron donor to establish and maintain a permeable, biologically active zone. In-situ biostimulation of halorespiration is site-specific and does not lend itself to one universal deployment. Rather, application of this process in complex settings requires a systematic approach predicated on an understanding of the physical, chemical, and biological mechanisms involved. A 90-95% reduction of chlorinated ethenes has been achieved in a groundwater plume that is predominantly daughter products, which is a particularly challenging environment due to low halorespiring bacterial yield in the absence of parent compounds. While the two sites are dramatically different in hydrogeologic setting, the implementation of this low impact, low energy technology has been part of an integrated treatment train involving an upgradient source area strategy as well. In one case, an aggressive chemical oxidation was successfully implemented in a manner that was aggressive but not detrimental to the downgradient anaerobic biology. In both settings, this low impact, low energy technique has allowed a former industrial property to be transferred and reused for manufacturing while protecting adjacent residential neighborhoods from the underlying groundwater contamination.

4:30 **Utilization of Biostimulation and Augmentation for an Effective Site Remedy Including Enhanced Attenuation at a Florida Drycleaning Site**
Steven Folsom, PE, BCEE, Sr. Env. Engineer, HSA Engineers & Scientists, Tampa
Many cleanup sites require a combination of remedies over time. These treatment train components utilize the remedial applications best suited for a particular site relative to contaminant behavior, geochemical and geologic properties, site logistics and implementation costs. A major challenge in this sequence is determining how and when to transition from more active treatments to monitored natural attenuation or, conversely, when to intervene at a site in MNA. Enhanced attenuation encourages energy efficiency and developing the best solutions for the environment. Deploying enhanced attenuation technologies results in naturally sustainable treatment that require less energy and investment to reach environmental cleanup goals. This case study will present the conceptual site model development, remedy evaluation and use of enhanced attenuation techniques at a drycleaning facility in Sarasota, FL.

Session 4B: Case Histories: Regulatory and Construction Challenges

3:30 **Design-Build Project Considerations for New Coal Ash Landfills**
Sean Rome, Vice President, Tetra Tech Inc., Orlando
The current regulatory climate challenging the core business of U.S.-based power companies is overwhelming. New and proposed environmental regulations have forced numerous power companies to literally shut down coal-fired power units to meet impending regulatory deadlines. One of these regulatory challenges, the U.S. Environmental Protection Agency's Coal Combustion Residuals rule, has the potential to significantly impact the coal-burning power generation industry and literally force U.S.-based, coal-burning, power providers to re-think and re-strategize the industry's futures on how to deal with coal ash in the country. To that end, this presentation will cover regulatory drivers, project considerations and a case history of a new RCRA Subtitle D coal ash landfill design-build project in Florida.

4:00 **Ensuring Contaminants Cooperate with the Construction Schedule**
Jeffrey Northrup, PG, PSSC, CHMM; VP, Cherokee Enterprises Inc., Miami Lakes
Fort Lauderdale-Hollywood International Airport is currently undergoing over a billion dollars in renovations associated with terminal modernization and runway expansion programs. In preparation of the expansion, the Broward County Aviation Department tasked Cherokee

Enterprises with investigating a former rental car facility that was in the footprint of the Terminal 4 Expansion. During CEI's investigation, a petroleum plume was found in the pathway of the proposed terminal expansion that could jeopardize the construction schedule. The new terminal was targeted for construction in the summer of 2013 and BCAD assigned CEI with the mission of obtaining an unconditional site closure before construction commenced. A budget was prepared and a work order was issued, with the understanding that CEI would complete the investigation, conduct the cleanup and complete the required post remediation monitoring. After the investigation was completed, it was determined that a methyl tertiary butyl ether plume splintered off from the main petroleum plume and was found at a depth of 45 feet below land surface, influenced by a nearby facility irrigation well. The main petroleum plume, less mobile than MTBE and less influenced by the irrigation well, was moving in another direction with the general groundwater flow.

5:00 **Day One adjourns**
FRC Reception in the Exhibit Hall

FLORIDA REMEDIATION CONFERENCE

Day Two, Friday, Oct. 11

7:30 **Exhibits open**

Session 5: Alternative Approaches to Effective Remediation

8:30 **A BTEX Remediation and Water Quality Restoration Strategy Following Failed In-Situ Persulfate Injections**
David Laughlin, PE, Project Manager, ETEC LLC, Washougal, WA
As a result of multiple ISCO injection events using a proprietary persulfate-based product, water quality at a site in Northwest Florida was significantly degraded, while groundwater BTEX concentrations remained elevated across the site. In the target treatment area, BTEX concentrations in groundwater ranged from 1,500 to 13,000 parts per billion. Water quality issues included depressed pH values ranging from 3.5 to 4.5 standard units, and extremely high dissolved sulfate concentrations approaching 1,000 mg/L in several site wells. To address the elevated BTEX concentrations in groundwater as well as the pH and sulfate issues, a unique remediation approach combining iron-catalyzed hydrogen peroxide (Fenton's reagent), pH buffering and nutrient stimulation was applied in four separate injection events over a two-year period. Cleanup goals for the site groundwater are the Florida Natural Attenuation Default Concentration Levels. Each injection event included four days of alternating iron and peroxide solution injections, followed by one day of injection of alternating pH buffer (potassium hydroxide) and nutrient (N, P, K, micronutrients) solutions. Over a two-year treatment time frame, the site data shows average groundwater BTEX reductions of 90% or greater in the target treatment area. Equally important, pH values throughout the target plume area were raised by an average of 1.5 standard units, resulting in pH conditions that facilitated in-situ biological activity. Finally, sulfate concentrations have decreased 70-90% across the site as a result of the pH adjustment and nutrient stimulation, which has facilitated in-situ microbial utilization of the sulfate as a secondary electron acceptor. These results demonstrate that a combined ISCO/bioremediation process can be an effective remediation alternative for both primary site cleanup as well as site polishing to achieve stringent cleanup standards for both primary and secondary water quality constituents. This project was implemented as a performance-based contract with specific negotiated cost and performance limits, which are also summarized and discussed in detail.

9:00 **Rapid Perchlorate Destruction in Soil and Groundwater Through Bioaugmentation**
Carl Sieber, Engineer, Irwin Engineers, Natick, MA
Perchlorate, a propellant used in flares, rockets and fireworks, is a contaminant at more than 400 sites across the country, including six drinking water systems in Florida. To date, in-situ biological treatment of perchlorate has been attempted with anaerobic species using various carbon substrates with limited success. Irwin Engineers and CL Solutions collaborated on the novel idea that CL-Out® cultures could be used to treat high concentration perchlorate in soil and groundwater. Irwin undertook bench-scale microcosm testing for proof of concept and showed that addition of CL-Out to site groundwater achieved reduction of 100 mg/L perchlorate to less than 1 mg/L after two months while stimulation of native cultures under control conditions achieved reduction to just 60 mg/L. Subsequently, a six-month pilot study of recirculating water with CL-Out applied for in-situ treatment of about 30 cubic yards of soils in the vadose zone achieved 99.96% perchlorate reduction to meet the applicable residential soil standard. Scaling up from the pilot study, CL-Out injection in wells aligned across the groundwater plume has bifurcated the plume, persistently reducing perchlorate at the injection lines to less than 1 mg/L while upslope concentrations entering the injection line were measured in the range of 60 to 100 mg/L. Injections of CL-Out into bedrock wells reduced groundwater concentrations from a range of 2 to 7 mg/L to less than 0.01 mg/L within four months. Adjustment of the aquifer pH to greater than 5.5 standard units is necessary for optimal cell metabolism, and application of a weak base provided effective pH buffering. The presentation describes the early results of the full-scale field application of this new approach to reduce high perchlorate concentrations by orders of magnitude rapidly and economically.

Session 6: Improving the Performance of Soil Vapor Extraction and Air Sparge Systems

9:30 **Recent Advances in Optimization and Evaluation of Soil Vapor Extraction Systems**
Lloyd "Bo" Stewart, PhD, Vice President, Praxis Env. Technologies Inc., Burlingame, CA
Techniques and criteria for evaluating the performance of soil vapor extraction systems have ranged widely, as have operational strategies. Recent tools and approaches have been developed to more realistically judge SVE performance. This presentation describes the pitfalls of more traditional approaches, identifies appropriate data collection requirements and operational strategies and presents information on an innovative tool, PneuLog®, that can assist in optimization and evaluation of SVE systems. Traditional approaches to SVE evaluation included soil sampling. The results were compared to fixed concentration standards or calculation of mass remaining versus the original estimate. This approach involved the limitations of volatile organic mass loss during sampling and the complications due to the natural heterogeneities of contaminants in soil. In other cases, operators looked only at the mass removed by the entire system. Shut down was proposed when concentrations reached an asymptotic limit. In many cases, these systems were inadequately designed using a radius-of-influence approach and as such left inadequately treated soil. The low airflow generated at distance from the extraction wells or near stagnation zones provided inadequate treatment. Measurement of soil gas concentrations (and vacuums) from both extraction wells and multi-depth-monitoring probes provide a much better picture of the subsurface performance of the SVE system because of the relatively low detection limits. Once soil gas levels in extracted gases reach an asymptote, the extraction can cease and measurements of concentration rebound taken from available wells and probes over weeks or even months. When little rebound occurs, the residual mass probably resides in diffusion-controlled low permeability materials that are less likely to leach significant mass to the groundwater or other features. Modeling of the rebound, as described in this presentation, aids in characterizing the extent of the diffusion controls. The PneuLog tool more discretely identifies zones yielding air to the extraction wells and estimates of contaminant concentrations from productive soil horizons. This information can be used along with rebound testing information and transport modeling to estimate mass in place in both advection- and diffusion-controlled zones, time to cleanup, recommend changes to most efficiently remove the mass and impact to groundwater. This presentation includes case studies from sites located across the country that illustrate the utility of the PneuLog technology. Examples will be drawn from unique contamination problems discernible as a result of using PneuLog and contaminant transport modeling to estimate the contaminant loading on the water table.

