



27TH ANNUAL

**SOLID WASTE
TECHNICAL CONFERENCE**

Conference Day: Wednesday, March 15, 2017 | Training Day: Thursday, March 16, 2017
Kellogg Hotel and Conference Center | 55 S. Harrison Road East Lansing, MI

THIS CONFERENCE HAS BEEN DESIGNED WITH
WASTE MANAGEMENT AND ENVIRONMENTAL PROFESSIONALS IN MIND.

Whether you're in private industry, a government employee, consultant, or equipment supplier, this conference will be beneficial to you. It will give you the opportunity to:

- Network with top local specialists and professionals in the solid waste field
- Hear from industry leaders about the latest technology and regulatory information
- Learn about emerging technologies and regulatory changes affecting the industry
- Gain information from presentations and case studies

For 27 years, The Engineering Society of Detroit (ESD), in partnership with the Michigan Waste & Recycling Association (MWRA), has hosted this annual conference to focus on cutting-edge technological innovations and solutions related to the solid waste industry.

This year's conference will feature experts in waste management practices to help attendees learn about issues related to policy, new technologies, regulatory updates and what the future holds for the solid waste industry.

A post-conference training session, designed to provide practical guidance on industry issues will take place on Thursday, March 16, 2017. Relevant topics such as functional stability, compliance and drone imaging acquisition and mapping will be discussed.

Accommodations:

Discount overnight accommodations are available at the Kellogg Hotel & Conference center at the rate of \$110 (plus applicable taxes) per night for Standard Double, Queen or King. To make a reservation please call (517) 432-4000 or 1-800-875-5090 and provide the code 1604ENGINE to receive the discounted rate. The group reservation rate is based upon availability.

Interested in Sponsoring or Exhibiting?

Sponsorship & exhibit opportunities are available. For information, visit www.esd.org or contact Leslie A. Smith, CMP @ lsmith@esd.org or 248-353-0735, ext. 152.

Conference and Training Day Cost (Lunch and breaks are included in the event pricing.)

Conference:

- \$180** Full Day ESD/MWRA Member
- \$100** Full Day Government/MDEQ
- \$205** Full Day Non-Member
- \$75** Full Day Student Rate
- \$239** Join ESD at 50% discount and attend the conference

Training Day:

- \$230** Member
- \$305** Non-Member
- \$100** Government/MDEQ



All conference day and/or training day attendees will be eligible for Continuing Education Credits based on eight hours of instruction time. SWANA credits will be available.

To Register:

Visit www.esd.org to register online or call 248-353-0735.

Cancellation Policy:

All cancellations must be received by Friday, March 10, 2017 in order to receive a refund.

CONFERENCE DAY

Wednesday, March 15, 2017

Building on the success of previous conferences, there will be an all-day exhibit area to provide manufacturers and suppliers with the unique opportunity to interact and explore some of the latest achievements in the solid waste and environmental industries.

7:30 - 8:30 a.m.

Registration, Continental Breakfast and Visit with Exhibitors

8:30 - 8:45 a.m.

Welcome

Speaker: Adam Larky, PE, Central Region Vice President, Cornerstone Environmental

8:45 - 9:45 a.m.

Functional Stability and Beneficial Re-Use of Closed Landfills

The effort required to properly manage a closed landfill and the duration (or term) of regulatory post-closure care (PCC) is an on-going technical and societal discussion that has a wide range of opinions with varying and consequential financial impact depending on the level of protection required to protect nearby communities and eco-systems. This session will include an introduction to the concepts of functional stability, where and how has it implemented and approved, and a vision of how such a methodology can be implemented to support beneficial re-use of closed landfills as greenspace. We will also review a 2016 technical guidance document from Florida DEP that provides the regulatory foundation of how to develop state guidance.

Speakers: Michael D. Caldwell, Director, Groundwater and Technical Programs, Waste Management and Steven Wilsey, Principal, Solid Waste Practice Group, GHD

9:45 - 10:15 a.m.

Networking Break and Visit with Exhibitors

10:15 - 11:00 a.m.

