Sometimes, without knowing it, excavation contractors move and reuse contaminated fill from one project to another, spreading it around. Yes, it’s a “Dirty World!”

In the Twin Cities, for example, a large number of urban fill soils have some level of contamination from historical activities conducted on the site or due to import from some other unknown source. Beware – this contaminated fill could be above Minnesota Pollution Control Agency (MPCA) concern levels. You can’t just take this “dirty dirt” anywhere. It should be managed or disposed of in accordance with applicable regulations.

The MPCA has recently published new policy and guidance documents regarding best management practices for off-site reuse of urban fill soils with contamination.

Basically, there are two types of guidance for reuse: In Part 1 of this series, published in the Summer 2012 edition of the American Edge, we discussed MPCA guidance for “unregulated fill.” Unregulated fill contains contaminants at concentration levels that are not of concern to the MPCA. In Part 2, we discuss MPCA guidance for “regulated fill.” Regulated fill contains contaminants at concentration levels that are of concern to the MPCA.

What is Regulated Fill?
Regulated Fill is soil that contains contaminants within the following levels:

The We Energies Biomass Energy Project, currently underway in Rothschild, Wisconsin, will be one of the few power plants in the country to use biomass for fuel when completed in 2013.

The $255 million project is a partnership between Domtar, an international paper manufacturer, and We Energies, a Milwaukee-based electricity, natural gas, and steam service provider. The project involves the construction of a 50-megawatt biomass-fueled cogeneration power plant. The plant is located on the existing brownfield site on Domtar’s Rothschild paper mill property. Construction began in June 2011 and is expected to wrap up in fall of 2013. The project will create more than 400 construction jobs, with peak employment taking place in October and through the end of 2012.

The type of biomass burned by the plant is "regulated fill," according to MPCA guidance. This type of fill contains contaminants at concentration levels that are of concern to the MPCA. The MPCA has recently published new policy and guidance documents regarding best management practices for off-site reuse of urban fill soils with contamination.

Construction of the new biomass-fueled cogeneration facility is in progress. Photo courtesy of We Energies.

AET’s Kate Kleiter and David Gollnick on site at the Beacon Bluff Redevelopment site in St. Paul, MN. The site, like many others in the Twin Cities, has its fair share of “regulated fill.”
The new power plant will cogenerate (i.e., simultaneously produce) electricity and steam—making it highly efficient. The biomass plant will help We Energies comply with state regulations requiring at least 8% of the utility’s electricity sales to come from renewable energy. Domtar will use the steam to power its paper mill, allowing it to retire aging boilers and minimize its use of natural gas.

The Boldt Company is the project’s construction manager and general contractor. They’re doing a lot of heavy lifting—literally. Back in July, they set an 85-ton auxiliary boiler in place. In September, they moved a 155-ton steam turbine (approximately 23-feet-long by 21-feet-wide by 19-feet-high) and an 85-ton generator (24-feet-long by 12-feet-wide) onto their respective foundations. The Poyry Group is the project’s architect.

Working directly for Boldt, AET is the project’s materials engineer and quality control laboratory. Recently, AET began providing nondestructive testing (NDT) services. This involves performing radiography on the power piping system to verify the quality of the welds used to join the long sections of pipe.

Once the power plant is fully operational in fall of 2013, it will do a lot to validate renewable energy resources and sustainable forestry practices—a win-win for all.

Questions? Contact Greg Owens at gowens@amengtest.com.
required to sign the application. Also, local unit(s) of government (could include county auditors, city clerks, town clerks, or other person designated to receive notifications) must have an opportunity to review it. The local unit of government must sign a Local Government Notification Form to confirm receipt of the information.

The origin, final disposition, and placement of the regulated fill must be described in an Implementation Report and must be submitted to the MPCA for review and approval.

GUIDELINES FOR IMPORTING REGULATED FILL
It’s important to note that regulated fill can ONLY be used at restricted commercial or industrial sites that have the same types of existing contamination. For example, you can’t take lead contaminated soils to a site that isn’t already contaminated with lead. Additionally, the regulated fill must be placed in areas that do not affect human health and the environment. This means it’s better to put contaminants like petroleum or VOC contaminated soils under paved parking lots instead of under buildings, which could allow vapors to escape.

In some cases, an institutional control may be required for the import site, which would become part of the property deed. The institutional control could range from simply noting where contaminated soils exist to restricting how the site can be used in the future.

Final placement of regulated fill at the importing site must be in accordance with the timeframe described in the regulated fill application. It’s worth noting that you can’t stockpile regulated fill for long periods of time on the import site—and you can’t stockpile the regulated fill somewhere else.