10:00 **ART Single Point AS/SVE Technologies**
Mohamed Odah, Principal, Accelerated Remediation Technologies Inc., Stanchfield, MN
Building on the multiple remediation concepts combined within the ART technologies, ART has engineered an alternative to traditional air sparging and soil vapor extraction remedial systems. This patent-pending alternative utilizes similar processes as traditional AS/SVE, but is applied differently. The ART AS/SVE well consists of two screens separated by a solid section. The lower screen is positioned near the bottom of contamination. The upper screen intersects the water table. An innovative, specially designed packer will be strategically positioned in the solid riser portion, between the two screen zones, to force injected air to exit the well via the lower screen. The vapors are captured through the upper screen along with additional vapors captured from the vadose zone, thus reducing or eliminating vapor intrusions issues. In addition to reduced drilling cost, savings also include reduced trenching and piping installations and maintenance activities. Traditional AS/SVE methods may cause uncontrolled air sparging into the formation that is difficult to recapture allowing possible expansion of plume boundaries and vapor intrusion into nearby structures. However, the ART AS/SVE well utilizes one below grade structure to achieve greater control of component processes as well as decreased costs due to initial construction and long term operation and maintenance. The ART AS/SVE design allows for a more controlled recapture of the sparged air as the vapor extraction component is included within the same sub-grade structure. Furthermore, the ART Innovative AS/SVE allows for the addition of amendments to the subsurface through the sparging screen if it becomes necessary.

Continued on Page 11

FLORIDA REMEDIATION CONFERENCE

All proceeds to JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

Charity Golf Tournament

Wednesday, Oct. 9, 2013

Hawk's Landing Golf Club

Orlando, FL

- 1:00 PM Shotgun start, four-man scramble
- Contests, door prizes and silent auction
- Sponsorships available
- Registration includes golf and post-play BBQ
- Club rental available
- Play one of the top courses in the state, just three minutes from the Caribe Royale, FRC host hotel
- Proceeds to Juvenile Diabetes Research Foundation
- You do not have to attend FRC 2013 to play...

Everyone is invited!

Contact Information

T-shirt size

Player 1 (contact): _____

Company: _____

Address: _____

City, St, Zip: _____

E-mail: _____

Phone: _____

Additional players in foursome:

_____
Name

_____
Name

_____ _____
Name Company

Player Foursomes are SOLD OUT...
But we do have several single player slots still available

Single player registration is $135 (checks payable to NTCC, Inc.) Foursomes registering at the same time are $450. (Save $90.) If you'd like to take advantage of the foursome discount, you must submit payment in full ($450) with this form.

Payment information

__ **Check or CC:** __ AmEx __ Visa __ Mastercard

Name on CC: _____

CC #: _____

Exp.: ___ / ___ Sec. Code: _____ CC Zip: _____

Sponsorships

__ Regular Holes: $200
Contest Holes: $250 + minim
__ Closest to P
rive/Ladies
nge
vailable)
(four available)
on to JDRF

Amt. $_____

Total_____

Mail to FRC Golf Tournament
PO Box 2175
Goldenrod, FL 32733

FAX to (407) 671-7757 *or* **E-MAIL to** mreast@enviro-net.com
Questions? Call Mike Eastman at the Florida Remediation Conference at (407) 671-7777 or 1-800-881-6822.

Special thanks to the following companies for their generous support of the 2013 FRC charity golf event

A&D Environmental Services
Accutest Laboratories
Adler Tank Rentals
Aerotek
Alpha-Omega Training & Complance
BakerCorp
Carus Corporation
Carbon Service & Equipment Co. Inc.
Clark Environmental
Clean Earth
CRA
Custom Drilling Services
ECT
Elite Environmental & Petroleum Services
EnviroTrac
Environmental Consulting & Technology
Environmental Remediation Services
EQ - The Environmental Quality Co.
ESC Lab Sciences
ExoTech
FECC
The FGS Group
Flowers Chemical Labs
FMC Environmental Solutions
GES
Golder Associates
GWTT Inc.
Handex Consulting & Remediation SE - LLC
Hertz Equipment
Hole Products
Huss Drilling
Industrial Cleaning Technology
Industrial Maintenance Supply
Innovea Technologies
Liquid Environmental Solutions
Magnus Pacific
NEFF Rental
Palm Beach Environmental Labs
Performance Technologies
Petroleum Resources & Development
Petrotech SE
Progressive Waste Solutions of FL
RECON Services
Regenesis
Republic Services
Safety-Kleen
SCS Engineers
Staffology
Streamline Environmental
SunLabs
SurvTech Solutions
SWIX
SWS Environmental Services
TBAEP
Tech USA
Tetra Tech
US Environmental Rental
Waste Management
WRScompass
ZEBRA Environmental

FGS initiates study of sinkhole vulnerability

By BLANCHE HARDY, PG

The Florida Geological Survey, a division of the Florida Department of Environmental Protection, has initiated a statewide assessment of sinkhole vulnerability in Florida.

The three-year project is funded by a $1.8 million Federal Emergency Management Agency grant issued in conjunction with the Florida Division of Emergency Management.

Clint Kromhout, PG, a professional geologist with FGS, said the project's goal is to "create a statewide map showing a relative vulnerability to sinkhole formation throughout the state."

Sinkholes are common in Florida and along with related Karst landforms such as springs, caves and disappearing streams, are the result of chemical weathering and dissolution erosion of Florida's ubiquitous soluble limestone and dolomite dominated strata.

"There are several givens when coming to Florida: beaches, sun, hurricanes and sinkholes,' said Kromhout. "Sinkholes are nothing new to the state. They have been around for millions and millions of years."

Florida is underlain by thousands of feet of porous limestone, the nature of which, while susceptible to sinkhole subsidence incidence, also accommodates the billions of gallons of fresh water that sustains habitats critical to the viability of Florida's diverse flora and fauna, and is consumed by residents, agriculture and industry.

The Division of Emergency Management was prompted to seek the vulnerability assessment as a result of increased sinkhole subsidence incidents last year.

"In June 2012, Tropical Storm Debbie dumped a tremendous amount of rain. At the same time Florida was experiencing a drought," said Kromhout. "Because of this, the lowered aquifer levels created what was possibly air space within unknown voids across the state.

"The tremendous amount of rain Debbie dropped added a lot of weight to overburden sediments, those being the sands clays and soils above these voids, and in doing so caused a lot of sinkholes to form."

Two 2012 sinkhole subsidence incidents garnered national attention, the first resulting in the fatality of a sleeping resident in February when a sinkhole opened beneath a home in Tampa and a second in August that sent hundreds of tourists scurrying for safety as the central section of a three-story, 24-unit resort villa near the Central Florida attractions corridor collapsed into a sinkhole in Lake County.

"The Florida Division of Emergency Management approached FGS asking if they could provide them a tool for their mitigation section that specifically provides strategies to prevent, or hopefully reduce, the loss of property and life within the state," said Kromhout.

The vulnerability study will take place over three years and includes three phases.

"The one-year pilot study over the first phase will be done in Hamilton, Suwannee and Columbia counties," said DEP Spokesperson Patrick Gillespie. "The second and third phases—over two more years—will extend what was learned in the pilot study to the remainder of the state."

The results of the pilot study will be used to produce a model that will generate a map illustrating the relative vulnerability of the pilot study counties to potential sinkhole formation. FGS scientists will then use the model to produce a statewide sinkhole vulnerability map.

The information will be used to improve Florida's Enhanced Hazard Mitigation Plan risk assessment section on sinkholes and will include enhancement of corresponding mitigation strategies.

Kromhout noted that the resulting statewide sinkhole vulnerability map "will be used by local emergency managers at the county and city level to create their own (local) mitigation strategies," and that "the public can also use the map and see the relative vulnerability to sink hole formation within an area they are interested in."

From Page 9

10:30 Break

Session 7: Successfully Addressing FDOT Roadway Construction Remediation Challenges

Moderator: Vincent Fusconi, PE, District Contamination Impact Coordinator
Florida Department of Transportation, Ft. Lauderdale

11:00 **Case Study: Application of an Injectable Groundwater Barrier on a Roadway Construction Project to Prevent Contaminant Plume Migration and Exacerbation During Dewatering and Resulting Effects on Groundwater Remediation System Performance**

Timothy Harman, PE, Genl. Mgr., Handex Consulting & Remediation–SE, Ft. Lauderdale

The Florida Department of Transportation District Four installed an injectable resin groundwater barrier to prevent the migration and exacerbation of a groundwater contaminant plume adjacent to a roadway reconstruction project in Palm Beach County. The barrier was to act as an engineering control during the construction dewatering required for the installation of a 48-inch diameter stormwater pipe and the associated drainage structures. The groundwater contaminant plume is associated with an active retail petroleum facility with an operating groundwater treatment system funded and administered by the Florida Department of Environmental Protection and managed through the contracted local program, Palm Beach County Department of Environmental Resources Management. As sister agencies, project coordination and sharing of resources and information was instrumental for a successful implementation of the barrier and the construction of the FDOT project. The injectable resin barrier, previously evaluated and utilized on similar roadway construction projects, was installed to encase the contaminated groundwater plume within the source area property along the FDOT roadway right-of-way/project boundary. Prior to construction, the data for the contaminated site was reviewed and evaluated along with contemporary data collected for evaluation of impacts within the roadway construction project corridor. In addition, groundwater within the project corridor was monitored for hydraulic and chemical parameters to evaluate and confirm the efficacy of the groundwater barrier as an engineering control during construction dewatering. Furthermore, contaminated groundwater plume data was evaluated to determine if there were beneficial effects related to the plume containment as a remediation system enhancement.