Management of Elevated Temperature Landfills

Elevated temperature landfills are increasingly common in modern Subtitle D Landfills. In some cases, elevated temperature landfills transition to self-sustaining subsurface exothermic reactions. Potential causes of elevated temperatures, along with mitigative strategies and techniques will be discussed from the perspective of the landfill owner.

Speaker: Michael R. Beaudoin, Director - Remedial Projects, Republic Services, Inc.

11:00 - 11:45 a.m.

What is the Goal? Is it Time to Think Differently About How We Set Goals and Measure Them?

For the past twenty-five years, Americans have embraced recycling as an important

measurement of environmental performance. The idea that more recycling must be better has spurred the widespread adoption of zero waste goals, developed with the best intentions. However, a focus on recycling as many tons as possible does not always take into account the whole picture of the environmental impact of waste. This session will explain how lifecycle thinking can help inform and prioritize waste goals and programs to achieve the greatest environmental benefits.

Speaker: Susan Robinson, Senior Federal Public Affairs Director, Waste Management

11:45 a.m. - 1:15 p.m.

Luncheon with Keynote Speaker MDEQ Vision and Priorities

This session will discuss the vision and priorities to accomplish at the Michigan Department of Environmental Quality in the final two years of the Governor Snyder administration.

Speaker: Jack Schinderle, Division Director, Waste Management and Radiological Protection, Michigan Department of Environmental Quality

1:30 - 2:00 p.m.

TRACK A:

Reimagine Trash

This session will address implementing sustainable materials management strategies to reduce dependency on landfill disposal through a strategic plan that considers environmental, economic and social impacts when managing discarded materials.

Speaker: Darwin (Dar) Baas, Director, Kent County Department of Public Works

TRACK B:

Temporary Cap Applications Across America

This presentation will cover the benefits of temporary covers, design factors to consider, geosynthetic and ballast options with photos, as well as examples and explanations.

Speaker: Robert Schiffhauer, Senior Project Manager Geosynthetics, American Environmental Group

2:00 - 2:30 p.m.

TRACK A:

Part 115 Solid Waste and Sustainability Advisory Panel (SWSAP)

This session will provide an update on the SWSAP Final Report and plans to amend Part 115 to incorporate SWSAP recommendations.

Speaker: Philip Roycraft, PE, Michigan DEQ, Waste Management & Radiological Protection Division

TRACK B:

Eagle Valley Landfill Waste Excavation and Sump Retrofit Case

This case history presents the excavation and removal of an existing 50-foot deep vertical leachate extraction manhole with a modern sideslope riser and leachate extraction system. This project was required to avoid extending the existing manhole to an eventual 200-foot deep manhole during the development and filling of a landfill expansion. The project required waste excavation to a depth of 50 ft. and totaling approximately 50,000 cubic yards of waste. The retrofitted leachate extraction system included a lined sump, a 1,000 ft. long 18" diameter HDPE riser pipe, and a pump installation/removal system. The project team conducted careful design and construction planning, including a comprehensive health and safety plan and contingency plans to mitigate potential risks associated with landfill gas, leachate outbreaks, and instability of the excavation. The project was completed in the winter months of 2016 and the new system is operating effectively.

Speakers: Kevin Foye, PhD, PE, Senior Engineer, CTI and Associates, Inc., Richard Paaajanen, Engineering Manager, Waste Management and Scott Rogers, Project Manager, Ryan Incorporated Central

2:30 - 3:00 p.m.

Networking Break and Visit with Exhibitors

3:00 - 3:30 p.m.

TRACK A:

Generating Revenue from Closed Landfills: Solar Energy in the 21st Century

Several states and USEPA are actively promoting solar energy development on America's estimated 10,000 closed landfills as part of the federal Re-Powering America Initiative, resulting in the installation of over 100 solar facilities on solid waste landfills. Closed landfills often offer development advantages compared to other commercial and industrial (C&I) solar projects, including: minimal shade, receptive neighbors, tax incentives, and access to existing grid infrastructure. Transforming these unproductive sites with environmental liabilities into renewable energy resources can be a "win-win" situation for the landfill owner, local governments, and solar developer. However, solar development on landfills is often limited due to site and regulatory challenges, which can render potential projects uneconomic or too challenging to develop. These challenges include: understanding the landfill's history and condition, accommodating landfill infrastructure and operational factors (barrier caps, gas vents and collection systems, leachate management systems, and storm-water drainage systems as examples), steep and highly variable topographies, and a complex regulatory approval process. This presentation will discuss the opportunities and challenges associated with developing solar energy facilities on closed solid waste landfills. Case studies will be used to highlight various aspects of solar development on solid waste landfills.