MPCA Approvals and Assurances
The MPCA will not take any action against persons who move regulated fill in accordance with their policies. If you follow their guidelines and gain their approvals before you move and place the soils, you will receive an assurance letter from the MPCA.

Kate Kleiter is a principal hydrogeologist and manager of AET’s St. Paul Environmental Department. If you have questions for Kate, she can be reached by email at kkleiter@amengtest.com.

CONSTRUCTION CONTRACT SPECIFICATIONS - PLAN AHEAD FOR REAL VALUE
BY CHARLES TILLER, PG – AET ST. PAUL

Given that earthwork is typically the first step in construction, it’s ironic that land preparation issues are often addressed late in the planning process.

When planning for construction, it pays to address land preparation issues (i.e., soils, contamination, and earthwork) early on. Often times, these issues aren’t considered until late in the planning and contracting process—which is ironic considering earthwork is typically the first step in construction. As a result, numerous projects are set back by inconvenient delays, debilitating cost overruns, diminished outcomes, and extra headaches such as:

• Not recognizing environmental liabilities until the excavation has started (a Phase I assessment can help avoid this issue)
• Discovering that prior site exploration and analysis was insufficient to uncover contamination, characterize subsurface conditions, or evaluate constructability
• Failing to consider the cost of necessary mitigation before designing the development
• Creating lender dissatisfaction with the added time and costs to remediate the site to regulators’ expectations for the planned end use
• Construction delays and change orders because the contract specifications did not address provisions for managing contaminated soil

Many of these crises (and extra costs) can be averted by planning ahead and addressing soil issues in the construction contract specifications. Unfortunately, there is no single recipe that suits every site; each property and development presents a unique set of options for specifications such as:

• Manage soil elsewhere vs. Dispose at a permitted landfill
• Hazardous waste vs. Contaminated material
• Regulated vs. Unregulated vs. Suitable fill soil
• Unit-rate for a set quantity vs. Allowance for a task in its entirety
• Tons (measurable) vs. Cubic-yards (estimated)

Input from environmental and geotechnical experts can help you distinguish the optimal mix of earthwork provisions, bid items, and language. Improving construction contract specifications is a great place to start when it comes to creating real value—and avoiding project headaches.

Charlie Tiller is a senior environmental supervisor in AET’s St. Paul Environmental Department. If you have questions for Charlie, he can be reached by email at ctiller@amengtest.com.
AET UPDATES

Mesfin Ageghen
Eric Benson
Zachary Burggraft
Mitchell Crowe
James Dayton
Blake Giles
Patrick Johnsen
Joel Johnson
Lisa Mcilquham
Jessica Stewart
Daniel Swanson
Juha Thao
Nicholas Weinsenfeld
Douglas Klun
Tou Lo
Grant Wolter

Promotions and Certifications
Dale Hunt – Sr. Petrographer/Geologist Supervisor
David Thompson – Engineer II
Matthew Harshbarger – Technician I
LeRoy Callais – Engineering Assistant
LeRoy also received his ICC certification for Structural Masonry Special Inspector.

NICET Construction Materials Testing certifications received by:
Chris Coushman - Level 2
Eric Krueger - Level 1
Nick Peterson - Level 1
James Rudd, PE, earned his Monitoring Well Contractor Certification

Associations
Gail Cederberg of AET’s St. Paul office has been named as co-chair of the Economic Development Committee of the Midway Chamber of Commerce. The Chamber represents over 320 businesses and organizations in the Midway area of St. Paul.

AET CEO Inducted Into University of Minnesota Duluth’s Academy of Science and Engineering
Inductees and UMD staff at the induction ceremony held on September 14 (from L to R): James Riehl, Dean of Swenson College of Science and Engineering; John Lindgren, Inductee; Marianne Bohren, Inductee; Dr. Brent Haglund, Inductee; Dr. Lendly Black, UMD Chancellor; Terry Swor, Inductee and AET CEO.

Welcome Back!
Dale Hunt – Sr. Petrographer/Geologist Supervisor
David Thompson – Engineer II
Matthew Harshbarger – Technician I
LeRoy Callais – Engineering Assistant
LeRoy also received his ICC certification for Structural Masonry Special Inspector.

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ACI Fall Convention Oct. 21-25 – Toronto, ON, Canada
AIA Minnesota Convention Nov. 6-9 – Minneapolis, MN
DSF Consultants Conference Nov. 8 – Madison, WI
ICRI Fall Convention Nov. 7-10 – Palm Springs, CA
ACPA Conference Nov. 27-30 – Marco Island, FL
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