11:30 **Panel Discussion: Assessment & Remediation on FDOT Construction Projects - A Primer**

Vincent Fusconi, Timothy Harman and a group of DOT professionals from across the state

12:00 **Day Two Luncheon**

Sponsored by **The Goldstein Environmental Law Firm**

Session 8: Regulatory Panel Discussion

1:30 *Moderator:* Glenn MacGraw, PG, Vice President, The FGS Group, Tallahassee
Jorge Caspary, PG, Director, Division of Waste Management, DEP, Tallahassee
Admiral Valerie Huegel, Program Administrator, Petroleum Restoration Program, DEP, Tallahassee
Robert Cowdery, PE, Environmental Engineer, DEP, Tallahassee
Additional DEP officials TBA

3:00 Break

3:30 **Exhibits close**

Session 9: Incorporating Biogeochemistry in Remedial Approaches

3:30 **Removal of Ethylene Dibromide from Groundwater by Biogeochemical Reductive Dehalogenation**

Jim Studer, PE, President, InfraSUR, Albuquerque, NM

Groundwater contamination by uncontrolled release of leaded fuels containing ethylene dibromide or EDB (1, 2 Dibromoethane) is extensive. EDB is highly mobile in groundwater, recalcitrant to natural attenuation and a potent carcinogen. The maximum contaminant level for EDB is very low at 0.05 ug/L. Petroleum hydrocarbon plumes containing EDB represent environmental remediation challenges. EDB is biodegradable under anaerobic and certain aerobic conditions and can undergo abiotic transformation by contact with reactive sulfides such as iron sulfide. Its presence in groundwater above the MCL at thousands of sites suggests that natural attenuation processes are ineffective. In-situ approaches that preferably enhance the natural processes are in demand. One such approach is biogeochemical reductive dehalogenation, BiRD. This technology was developed and patented with a primary view towards chlorinated solvents like tetrachloroethylene and metals like hexavalent chromium and arsenic. Research conducted by the U.S. Environmental Protection Agency documents removal kinetics and efficiencies against the brominated EDB comparable to TCE. BiRD involves creation of an in-situ FeS reactive zone or permeable reactive barrier using relatively low cost direct injection or trench-based construction techniques and materials. The presence of the halogenated compound within and down gradient of a PHC plume requires special engineering considerations compared to the typical BiRD application.

4:00 **From Pilot to Full-Scale: High Pressure Injection of Calcium Peroxide into Limestone Bedrock**

Brantley Rudd, Vice President, Exo Tech Inc., Monroe, GA
Fred Portofe, PG, VP of Environmental Operations, J2 Engineering, Tampa

BTEX contamination in groundwater was discovered at a site in Sumpter County, FL. A pump and treat system was installed and operated for approximately four years to remediate the petroleum constituents. The system was shut-off after contamination was observed to be below Florida natural attenuation default source concentrations. In an effort to further reduce dissolved benzene to below the contaminant target level of 1 microgram per liter, Exo Tech was contracted to perform a bench-scale treatability study and field pilot study. The treatability study was performed for J2 Engineering to aid in the design and development of an effective remedial strategy utilizing in-situ chemical oxidation or enhanced aerobic biostimulation. A thorough study was performed that included an evaluation of site geochemistry, soil oxidant demand, degradation studies and an in-situ microcosm study to evaluate microbial activity in the groundwater. The results of these studies showed the presence of indigenous BTEX-degrading aerobic bacteria, indicating that PermeOx Plus® would be able to stimulate an increase in the microbial population. In order to evaluate the feasibility of PermeOx Plus injections, a pilot study was performed. The pilot study consisted of injecting a PermeOx Plus slurry mixture into three injection wells. The injection wells were installed by J2 Engineering, to an approximate depth of 70 feet. The wells were installed into the limestone bedrock utilizing a mud rotary drill rig. A four-inch casing was installed from ground surface to the top of bedrock, approximately 50 feet below ground surface, and were left "open borehole" for the injection. The injection took place directly into the limestone bedrock using high pressure where a total of 600 pounds of PermeOx Plus was injected into the aquifer. Following the pilot study, monitoring events were conducted to evaluate any degradation in the compounds. All petroleum hydrocarbons were reduced to below laboratory detection limits. Full-scale implementation of PermeOx Plus consisted of the installation of 17 additional injection wells and was completed in June, 2013. Results are pending.

4:30 **Methane Inhibition through Restriction of Enzyme Systems that Catalyze Methanogenesis During Anaerobic Reductive Dechlorination**

Michael Scalzi, President, Innovative Env. Technology Inc., Pipersville, PA

Anaerobic reductive dechlorination is a treatment process that has been successfully used to remediate soil and groundwater contaminated with chlorinated solvents. It only occurs in the absence of oxygen and the chlorinated solvent substitutes for oxygen in the physiology of the microorganisms carrying out the process. Almost any substrate that can be fermented to hydrogen can be used by dechlorinating microorganisms to enhance reductive dechlorination. However hydrogen is also used by methanogenic bacteria that convert it to methane. By utilizing hydrogen, the methanogens compete with dechlorinating microbes. This study relates to the use of red yeast extract as an inhibitor of enzyme systems that are responsible for the production of methane and therefore compete with halorespiring bacteria during the anaerobic reductive dechlorination process. Red yeast extract, also known as red yeast rice, contains several ingredients that inhibit methane production, including a number of monacolins, most importantly monacolin K or lovastatin. Lovastatin is the only naturally occurring statin compound. Lovastatin has the ability to block methane production specific enzyme systems. Through the inhibition of methane production, reductive dechlorinating bacteria can become the more dominant bacterial colony. In addition to its methane inhibition properties, red yeast also includes mono-unsaturated fatty acids that can stimulate bacteria in the subsurface. Preliminary results from laboratory studies showed that the red yeast extract was effective in decreasing the methane production in a system containing TCE contaminated soil, while increasing the removal of TCE at the presence of a remedial material.

5:00 **Conference Adjourns**

FRC

From Page 1

a panel discussion, "Assessment and Remediation on FDOT Construction Projects – A Primer," moderated by Vince Fusconi, the District 4 contamination impact coordinator with the Florida Department of Transportation.

"During our panel session, we will discuss the steps that FDOT takes when soil or groundwater contamination is found on state right-of-way or adjacent properties," said Fusconi. "Through innovation and creativity, we can avoid unnecessary delays and develop projects that enhance a safe and efficient transportation system, and preserve the quality of our environment and communities."

For remediation practitioners with the needed technical skills, this session may give insights into new opportunities, both financial and technical.

During its 2013 session, the Florida Legislature modified brownfield tax credit criteria involving contaminated sites. Fewer sites now qualify for financial incentives available even as recently as last year.

The change will have consequences to redevelopment projects that are far more pervasive than tax incentives and reimbursements. Those areas that are not cleaned up affect owner liability and future choices for appropriate rehabilitation strategies.

Two recognized brownfield experts, Michael Goldstein, principal with The Goldstein Environmental Law Firm in Miami, and David Goldman, senior vice president with Kimley-Horn & Associates in Jacksonville, will discuss the intricate relationship between more restrictive financial incentives offered by the state and the changing opportunities for brownfield redevelopment in Florida.

Rounding out the session, Chris Bird, director of the Environmental Protection Department in Alachua County, will discuss his involvement with two local brownfields sites.

Day Two's regulatory panel, led by moderator Glenn MacGraw, vice president with The FGS Group in Tallahassee, features a discussion of the significant changes being made to the Florida Department of Environmental Protection's petroleum cleanup program, among other topics.

The state program has funded approximately $125 million in remediation projects in recent years, so its plans to establish a pool of qualified state contractors, modify its LSSI program and sharpen risk-based site closing criteria mean major changes are in the offing for Florida's remediation professionals and their clients.

The panel features a group of top DEP regulatory officials including Jorge Caspary, PG, director of the DEP's Division of Waste Management, and Admiral Valerie Huegel, Program Administrator for the new Petroleum Restoration Program in the DEP Division of Waste Management, and other top DEP regulators.

MacGraw believes this discussion will be of high value to the consultant and contractor community because a lot of things are changing.

"The conference gives access to the people steering the change," he said. "It will be interesting to hear their thoughts."

Wednesday's second platform session on policy, "Inside Florida's Cleanup Industry: The Way Forward," includes two platform presentations that look to the future.

Richard Lewis, PhD, PE, principal engineer with HSA Engineers & Scientists in Fort Myers, will make a case that it's time for a second convening of the Contaminated Soils Forum.

A decade ago, the CSF championed, among other things, risk-based cleanup criteria that recognized multiple management options for developers and redevelopers to consider.

Technical progress in methodology and recognition of contaminant effects may now be due for another look. Lewis will discuss why the process used by CSF a decade ago may be Florida's best path to risk-based remediation criteria for soils.

During the second talk, "Low-Scored Site Initiative Program: An Industry Success Story," Mike Scaringella, director of operations with Handex Consulting & Remediation LLC in Winter Park, provides an upbeat view of the state's LSSI rule. In his view, the rule is more than a honing of prior standard operating procedures, a further explanation of which will be provided in his platform presentation.

Emerging techniques and technology sessions form the traditional core of the FRC agenda and this year is no different.

In the Day One session, "Improving Remediation Through High Resolution Site Characterization," two talks describe using fluorescent detectors to characterize hydrocarbon contaminant distribution in soil and groundwater. In addition to making the case for the effectiveness of the technique, the presentations include information on costs and comparisons with fixed-base laboratory analyses.

