



Vol. 23 No. 1

# Update to Clients

*Update*

## Soil Standards for Chlordane by Marwan M. Sadat, PhD., P.E.

The NJDEP is planning to publish updated Soil Remediation Standards in the NJ Register. The proposed Residential Direct Contact (RDC) and Nonresidential Direct Contact (NRDC) pathways will be updated. Of particular concern with the proposed standards will be the addition of new parameters. For example, for the pesticide chlordane, the limits expected to be adopted will be 0.2 mg/kg for RDC and 1 mg/kg for NRDC.

Chlordane, a chlorinated pesticide similar to the better-known pesticide DDT, was introduced in the 1940s, and was used extensively during the 1960s and 1970s to control lawn and garden pests, as well as termites. Its use was banned by the federal government in 1988, but because chlordane remains stable for long stretches of time, residues continue to be detected in New Jersey soils, sediments, surface, and groundwater. In fact, chlordane has been linked to large-scale bird poisonings in certain areas of New Jersey. Sampling efforts indicate that the hazard from chlordane may be restricted to suburban areas where chlordane was used on lawns and for termite treatment.

See **Chlordane** continued on page 2

## SAI Helps Tern Landing Development Obtain Critical Permits for Massive Urban Redevelopment Project

SAI designed the closure and redevelopment of the former Elizabeth Landfill in the mid 1990's. When the Jersey Gardens Mall, Cinema and four hotels were built in the late 1990's on 100 acres of the property, the project became the best-known brownfields success story in the state and also won an EPA Phoenix award.

Parcel G, the 30-acre waterfront portion of the old Elizabeth Landfill, was remediated and received an NFA, but remained vacant since the mall was developed.

In 2006, Tern Landing Development acquired Parcel G and conceived of a new city called the Celadon Redevelopment project. Celadon will be New Jersey's first environmentally friendly residential and mixed-use development, and is a



Artist's rendering of the finished Celadon project site in Elizabeth, NJ. Courtesy of Metropolitan United Studio, PLCC.



Artist's rendering of the proposed promenade at the Celadon project site in Elizabeth, NJ. Courtesy of Till Design.

pilot project for the US Green Building Council's new LEED for Neighborhood Development (LEED-ND) program. It will feature a marina, a ferry terminal, a school, retail areas, office space, and hotels. Located near Newark Liberty International airport and midtown Manhattan, Celadon is designed to be a thriving community that will have all the social, artistic and cultural benefits of an urban lifestyle while minimizing its impact on the natural environment. In addition to providing waterfront access and open space, the project will include a number of innovative Green Building technologies intended to conserve energy, water and other natural resources while achieving a level of indoor comfort that is superior to that of conventionally designed buildings.

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## Remediation/Redevelopment Underway in North Bergen

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While chlordane is the cause of much environmental concern, the approach taken by the NJDEP creates much uncertainty, and in the case of chlordane, a whole new liability issue for homeowners vulnerable to issues in their own front yards. Despite being banned for twenty years, there has never been a state standard set for appropriate levels of chlordane. So, under the new standards, any suburban homeowner whose home is over twenty years old should assume that they have unacceptable levels of chlordane on their property. So should we all call the Spill Hotline to report ourselves? Will we all require Preliminary Assessments before we buy or sell our home? And what about cleanups? Bringing in topsoil to create a new garden or top off an existing one can cost hundreds of dollars. Imagine the costs of digging out your entire foundation to rid your yard of trace amounts of chlordane. It is necessary to require cleanups on industrial properties being redeveloped in New Jersey, but most homeowners can't afford the cost of even a small-scale soil cleanup. With our economy in the state that it is, this standard will make housing issues even more serious for the average homeowner.

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A client of SAI's, JFK Condo Developers LLC, is completing remediation of a former 200,000 square foot factory on the Palisades at 5711 Kennedy Boulevard in North Bergen, Hudson County. SAI submitted the Remedial Investigation/Remedial Action Workplan to the DEP in November 2006 and received DEP approval for remediation in May 2007.