The third talk in the group describes a site with a contamination profile that varied significantly with depth. A high resolution characterization of the contamination spectrum guided differential substrate delivery to support trichloroethene destruction by microbes.

Organic chemicals with high vapor pressures are often found at contaminated sites. Because high vapor pressure increases their mobility in soils, the substances exhibit behaviors that may seem paradoxical to remediation practitioners familiar with solutes, solutions and diffusion mediated processes.

Bo Stewart, PhD, vice president with Praxis Environmental Technologies in Burlingame, CA, said that, at least in part, unexpected behavior arises because substances as vapors diffuse much more rapidly than they do dissolved in groundwater.

Stewart leads off his session on soil vapor extraction and sparging by characterizing additional unusual behaviors of high vapor pressure substances in soil, how to measure them and how to exploit the physics of vapor behavior to optimize vapor extraction.

Successful soil and groundwater remediation is dependent on getting reagents or amendments to sub compartments where contaminants reside. Differences in soil density and composition, such as between clay and sand, may invite contaminant accumulation while not favoring the same desired movement of remediation reagents.

Two papers in the "Successful Amendments Delivery" session describe recent approaches to overcoming these difficulties.

Donovan Smith, PE, president of JRW Bioremediation LLC in Lenexa, KS, describes the use of shear thinning fluids in amendment solutions to improve their penetration of low permeability soil compartments. The behavior modification by shear thinners is counter-intuitive.

"We're using it as a tool to get more electron donor into tight formations in a heterogeneous system," Smith said. "In the more porous and conductive areas, you will end up with higher viscosity. The shear thinning fluids give a higher ratio of donor in tight formations. It's a neat trick that can be applied to a broad range of projects."

James Wang, PhD, PE, an environmental engineer with Geosyntec Consultants in Columbia, MD, will describe something even newer—exploiting the force of an electric field to move charged dissolved chemicals through low permeability soils.

The movement of dissolved substances in electric fields is relatively independent of hydraulic processes and fluid flow, wrote Wang in his abstract. He noted during a preconference interview that the technique is economical enough to be competitive on the basis of cost and should be considered another option for remediation projects where precise amendment and reagent placement is important in a heterogeneous matrix.

Bioremediation first came to the industry as a novelty but is now an accepted remediation strategy. Nevertheless, it is not off-the-shelf technology and experience still contributes significantly to its improvement.

Two FRC sessions include extensive characterization of improved bioremediation techniques and exploitation of microorganism metabolism to modify residual treatment reagents to environmentally benign substances.

Among presentations this year, a growing perception of bioremediation's effectiveness—sometimes unique effectiveness— is unmistakably evident.

Last year, several FRC presenters drew attention to the close affinity between biogeochemical processes and remediation reactions. This year, an entire session continues the theme.

Biogeochemical cycles are important to remediation because they may be exploited effectively.

Biogeochemistry and bioremediation are interdependent by being based on more than three billion years of microbiological metabolism that modified earth's environment.

Our atmosphere's abundant oxygen, an alkaline ocean and oxidized soils on earth's surface are some of the biogeochemical results.

In a world full of information at the expense of fact and face time, FRC offers participants many opportunities to meet with other professionals in the mood to talk shop in a relaxed setting.

Two luncheons, the first sponsored by Advanced Environmental Laboratories and the second by The Goldstein Environmental Law Firm, and a Thursday evening reception sponsored by Tetra Tech, will provide attendees with an additional chance to share thoughts.

Claims in latest PEER report blasting state enforcement levels strongly denied by DEP

By PRAKASH GANDHI

State environmental officials are again drawing fire from a persistent critic of their policies—Public Employees for Environmental Responsibility This time, PEER is focused on the state's lack of enforcement.

The advocacy group said the state's enforcement policies are in a shambles, with the number of legal actions and penalties levied against polluters falling dramatically under the administration of Gov. Rick Scott.

The group's heaviest criticism is directed at Scott and the state's primary environmental regulatory agency, the Florida Department of Environmental Protection, which is charged with enforcing state regulations.

"Essentially, the enforcement arm of the department has been critically wounded," said Florida PEER director, Jerry Phillips, himself a former DEP employee.

The claims are strongly denied by DEP, which says it has focused on preventing environmental violations from occurring.

"Over the past two years, compliance rates have improved dramatically resulting in a drop of enforcement cases and associated fines. The result is an overall compliance rate of 96 percent—the highest level ever achieved," said DEP spokesman Patrick Gillespie.

The charges are leveled in a report released recently by PEER. The group said that enforcement of anti-pollution laws in Florida plummeted to historically low levels during the second full year of Gov. Scott's tenure.

The fall-off in cases brought, enforcement orders, and fines assessed and collected during 2012 comes on top of significant drops in these areas during the prior year.

PEER said the department has been hit hard by layoffs targeting staff with enforcement duties.

Pollution fines collected fell 70 percent in just one year, contributing to a 81 percent drop in payments from polluters since 2010.

At the same time, commitments from violators for alternatives to fines, such as in-kind pollution prevention projects, also dropped by nearly two-thirds.

> In 2012, the number of consent orders issued was the lowest in DEP history and the total number of new cases opened by DEP dropped by 42 percent, off 58 percent since 2010.

The number of enforcement consent orders issued was the lowest in DEP history and the total number of new cases opened by DEP dropped by 42 percent in 2012, off 58 percent since 2010.

Phillips noted that there has been a staggering drop in the number of air quality cases brought by the agency. The numbers fell from 145 in 2010 to 80 in 2011 and just 15 last year, he said.

"These numbers indicate that the air program is basically imploding—barely functioning," he said.

There has also been a 68 percent drop in solid waste cases involving issues such as the illegal disposal of solid waste of which "there is a fair amount in Florida," Phillips said.

"Every major program has seen substantial declines in the number of cases as well as the dollars assessed in civil penalties," he said.

Money collected in civil penalties from enforcement of environmental violations is deposited in some cases to a trust fund, Phillips said. The money is used to pay for DEP employees, so the drop in enforcement cases has a significant impact on personnel levels, he added.

Phillips blamed the apparent drop in enforcement cases on top DEP officials.

"You don't have numbers drop that significantly unless there has been direction from senior management," he said. "That direction has to come from the secretary and the deputy secretary of regulatory programs.

"It's not done in a real black and white way. But they have created an atmosphere where it is known that employees should not enforce the regulations."

He said his group has talked to employees who were afraid of losing their jobs if they were too aggressive with permit violators.

Phillips said that if an individual conducting an inspection saw violations and decided to take enforcement action, she knew she would be looked upon as not being a team player.

"This is not a healthy environment to work in, particularly when it's your job to enforce regulations," he said.

DEP spokesman Gillespie said the agency is proud that it is focused on preventing environmental harm.

"We view any violation of environmental rules, and the environmental damage that can occur as a result, as a failure," he said.

"When failure occurs, firm enforcement action, including the assessment of financial penalties, may be needed to reduce the likelihood of future violations. We have a critical focus on compliance before failure," he said.

Gillespie said that through outreach efforts, such as compliance training events, site visits and structured meetings, the agency has prevented a number of environmental violations from occurring.

Last year, the department's regulatory programs conducted 5,372 outreach events reaching 74,000 individuals. As of the first quarter of 2013, the regulatory programs had conducted 2,866 events, reaching 24,600 people.

"By working to increase compliance through assistance efforts, we are helping to prevent violations that can damage our environment before they occur," Gillespie said.

He said the report's conclusion that DEP is not enforcing environmental laws is inaccurate.

"It is clear by this report that PEER shows a lack of understanding of the fundamental goals of this agency," he said.

Sybac Solar gets nod from Alachua commission to build array near Paynes Prairie

By DAN MILLOTT

The Alachua County Commission gave Sybac Solar LLC the go-ahead to start work this summer on a $6 million, 1.5-megawatt solar array on land near the Paynes Prairie Preserve State Park.

Once operational, the plant will sell electricity to Gainesville Regional Utilities as part of GRU's unique feed-in tariff program.

Sybac consultant Gary Dounson, PE, owner of Gainesville-based Gary Dounson & Associates Inc., said that construction will take about two months to complete.

Sybac looks to have their solar farm operational by year's end.

The proposal for the controversial solar array had met with stiff opposition when it first came before Alachua County officials in March. It was sent to the county's planning and zoning board where approval of a variance was denied. County staff had recommended approval prior to that board decision.

The matter then moved back to the county commission where the proposal was approved this summer.

While there are still those voicing opposition, Sybac officials said that some project opponents changed their point of view after the company's commission presentation.

Rachell Meek, GRU's business efficiency program coordinator, said the utility is now buying about 14 megawatts of power from over 200 sources in the Gainesville area.

Under the arrangement, Sybac will sell power to GRU for 20 years.

Their solar array will be built on land leased from the Alachua County Conservation Trust.

After the 20 years, the land will revert to the trust. The panels would be removed at that time.

The nine-acre Paynes Prairie site is an abandoned dairy farm. A spokesman for Sybac noted that their solar array will cover just over two of those nine acres.

The company plans to remove some of the remnants of the old farm in a cleanup operation. They also plan to plant a buffer of trees to shield the solar panels from view.

The Paynes Prairie project is not the first site on which Sybac has built arrays in the Gainesville area. Several have been operational for some time, providing power to the GRU grid.

Perspectives

Changes to state Petroleum Restoration Program will affect prioritization, procurement and performance

By JEFF LITTLEJOHN, PE

Over the last several months, we have undertaken the large-scale challenge of reinventing our decades-old petroleum program in order to better clean up the environment and improve value to the taxpayer. The Florida Department of Environmental Protection has made important progress recently, and I want to thank all stakeholders for working alongside us as we undertake this challenge.

This is an important program within the DEP, which is why DEP Secretary Herschel Vinyard made it a priority to improve.

We are pleased to report that the Joint Legislative Budget Commission on Sept. 12 approved DEP's plan to further improve the program by competitively procuring cleanup contracts and prioritizing the highest-risk sites for cleanup.

The core mission of the petroleum cleanup program is to achieve protection of human health and safety, and the environment in a cost-effective manner. With this in mind, the program is developing new rules and policies that change the way site cleanup work is prioritized, procured and performed.

The plan approved by the Legislature includes evaluating all high-risk sites scored 75 and above to determine the best course of action for those sites. The department's immediate focus is on bidding cleanup work at those sites.

Simultaneously, the department is diligently working to reduce operational costs for active remedial systems, and we will reinvest those savings in site assessments of the significant backlog of sites for which we have little or no current information.

There are two major program improvements that will have an impact on the petroleum cleanup industry. The first establishes the process for procurement of site cleanup services and the second establishes the criteria for re-scoring sites.

The department's intent is to make improvements to the Petroleum Restoration Program so that sites are remediated and restored in a cost-effective manner, while maintaining a commitment to achieving cleanup goals that are consistent with Florida's stringent environmental standards.

In order to effectively implement the changes necessary to meet the established goals, the department is currently working on two rules, Chapter 62-771, Florida Administrative Code, and Chapter 62-772, FAC. No changes to existing cleanup standards or closure procedures—the cleanup criteria rule of Chapter 62-780—are being proposed.

Chapter 62-771, the "Scoring Rule," is being revised to prioritize funding and rehabilitation work to sites that pose the greatest risk to human health and the environment, which is where the department ought to focus its resources.

As part of the needed changes to the program, DEP will re-evaluate a site's priority funding order once the site assessment has been completed and the potential threat has been evaluated. An additional rescoring will be performed after site remediation activities have addressed the potential threat posed by a site.

This means the department will re-score sites that have had contaminant source reduction performed on them, thereby making them eligible for less-active remediation or long-term monitoring. As sites qualify for long-term monitoring, new sites can be assessed and brought into active remediation.

Chapter 62-772, the "Procurement Rule," was drafted to allow the program to transition from the existing "preapproval contractor" approach to a competitive procurement system that will provide for a more cost-effective, efficient and fiscally accountable program.

We intend to develop a pool of competitively procured, qualified contractors, or agency term contractors, divided into three regions across the state, through a procurement process consistent with Florida Statutes 287.057. Once agency term contractors have been selected, procurement of remedial services on individual sites will be through invitations to bid, requests for proposals, informal bids and electronic quotes using the MyFloridaMarketPlace system.

The Low-Scored Site Initiative program has also gone through changes. LSSI is important, as it has allowed the closure of more than 100 properties across the state that otherwise would not have been possible due to their low score.

We will fund the LSSI at the full $10 million limit this year. And although it is a volunteer program, we anticipate getting more than 400 applications this fiscal year. The department will be issuing the first LSSI contracts by mid-October.

The program's mission remains to protect human health and the environment in a cost-effective manner. By incorporating those principles to actively funded sites with little to no risk to human health and the environment, and focusing on operational cost savings, we intend to aggressively address the backlog of 6,700 sites dating back 20 or more years.

Department leadership believes these changes and the steps laid out in the plan will result in a more effective and efficient program that ultimately will achieve cleanup objectives at every site in its portfolio without loss of protection to human health or the environment.

We appreciate the feedback we've already received from site owners, consultants, professional associations and environmental groups, and we appreciate their continued support to make these changes successful.

Jeff Littlejohn, PE, is the deputy secretary for regulatory programs at the Florida Department of Environmental Protection in Tallahassee.

Florida Specifier
P.O. Box 2175
Goldenrod, FL 32733

Michael R. Eastman
Publisher/Editor
Goldenrod, FL
mreast@enviro-net.com

The *Florida Specifier* welcomes columns, articles and letters to the editor on any subject or issue pertinent to the environmental, regulatory and technical areas the newspaper covers. We reserve the right to edit all submissions for newspaper style and publish submissions on a space-available basis.

Emissions of air pollutants continue on downward trend across state

By SUSAN BEASON

Florida's air quality had a banner year in 2012 and, as a result, the state's air is among the cleanest in the nation. This is due to a variety of initiatives intended to reduce emissions, including improved technology in motor vehicles and industrial plants, cleaner-burning fuels and state programs that reward reduced emissions.

Evidence of this reduction can be seen in the emissions data from the state's industrial facilities that are at their lowest levels since the Florida Department of Environmental Protection began tracking them in 1985.

These industrial facilities released 412,628 tons of pollutants in 2012; the record high was 1.43 million tons in 1998. This represents a 71-percent drop in emissions over the past 14 years.

Emissions decreases from Florida's power sector have been especially helpful in achieving this improvement. Over the past decade, their emissions of sulfur dioxide and nitrogen oxides have dropped 83 percent.

The primary result of this decrease in air emissions is that Florida's ambient air quality has steadily improved.

In order to quantify this improvement, the department manages a statewide network of more than 200 air quality monitors that cover more than 90 percent of Florida's population.

The monitors capture ambient air concentrations of the six criteria pollutants—carbon monoxide, lead, nitrogen dioxide, sulfur dioxide, ozone and particulate matter—and provide data used in permitting decisions as well as federal attainment designations.

Florida is in the enviable position of having very few nonattainment areas. In fact, attainment areas account for less than one percent of the state's area. Had the emission decreases not occurred, Florida would have many more such areas.

Currently, Florida has only one lead nonattainment area within Hillsborough County surrounding a secondary lead smelter, and two sulfur dioxide nonattainment areas surrounding two industrial facilities within Hillsborough and Nassau counties. The department is working diligently with its partners to bring these areas into attainment in advance of federally-established deadlines.

Statewide, Florida does not have any other nonattainment areas for the remaining criteria pollutants, including ozone and particulate matter, arguably the two most critical pollutants in terms of impact on human health.

Ground-level ozone, the main component of smog, is formed on hot, sunny days by chemical reactions in the lower atmosphere between ozone precursors, such as nitrogen oxides and volatile organic compounds. Florida's ozone levels have declined significantly since the 1980s, largely due to reductions in emissions of ozone precursors from motor vehicles and industrial plants.

Particle pollution can be emitted directly from a source such as a construction site, but most of the particle pollution in the U.S. forms due to atmospheric reactions with precursor pollutants such as sulfur dioxide and nitrogen oxides. Like ozone levels, particulate matter concentrations also have declined significantly in the state, largely due to the substantial reductions in sulfur dioxide and nitrogen dioxides.

The department also is working to implement creative initiatives that incentivize emissions reductions. Most recently, the department held a Clean Air Act Title V "fee holiday" that reduced emissions by nearly 1,900 tons while saving Florida small businesses more than $300,000 statewide.

The fee holiday allowed businesses that curbed emissions below a certain threshold to have a $5,000 fee waived.

This year, if major industrial facilities release fewer air emissions than authorized by permit, the department will allow those facilities to pay fees only on the pollutants actually emitted rather than the amount they are permitted to emit. This will provide businesses further financial incentive to reduce pollution.

As a result of the emissions reduction efforts, Florida's air quality has been recognized nationally. Numerous Florida cities were ranked among those having the cleanest air nationwide, and no city in the state was named to the most-polluted list compiled in the recent American Lung Association "State of the Air" report.

The department expects emissions of air pollutants to continue on this downward trend. Continued use of traditional regulatory and incentive-based measures will ensure that Florida is as prepared as possible to comply with increasingly stringent national clean-air standards.

Susan Beason is a public information specialist with the Florida Department of Environmental Protection in Tallahassee.

Municipalities may be violating Florida law with some contract awards

By LYLE JOHNSON

Florida courts have consistently held that contracts should be awarded to the "lowest *responsible* bidder." Price matters, but the bidder must also demonstrate that it is responsible, and qualified to perform the work.

"Responsible" has been judicially defined in Florida to include such factors as degree of experience, reputation, past performance, outstanding obligations, integrity, as well as other matters that might influence the ability to perform the contract. As a result, courts have upheld the right of government entities to award contracts to bidders who are not the lowest bidders.

In a recent legal opinion, prominent Tallahassee attorney Randall Denker wrote "Other factors have been upheld by courts to be legitimate reasons for accepting or rejecting bids. For example, in the case of *GTech Corporation v Florida Department of the Lottery,* 737 So.2d615 (Fla. 1st DCA 1999), the government awarded a contract where price was only 20 percent of the total 100 points which could be awarded. The other 80 points included such factors as 'experience in lottery operations, the technical specifications of the proposed systems, the operational and security features of the systems, and the marketing features. As a part of the evaluation, the committee also conducted on-site visits to allow the respondents to demonstrate their systems.' The rejected bidder challenged the selection criteria but the court upheld the government's assessment methodology. "

Although counties around Florida have different local laws delineating their bid processes, they must all comply with state law, which takes precedence. State law requires that a range of factors be taken into account so that the "best value" can be received for taxpayer dollars. Section 287.01 (4), Florida Statutes, defines "best value" as "the highest overall value to the state based on objective factors that include, *but are not limited to, price, quality,*

JOHNSON
Continued on Page 15

Calendar

October

OCT. 1 – Course: Introduction to DEP SOP's for Surface and Groundwater Sampling, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 1-4 – Course: Wastewater Class C Certification Review, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 3 – Course: Backflow Prevention Recertification Review, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 4-12 – Course: Backflow Prevention Assembly Tester Training & Certification, Venice, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 4 – Course: Backflow Prevention Recertification Exam, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 5 – Course: Backflow Prevention Recertification Review, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 5-9 – Conference: WEFTEC-86th Annual Water Environment Federation Technical Exhibition and Conference, Chicago, IL. Call 1-800-666-0206 of visit www.weftec.org.