The former garment manufacturing site had historic fill and issues related to a series of underground storage tanks. The building has been demolished and remediation is slated for completion this spring. SAI carefully sampled the massive concrete and brick structure so that clean masonry suitable for use as structural fill could be segregated for reuse on-site in accordance with NJDEP's Guidance Document.

JFK seriously considered adaptive reuse of the imposing factory structure, but later opted for demolition/reconstruction to achieve the desired design. Hershey Weis, a principal at JFK, noted, "We always try to design a unique development. In this case we have 180-degree views of the Hackensack Meadowlands. We wanted to construct loft condominiums in a building that fit architecturally with the 'modern style' structures in the neighborhood. We also wanted to provide units that would be affordable for working families."

The project will feature 128 units in two four-story buildings over parking. The site is in close walking distance to the 60th Street light rail station.



*Artist's rendering of The Lofts at Kennedy. Courtesy of Architectura, 2008.*

### **Middlesex Borough Plans Park for Local Landfill**

In the Fall of 2007, Mayor Gerald D'Angelo of Middlesex Borough announced the Council's plans for developing an active recreational complex on the 28-acre former municipal landfill.

SAI has been assisting the Borough in developing a Remediation Closure Plan for the landfill for several years. The case has been complicated by the fact that radiological parameters from the

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# SAI Assists Landfill Owner in Redevelopment Process

Sadat Associates, Inc., was retained by the owners of the Industrial Land Reclaiming, Inc. (ILR) municipal landfill in 2005 to provide ongoing assistance in the post closure maintenance of the facility. The ILR landfill comprises approximately 160 acres and has a mound of waste extending over 100 feet in height. Closed and capped between 1985 and 1987, the landfill has both leachate collection and gas collection systems. Gas is sent to a nearby Utility authority.

“Our property is in a strategic location off a county road near the Turnpike and adjacent to the Raritan River. We knew of SAI’s experience in landfill redevelopment and wanted them to help us examine various development alternatives,” said Gary Lotano, a Real Estate developer and Vice President of ILR.

Over the last year, SAI assisted the owners of ILR in evaluating a transaction by which a 40-acre portion of the landfill would be subdivided and sold to a warehouse developer. The warehouse developer submitted a revised Closure/Post Closure Plan Remedial Investigation and Remedial Action Workplan. Since the landfill was already properly closed, the main concern was providing relief from landfill gas migration into the proposed 570,000 square foot warehouse. Minor waste relocation



*View from the top of the closed landfill towards the Raritan River.*

was also incorporated with the revised closure plan. The site development and subdivision plans were approved by Edison Township in the fall of 2007 and the necessary DEP permits were secured in late 2007. The property was transferred to the new owners early in 2008.

SAI continues to assist ILR in ongoing post closure activities and in evaluation of additional development concepts for the remainder of the property.

are included in the amended design.

SAI’s project team includes Dr. Sadat as Principal in Charge, Joe Wiley, Project Director and Sharon McSwieney, Project Manager. “This project is truly visionary and makes the statement that brownfields should not preclude creation of a brand new urban landscape,” said Dr. Sadat.

## Welcome!

**Dana Boyadjian.**



Mr. Boyadjian has joined the Science Division as a senior project manager. Mr. Boyadjian has a Master’s degree in Sanitary Engineering from Virginia Tech and a Bachelor’s degree in Civil Engineering from Northeastern University. He is also licensed as a professional engineer in NJ and PA.

Prior to joining SAI, Mr. Boyadjian worked for 25 years as a project manager where he had direct technical and financial responsibility for a variety of hazardous waste site soil and groundwater extent-of-contamination studies, remedial cleanups, and brownfield projects. This work was primarily performed in the mid-Atlantic region of NJ, PA and NY for both commercial and state and federal clients.

**Samriti Sharma.**



Ms. Sharma has joined the Engineering Division as Environmental Engineer. Ms. Sharma graduated with a Ph.D. in Environmental Science from Rutgers University in 2007. She also has a Master’s degree in Energy Technology and a Bachelor’s degree in Chemical Engineering.