OCT. 7-11 – Course: Backflow Prevention Assembly Tester Training & Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 7-11 – Course: Backflow Prevention Assembly Tester Training & Certification, Lake Buena Vista, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 7-9 – Course: Asbestos: Inspector, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 7 – Course: Lead: Renovation, Repair and Painting, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 7 – Course: Globally Harmonized System (GHS) of Hazard Communication-The New Requirement, Webinar, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 7 – Course: Globally Harmonized System (GHS) of Hazard Communication-The New Requirement, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 8-9 – Course: Refresher Training Course for Experienced Solid Waste Operators-16 Hours, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 8 – Course: Refresher Training Course for Experienced Solid Waste Operators-8 Hours, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 8 – Course: Refresher Training Course for Experienced Solid Waste Operators-4 Hours, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 8 – Course: Hazardous Waste Regulations for Generators, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 9 – Course: U.S. DOT Hazardous Materials/Waste Transportation, St. Petersburg, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 10-11 – Course: Asbestos: Management Planner, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 10-11 – Conference: 2013 Florida Remediation Conference, Orlando, FL. Presented by NTCC Inc. and the Florida Specifier. Call (407) 671-7777 or visit www.enviro-net.com.

OCT. 12-20 – Course: Backflow Prevention Assembly Tester Training and Certification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 12 – Course: Backflow Prevention Recertification Exam, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 14-16 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 14-17 – Course: Lead: Supervisor/Contractor, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 15-16 – Course: Sequencing Batch Reactor Operation, Make it Work for You, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 16-17 – Summit: 2nd Annual Sea Level Rise Summit 2013: Resilience in the Face of Change, Ft. Lauderdale, FL. Presented by the Florida Atlantic University Center for Environmental Studies. Call (561) 799-8554 or visit www.ces.fau.edu/slr2013.

OCT. 18 – Course: Backflow Prevention Recertification Review, Fort Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 19 – Course: Backflow Prevention Recertification Exam, Fort Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 21 – Workshop: Sustainability Standards and Methods: A State of the Union, Jacksonville, FL. Presented by ASTM International. Contact Michael Schmeida at (216) 292-5058 or visit www.astm.org/e60wrkshp10-13.

OCT. 21-25 – Course: Asbestos: Contractor/Supervisor, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 23-25 – Conference: Annual Conference of the Florida Local Environmental Resource Agencies, Orlando, FL. Call (813) 389-2238 or visit www.flera.org.

OCT. 23-25 – Meeting: Fall Meeting and Technical Session of the Florida Society of Environmental Analysts, West Palm Beach, FL. Call (386) 441-3111 or visit www.sea.net.

OCT. 26-Nov 3 – Course: Backflow Prevention Assembly Tester Training and Certification, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 29-30 – Course: Initial Training Course for Transfer Station Operators and Materials Recovery Facilities-16 Hour, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 29 – Course: 4-Hour Refresher Course for Spotters at Landfills, C&D Sites and Transfer Stations, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 29 – Course: 8-Hour Training Course for Spotters at Landfills, C&D Sites and Transfer Stations, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 29-31 – Course: Microbiology of Activated Sludge, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 30 – Course: Personal Protection Equipment (PPE) and Safety Procedures, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 30 – Course: Heavy Equipment Safety, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

OCT. 30 – NOV. 1 – Conference: 2013 Florida Redevelopment Association Annual Conference, Tampa, FL. Call 1-800-342-8112 or visit www.redevelopment.net.

November

NOV. 1-9 – Course: Backflow Prevention Assembly Tester Training and Certification, Fort Myers, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

NOV. 2-10 – Course: Backflow Prevention Assembly Tester Training and Certification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

NOV. 2 – Course: Backflow Prevention Recertification Review, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

NOV. 3-7 – Meeting: 2013 International Annual Meetings of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, Tampa, FL. Call (508) 273-8080.

NOV. 4 – Course: Backflow Prevention Recertification Review, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

NOV. 5 – Course: Backflow Prevention Recertification Exam, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit www.treeo.ufl.edu.

NOV. 5-6 – Course: Flow Meter Calibrations, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JOHNSON

From Page 14

design, and workmanship."

"Price is always important in any bid process," Denker concluded. "But the vendor must also demonstrate that its proposal is responsive to the bid solicitation and that the vendor is a responsible bidder in terms of providing an acceptable quality of service. Simply submitting the lowest bid is not sufficient to meet the requirements of Florida law."

Lyle Johnson is president of Florida-Spectrum Environmental Services Inc. in Ft. Lauderdale. He can be reached at lajohnson1@aol.com.

Driller permitted for oil exploration near panther wildlife refuge in SW Florida

By SUSAN TELFORD

In August, the South Florida Water Management District issued a water permit to the Dan. A. Hughes Petroleum Geological Co. of Texas, allowing the drilling company to withdraw up to 60 million gallons of water per year for industrial use.

That permit approval was followed up in September by a permit to drill from the Florida Department of Environmental Protection, which the agency approved just before the Sept. 30th deadline.

"The agency had until Sept. 30 to make its decision on the drilling permit," said Dee Ann Miller, spokeswoman for DEP in a published statement weeks prior to the deadline.

Although the water management district permit and the drilling permit from DEP have been approved, Collier County officials still have the final say on any exploratory or production wells.

The proposed drilling is not going over very well with locals.

According to the *Naples News*, activists erected a sign that "red-flagged" the land in social protest with a homemade stop work order.

A grassroots group called Preserve our Paradise has kept up continuous protests—including a protest outside the doors of Collier Resources, the company that owns mineral rights to the land Hughes Co. wants to explore, and a petition to garner media attention and create awareness of the situation.

POP spokesperson Karen Dwyer doesn't know if their protests will stop the drilling, but the group feels a sense of urgency when addressing possible drilling within 1,000 feet of their community and adjacent to the boundary of the Florida Panther National Wildlife Refuge.

"There are other options available to them," said Dwyer.

Residents who live in the Golden Gate subdivision are opposed to the drilling citing the potential of harm to the aquifer that provides fresh water to residents, wildlife, farming and other users.

Other concerns include noise caused by the drill rigs, traffic, health and safety, and the drilling's effect on the continued viability of the endangered Florida Panther.

FEDFILE

From Page 2

The moorings will position vessels with the turbines or other apparatus to be tested, mounted to them.

To meet permit requirements, FAU is conducting benthic surveys, followed by sea trials of the moorings. If that goes well, the first moorings and test berths could be installed in early 2014, with turbine tests beginning in the middle of next year.

Sulfur dioxide overages. As one of her first acts in office, new EPA Administrator Gina McCarthy signed off on a document designating 29 areas in 18 states that failed to meet the one-hour sulfur dioxide limit of 75 parts per billion.

Two of those 29 areas are in Florida.

The Mosaic phosphate plant in the Hillsborough County community of Riverview and the Rayonier Performance Fiber Mill near Jacksonville in Nassau County are Florida's two emitters on the list.

Sulfur dioxide from the Mosaic plant arises from the use of sulfuric acid to separate phosphate from calcium in the ore. Rayonier Performance Fiber is a forest products company that makes paper and cardboard products.

It also has a biomass-burning, electricity-producing turbine at its Nassau County plant.

The EPA action arises from the failure of these two plants to meet a standard of 75 ppb sulfur dioxide measured within a single hour.

That standard, passed in the summer of 2010, gives emitters until 2014 to be in compliance.

So although the two Florida plants are not in compliance with the current standard, the EPA is only advising them of that at this point.

A spokesperson for Mosaic, the world's largest fertilizer producer, said that its plant will be in compliance by the regulatory deadline and has been working with Hillsborough County environmental officials to ensure compliance.

Back to court over water quality laws. In mid-August, Alfred and Cindy Davis of Gulfport and the Florida Wildlife Federation filed a lawsuit in U.S. District Court in Tampa over water quality standards enforcement in Florida.

The lawsuit's brief alleges 23 violations of the Clean Water Act and asks the court to enforce and implement anti-degradation water quality provisions of the Clean Water Act and the state of Florida's adopted anti-degradation water quality standards.

In more general terms, their lawsuit alleges that state-designated Outstanding Florida Waters are being degraded by pollution even though the state entered into an agreement with the EPA in 2010 as a result of a prior lawsuit.

The plaintiffs want the court to rule for effective implementation of laws and rules that protect water quality.

The Davis couple have sued the EPA in the past and in 2009 reached a settlement in which the EPA promised to review its list of impaired waters to determine if anti-degradation policies were being appropriately applied.

The Florida Wildlife Federation was not part of the Davis' 2009 lawsuit but was party to a 2008 lawsuit that eventually led to establishment of numeric nutrient criteria standards for water quality in Florida.

With the plaintiffs' track record of successful environmental litigation, another landmark case for Florida's environmental regulation may be in the making.

Port channel deepening works through public, agency review process

BY DAN MILLOTT

The National Marine Fisheries Services recently questioned some of the conclusions reached by the U.S. Army Corps of Engineers on their environmental assessment of the proposed deepening of the channel at the Port Everglades.

But Port Everglades Director Steve Cernak, PE, is not overly concerned about those comments. He said the views of the NMFS are a standard part of the public review process where comments from many entities will be received and reviewed

"We are not at the funding stage," he said. "The next step would be the design stage and that would have to be completed before we get to the funding phase."

He added that the National Marine Fisheries Services as well as the Florida Department of Environmental Protection and the U.S. Environmental Protection Agency are all cooperating on the port channel deepening project.

"They all have their comments and might have disagreements on their approaches," he said.

Cernak emphasized that Port Everglades has two responsibilities. On the one hand, they must make sure the port grows as a business, but they must also be good corporate citizens in protecting the environment.

He noted that the various agencies "will sort out where they are going. So I expect there will be some mitigation."

Jason Spinning, chief of the Jacksonville coastal sector for the corps, said they are evaluating the comments that have come in. "We are negotiating with all entities to resolve any potential issues."

Spinning said the corps is considering all the comments "to verify that we have the best project possible."

Cynthia Perez, project manager for the Port Everglades project, acknowledged that the number of comments generated via public meetings has exceeded what they anticipated.

At this stage of the project, money has been appropriated for the feasibility study and Perez said it may be necessary to get additional feasibility study funds.

No funds have been appropriated for the pre-construction design or engineering phase or actual construction at this stage.

The current timetable calls for construction to begin in 2017 and be completed in 2022.

But that timeline could be altered if Congress does not approve a funding bill in a timely manner.

NOTES

From Page 3

facility, the center will collect 250,000 raw tons of waste material a year from a 25-mile radius around the plant.

INEOS completed construction last year and began producing renewable power for the surrounding area from several types of waste. INEOS acquired the technology it employs at the plant about five years ago, but the process has been under development for the past two decades.

The entire facility cost about $130 million. Loans and grants came from the U.S. Energy and Agriculture departments.

Duke pulls nuke. Duke Energy has scrapped plans to build a nuclear plant in Levy County. But the company said it still believes the site is a good location for future nuclear generation.

Progress Energy first announced a plan to build the Levy plant in 2006. It was supposed to come online by 2016 and cost between $4 billion and $6 billion. But along the way, the cost mushroomed to $24 billion and the operational date was pushed back to 2024.

Duke, which recently bought Progress Energy, supplies electricity to more 1.6 million Florida customers.

Duke announced it is terminating its engineering, procurement and construction agreement for the Levy project, which called for the construction of two 1,100-megawatt nuclear units.

Compliance at Panhandle recycler. State regulators have told West Florida Recycling to resolve compliance issues at its North Palafax Street facility. The company has been grappling with both environmental regulations and financial challenges.

WFR processes about 125 tons of recyclables from Escambia and Santa Rosa counties each day. But in September last year, the Florida Department of Environmental Protection sent a letter to the firm about unacceptable conditions at the facility that have not been improved.

DEP told the company it must submit an application for a permit regulating stormwater runoff. But after numerous e-mails and phone calls, DEP said the company has still not obtained a permit.

The NPDES permit will require WFR to develop a plan to prevent stormwater pollution, train employees, establish routine facility inspections, and conduct water analyses and report results to DEP.

By Oct. 18, the company must clean up its facility and remove all the recyclables that have been ruined by flood water.

The facility regularly floods during heavy rainstorms. After the July 4 holiday, WFR had to shut its doors after rain ruined hundreds of tons of recyclable materials.

WFR must report to DEP the volume of ruined recyclables it sends to the landfill each week.

Company officials say they are confident they can meet the agency's expectations.

Names in the news. Drew Bartlett has been named deputy secretary for water policy and ecosystem restoration at DEP, replacing Greg Munson.

In addition, Leonard Zeiler, a former legislative committee staff director, has started work as department chief of staff following the departure of Jennifer Fitzwater to the Florida Fish and Wildlife Conservation Commission.

Bartlett has been DEP's director of the Division of Environmental Assessment and Restoration since 2011, overseeing the development of numeric nutrient criteria and water restoration plans.

Zeiler, a program administrator in DEP's office of water policy, was director of legislative planning at the Florida Department of Health from 2011 to 2012.

Warren Zwanka has joined the Suwannee River Water Management District as a senior hydrologist. In this capacity, he will oversee the water use and water well programs within the resource management division.

During his 18-year career, Zwanka has held various positions at the Suwannee district as well as the St. Johns River Water Management District.

Marine mammal, bird mortality events in Indian River Lagoon perplex investigators

By ROY LAUGHLIN

Bottlenose dolphin and manatee deaths in the Indian River Lagoon are currently the focus of investigations by two agencies, the National Oceanic and Atmospheric Administration and the Florida Fish and Wildlife Conservation Commission.

Hubbs-Seaworld Research Institute in Brevard County is a partner in both studies, collecting and handling tissue samples for analyses.

Mortality occurred primarily in the northern segment of the Indian River Lagoon. For all three species, reports of dead animals began to increase late last year and through the first half of 2013.

The cooperating two agencies have a slightly different focus in this effort.

FWCC is taking the lead on the manatee investigations, while is NOAA focusing on bottlenose dolphins.

The investigations run roughly in parallel with a series of tiered analyses protocols that attempt to characterize xenobiotics, biotoxins such as those produced by red tide or other microalgae, diseases or possibly environmental factors that appear to be the cause of death.

Studies are still in progress but so far there are tantalizing differences in observations about the mortality of manatees and dolphins.

More than 115 manatees have died during the most recent mortality event.

The peak occurred in March, 2013, when 50 dead manatees were counted. The event seems to be tapering off.

The most recent manatee death occurred in early July, with approximately a month following without another recorded manatee death.

Photo courtesy of Hubbs-Sea World

Hubbs Sea World Research Institute field workers collect a dead dolphin from the Indian River Lagoon for necropsy as part of a study headed by NOAA.

"The peak (for incidence of deaths) was in March, so it appears to be peaking, at least temporarily," said Kevin Baxter, a spokesman for the FWCC's Fish and Wildlife Research Institute in St. Petersburg.

Bottlenose porpoise deaths numbered just over 60 as of mid-August. Although fewer than the number of dead manatees, it is about three times the normal mortality usually observed in the Indian River Lagoon's estimated population of 700 bottlenose dolphins.

Older adults and some juvenile bottlenose dolphins were most commonly found dead. The number of deaths trended upward to a peak of 13 in June, 2013, followed by a drop to only three deaths in July.

"It seems like things might be winding down but (the number of deaths) is still above average," said Blair Mase, marine mammal stranding coordinator with NOAA's Southeast Fishery Science Center.

Although one might suspect a common cause lead to mammal species in the same area experiencing similar mortality events, investigators are perplexed by signs of different causes in this particular case.

Mase characterized the dead bottlenose dolphins as "emaciated." Stomach contents were minimal, and some had stomach contents that were not typical prey, including plant material. It appeared that a lingering condition led to death.

The appearance of manatees was the opposite. "At the time of death, the manatees appear to be healthy, but to have died suddenly," said Baxter. The relatively sudden death of manatees is typically associated with biotoxins produced by microalgae.

"We have tested for known marine toxins associated with algal blooms," he said. "All have been negative. As for viruses or other pathogens, so far we haven't found anything on that front."

Cold weather is also another sudden-death factor, but this year's winter was notably warm, unlike those of 2009–2010.

Results so far are leading investigators to consider environmental factors more strongly than has been the case in the past. Within the past two years, the northern segment of the Indian River Lagoon experienced a micro-algal bloom at the end of the second cold winter that was notable for both its extensive occurrence and its longevity.

It started in the Banana River and quickly spread to the Indian River between Sebastian Inlet and Turnbull Hammock. The largest number of carcasses was found in the Banana and Indian rivers between Stare Road 528 and the south end of Merritt Island.

In the northern part of the lagoon, it occurred from January or February through the summer. During the bloom, some of the highest chlorophyll values ever measured in the Indian River Lagoon were recorded.

The algae bloom itself was as detrimental to marine mammals and birds as was the collapse of the seagrass beds that occurred during the micro-algal bloom.

Drift algae populations are thought to have collapsed prior to the microalgae bloom, and some have suggested that the nutrients that drift algae released were the source for explosive growth and persistence of the microalgae.

The environmental causes remain to be more fully explained, however, because while emaciated porpoises seem consistent with an ecosystem that cannot support so many high trophic level consumers, the body condition of manatees is not indicative of this.

Both studies are ongoing. Once samples have been analyzed, a report summarizing findings will be prepared by FWCC and NOAA scientists for their respective studies.

Mase said that the bottlenose dolphin analyses may take up to a year to complete. At this point, there is no likely suspect.

NOAA has conducted 60 studies of unexplained marine mammal mortality events from 1991 to 2013. More than half of the studies were not able to identify a specific cause of death.

Scientists launch seagrass project in IRL

By BLANCHE HARDY, PG

Scientists from Atkins North America recently embarked on a three-year experimental test program to transplant seagrass at sites within in Indian River Lagoon.

The St. Johns River Water Management District and Sebastian Inlet District committed $110,00 to the project in hopes of restoring portions of the now barren 97 square miles of critical habitat lost and species adversely impacted by the rapid disappearance of lagoon seagrass.

"The purpose of the experiment is to determine why canopy-forming seagrass is not returning to areas where water quality is supportive, and to assess whether transplanting seagrass is a viable option for recruiting and expanding grass beds in denuded areas of the lagoon," said Hank Largin, public communications coordinator in the district's Maitland office.

The Atkins scientists are planting shoal grass, a common fast-growing native variety of seagrass. Small localized areas of damaged beds have been successfully repaired in the past utilizing transplantation.

"Scientists are monitoring several sites in the Indian River Lagoon system where plugs of shoal grass have been transplanted to barren areas of the waterway," Largin said.

SEAGRASS
Continued on Page 20

DEP moving forward with Frostproof petroleum cleanup

By SUSAN TELFORD

A small coffee shop located along Scenic Highway in Frostproof is quietly brewing lattes above ground while a plume of contamination from the facility known three decades ago as Keen's Gas Station is quietly seeping underground and moving east.