For her doctoral thesis, Ms. Sharma studied the sorption of herbicides to soil organic matter. Her other projects at Rutgers included sampling and

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## Celadon

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“We are pleased to have SAI as our environmental engineer since they have been in the forefront of brownfields for many years and know this site so well,” said Dil Hoda, Manager of Tern Landing Development.

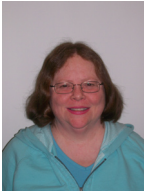
SAI’s assignment includes amending the Remedial Action Plan/Landfill Disruption Approval already issued for the site in 1995 for the extensive development. Modifications to the existing leachate collection systems, fill relocation and gas mitigation

## Welcome!

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analysis of creek sediments; modeling of contaminants in lake systems, and development of sustainable energy guidelines for a municipality. At Sadat, she is currently involved with various aspects of Riverfront Restoration at the Edgeboro Landfill and Soil and Groundwater Remedial Investigation at Monroe Center Village, besides conducting geotechnical tests in our lab.

### Malia Re.



Ms. Re joins SAI as our Accountant. She moved recently from Connecticut, where she spent over 20 years in the Wood Pulp & Paper Industry, working in both Accounting and as an MIS/LAN Administrator. She started at SAI in June 2007.

### Chlordane, *continued from page 2*

Chlordane is a dangerous chemical that does need to be addressed by our government. However, a less stringent and burdensome route should be explored. Guidelines, signage, increased homeowner education are a few options that the State could use to begin the process of bringing pesticide levels under control.

## Riverfront Restoration Under Construction

Area 3 of the Edgeboro Landfill in Middlesex County was filled in the 1950's. Environmental regulations at the time allowed for the deposition of material almost to the edge of the Raritan River, which borders the landfill to the south and east. Over the years erosion has occurred, due to the regular ebb and flow of the river, which has exposed this debris. SAI's design for stabilization of approximately 3,200 feet of riverbank in Area 3 of the Edgeboro Landfill's property and Lot 1 of Block 834 in East Brunswick, New Jersey, was approved by DEP in 2007. The design calls for regrading unstable banks, removing waste, placing riprap over geotextile, and restoring vegetation.

The project is complicated by numerous overlapping permitting requirements including those required by the Army Corps of Engineers, DEP Land Use Regulatory Program, DEP Upland Waterfront Development, Soil Erosion and Sediment Control, and Landfill Disruption permit applications. Because of the sensitivity of the lower Raritan River and significant tidal flux, certain portions of the work area needed to be protected with temporary shed piling. In addition, turbidity barriers had to be used during construction.

The project was designed under the direction of Dr. Lahbib Chibani, P.E., SAI's Director of Engineering. Brunswick Service Company is the general contractor performing the work. "This is a project we've had on the drawing board for many years but have not been able to get approved because of the sensitive conditions and overlapping regulatory jurisdictions. Thanks to SAI and the various concerned agencies, we're finally completing this important project, which will contribute to the goal

### Middlesex

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Manhattan Project had been addressed in an earlier Department of Energy cleanup, making this no ordinary municipal landfill. Due to the complexity of the case, Joe Wiley, SAI Project Director, sought assistance from the DEP's Director of Operations, whose mission includes the resolution of complex regulatory matters.



*Along the banks of the Raritan River in Area 3 as it was in 2004...*



*...and as it can be seen today, under construction to restore the riverbank. Photographs copyright Sadat Associates, Inc.*

of restoring this river bank," said Jack Whitman, President of Edgeboro Disposal, Inc.

SAI has investigated the existing soil cover and determined that much of it could qualify as a cap. By keeping the cover, SAI's design fits well with the Borough's goal of creating a park at the site.

From the Editor -

*If you would like to receive a full-color electronic version of our newsletter in Adobe PDF format via email, or if you want additional information about SAI and its services, please email me at: lthompson@sadat.com.*