"It's a cleanup, so that's a good thing," said Steven Dutch, senior engineering consultant with Chastain-Skillman Inc., the consulting engineers for the city of Frostproof.

"The bad thing is that (the leak) starts at what used to be Keen's Gas Station, crosses under an FDOT highway and goes under several historic buildings," he said.

Although site rehabilitation was still being conducted, the Florida Department of Environmental Protection gave public notice in June of 2005, and again in September of 2010, that there was pollution in the soil around the old gas station site.

The plume is under Scenic Highway, State Road 17, and needs to be drawn out.

Last month, DEP asked the Frostproof City Council for permission to do just that.

"They'll be running perforated horizontal half-inch pipe 35 feet below the surface," said Dutch.

The company doing the clean up, Environmental Consulting & Technology Inc. of Tampa, will bore horizontally under the surface from behind the former gas station, going under it, across the highway, down the entire block of the Ramon Theater, and will come out in a city-owned alley to the east. Crews will use a vacuum system to draw out the old fuel.

The DEP is paying for the coordinated cleanup.

DEP seeks input from permit, license holders

Have a permit or license with the Florida Department of Environmental Protection? How much does it cost for you to comply with the terms?

To help determine the economic impact that environmental regulations have on businesses, DEP has designed a survey to capture some of that data.

The survey addresses the following permits or licenses:

- Coastal Construction Control Line
- Consumptive Use Permit
- Domestic Wastewater Permit
- Environmental Resource Permit
- Industrial Water Permit
- Joint Coastal Permit
- NPDES Stormwater Construction Generic Permit
- NPDES Stormwater Multi-Sector Generic Permit
- NPDES Stormwater Municipal Separate Storm Sewer System
- RCRA Operating Permit
- RCRA Post Closure or HSWA Corrective Action Permit
- Underground Injection Control
- Used Oil Permit
- Waste Water Treatment Plant/Drinking Water Plant/ Distribution System Operator Certification

If your business requires a DEP permit, your input will serve as a valuable tool for assessing the effects of permitting on the economy. The survey, located on DEP's Business Portal home page, is available at www.dep.state.fl.us/secretary/portal/default.htm until October 31.

SJRWMD supports request for more groundwater

By PRAKASH GANDHI

Officials with the St. Johns River Water Management District approved a request by a DeLand juice manufacturer to withdraw more groundwater.

The final approval came at the district's governing board meeting in early September

Ardmore Farms, which mixes and packages fruit and vegetable juice products, asked the district this spring to increase its annual allowable water use from 93.2 million gallons per year to 120 million gallons per year.

Company officials said they needed the increase because business has grown about 13 percent since 2010 and because the company is using more water in some of its juice blends.

At first, hydrologists with the district were concerned about the company's request to amend its consumptive use permit. But they later concluded that any impacts to local lake levels would occur after the company's permit is set to expire in 2018.

Any future impacts would have to be resolved when the company applies for its permit renewal at that time.

Some neighbors worry that the company's increased water use will lower groundwater levels in the underlying aquifer that supplies their drinking water and feeds Lake Molly.

The district is also concerned about the potential impact on nearby lake levels—but over a longer term.

The district said Ardmore is one of 15 permit holders contributing to about 75 percent of the impacts to the area around Lake Hires and Lake Daugherty, where the district has set minimum flow and level goals.

Hank Largin, public communications coordinator for the district, said that after internal discussions among district staff, it was determined that any minimum level violation would occur after the current Ardmore permit expires.

"It was determined that a violation will not occur due to the (requested) increase during the time of the permit," Largin said.

Conditions will be put in place in the permit modification to ensure that adequate measures are taken to avoid future violations, he said.

Ardmore has operated in DeLand since the 1960s and employs about 190 people, said company spokesman Joe Koch.

"Over the past five years, we have grown between five and 10 percent," Koch said. "Our business continues to grow and with that comes the need for more water."

At around 150,000 square feet, the DeLand facility is one of the largest plants that the company owns in the country, Koch said.

As for the environmental impacts of any increase in water use, Koch said: "I put my confidence in the (officials) that approved the application."

Broward, Palm Beach work to solve mutual wastewater disposal problem

By DAN MILLOTT

Two neighbors living side by side have a problem. One has an over abundance of something their neighbor desperately needs.

In this case, Broward County has an over abundance of wastewater effluent to properly dispose of. Currently much of it still flows through outfall pipes into the Atlantic Ocean.

But a 2008 state law will spell an end to that practice by 2022.

Fortunately, neighboring Palm Beach County can use the effluent.

Assistant Palm Beach County Administrator Shannon LaRocque makes the point in simple terms: "Palm Beach County does an excellent job of using its wastewater—to the point that it has none."

About a year ago, utility professionals in the two counties began discussing the pending problem and some possible solutions.

LaRocque said there is a high concentration of golf courses in Palm Beach County.

"We now use 100 percent of our effluent. There are golf courses that want the resource. But we can't provide it."

In Broward County, the situation is reversed. They have millions of gallons of wastewater to dispose of.

Alan Garcia, PE, director of Broward County's Water and Wastewater Services, said Palm Beach County has indicated they can take as much wastewater as Broward can send them.

When first looking at the problem, Garcia said they had to devise a way to reuse 60 percent of their wastewater, 22 million gallons a day.

Consultants crunched the numbers and came up with a plan—at a huge cost of $450-$489 million—to construct a new plant to treat the wastewater and to lay pipelines to connect the multiplicity of utility systems in the county.

Currently, Broward has a wastewater plant capable of treating 10 million gallons per day.

The plan now in the works calls for Broward to expand its current plant, increasing its capacity to 25 million gallons per day.

The next step is for them to run a pipeline to carry the wastewater to the Palm Beach County line.

Palm Beach would continue the line to where it is needed from that point.

"We would finance Palm Beach County's construction costs and they would pay us back," Garcia said. "The payback to us would come from revenue produced by selling the reuse water to their customers."

When net revenue is achieved, the two counties would split the profits 50-50.

Garcia said the project benefits both counties.

"For Broward, it will provide a revenue stream so we can finance other projects." As far as Garcia knew, no other multiple jurisdictions have entered into a similar agreement.

Under this proposal, the plant expansion would cost $60 million and the cost to install the pipelines would come in at $40 million.

The target date for completing the project is late 2015 or early 2016.

When operational, the plant could send 16-18 million gallons of wastewater per day to Palm Beach County.

Both county commissions signed off on the concept and instructed their staffs to work on plans to carry it out.

The concept has also been embraced by environmental groups like the Sierra Club since it provides a path to comply with the state mandate to stop sending wastewater effluent into the ocean.

FLAGLER

From Page 6

tem and making the improvements is $13.1 million.

The city of Bunnell will handle day-to-day operation of the facility.

Flagler County Administrator Craig Coffey could not be reached for comment. But at a workshop earlier in the year, he touted some major benefits of acquiring the utility.

"Because this will be a utility proprietary fund, all the money necessary to acquire, upgrade and operate the utility will come from its users and not property taxes," Coffey said.

The system features a 750,000-gallon-per-day treatment plant with aeration, sand filtration and lime softening. There are four wells serving the plant.

The water plant is considered to be in fair condition but will require some upgrades to its treatment process.

Current average daily demand is about 160,000 gallons per day.

The wastewater treatment plant has a capacity of 475,000 gpd. Currently, the average daily flow is 125,000 gpd.

Coffey said the wastewater plant is in poor condition and in need of upgrade.

Bunnell currently operates a utility about four times the size of the county's facility and has drastically upgraded its utility operations in recent years.

The city will qualify for wastewater grants for which the county is not eligible, he said.

Coffey said at the workshop that having Bunnell handle the daily operations of the facility will have major benefits.

"In fact, because of funding and operational benefits, we should look to partner with the city of Bunnell for several decades on this system" he said.

SEAGRASS

From Page 18

Historically, loss of seagrass was severe but water quality improvements and better management of nutrients and suspended and dissolved substance-laden discharges promoted a decade of recovery.

Seagrass beds began to degrade in 2011 concurrent with an extraordinary 130,000-acre superbloom, prohibiting sustaining sunlight light from reaching the seagrass. The superbloom was the worst such occurrence in seventeen years and it has been followed by annual algae blooms.

The IRL is one of 28 National Estuary Program waterways in the U.S, encompassing both temperate (in the north) and subtropical (in the south) climatic zones. This unusual configuration coupled with the lagoon's numerous freshwater tributaries creates salinity-varied environments resulting in the most biologically diverse estuarine ecosystem in North America.

The IRL supports 685 species of fish, 370 species of birds, 2,100 species of plants and 2200 species of animals.

Marty Baum, the Indian Riverkeeper, reported valuations provided by the Florida Legislature estimate the IRL generates $3.7 billion per year in recreational business. $300 million per year has been estimated in boat and marine sales alone.

Additionally $2.1 billion in citrus production takes place within the direct vicinity. This year, fishermen informed the Riverkeeper that previously abundant seagrass-dependent fish, such as sea trout and redfish, have disappeared. Without the seagrass, biodiversity is diminished and portions of the food chain critical to many local species fail.

Suggestions for the uncharacteristic algae blooms include an excess of nutrients in stormwater, the release of polluted water from Lake Okeechobee, uncharacteristic variations in water levels and salinity, overflow from contaminated mosquito-control ditches and acidification of the water due to climate change.

"The most recent observations indicate that unprotected seagrass plugs at some of the sites show signs of grazing by manatees, while samples protected by cages are either fully intact or have been only lightly grazed near the top of the cage," said Largin.

"No natural recruitment of seagrass has been observed at any of the three sites through August 15, 2013," he added.

Index to Display Advertisers