Speaker: Drew Lent, Senior Project Manager, Tetra Tech, Inc.

TRACK B:

Hidden Pots of Gold: The Value of Airspace

Airspace is the most valuable resource for the solid waste sector. "Hidden Pots of Gold" will provide a review of current Michigan regulations for cover material and show how these requirements are set in place to protect the environment allowing facilities to utilize accepted methods to maximize revenue potential per cubic yard of airspace. We will discuss permitted Revenue Generating Materials and other commercial products in use at facilities throughout Michigan and compel the audience to consider the best option for their site to minimize soil use. The session will also cover success stories of U.S. landfills that have saved by switching to Alternative Daily Cover; as well as discuss innovative technologies employed in other states for use in interim, intermediate, and temporary capping systems. *Imagine the Savings - It's a True Pot of Gold!*

Speaker: Troy Duxbury, Application Engineer, LSC Environmental Products, LLC

3:30 - 4:00 p.m.

TRACK A:

Leachate Treatment

Whether leachate is being treated onsite or at the Publicly Owned Treatment Works (POTW), leachate management is a very significant cost for most landfills and in some cases accounts for up to 40% of operational expenses. These costs continue long after the closure period making it a significant liability to the landfill. Reducing these costs can represent a significant opportunity. While direct discharge to the

POTW (and leachate minimization) is typically the most cost effective solution, many POTWs are increasing surcharges or altogether re-evaluating their acceptance of leachate as they must comply with increasingly stringent discharge limits. This situation is pushing some landfills towards providing their own onsite treatment or pretreatment. When considering treatment technologies, leachate quality/quantity (as waste ages) should be evaluated along with potential future limits, operational costs, and other considerations. These considerations and treatment technologies will be presented.

Speaker: Ryan Schipper, Senior Project Engineer, Golder Associates

TRACK B:

Deep Excavation in MSW Landfill for Removal of Prohibited Waste

This session will describe the methods used to locate, excavate, and remove prohibited waste from a municipal solid waste landfill six months after the load was disposed in the landfill. Various environmental and engineering plans were developed and evaluated to consider possible alternatives.

Speaker: Tamara Perkins, Senior Project Manager, Weaver Consultants Group

4:00 p.m.

Conference Adjourns

4:00 - 5:30 p.m.

Exhibitor Reception and Networking

POST-CONFERENCE TRAINING DAY:

Thursday, March, 16, 2017

8:00 - 8:30 a.m.

Registration and Continental Breakfast

8:30 - 8:45 a.m.

Welcome

Speaker: Douglas M. Gatrell, PE, GHD

8:45 - 10:45 a.m.

Functional Stability and Beneficial Reuse of Landfill Properties

This presentation will discuss the timeframe and issues surrounding post-closure care (PCC) at municipal solid waste (MSW) landfills, and outline a performance-based methodology that has been successfully applied at a number of sites in North America and Europe. The methodology, termed Evaluation of Post-Closure Care (EPCC), provides a modular approach for sequentially evaluating each of the four common landfill PCC elements (leachate management, landfill gas management, groundwater monitoring, and cover maintenance) in terms of "functional stability," a term used to describe a closed municipal landfill that does not present an unacceptable environmental threat in the absence of aftercare. Once a landfill is functionally stable, the methodology supports transition from regulatory PCC to a post-regulatory "custodial care" program that defines the care requirements the property owner must continue to provide after PCC under a regulatory program that has ended. Custodial care includes some de minimis care provided to protect against disturbance of buffer zones or passive barriers (mainly the cover) and satisfy end-use obligations, institutional controls, covenants, or deed restrictions on reuse of the property. This presentation will use case studies to

show how EPCC can be applied to progressively demonstrate that certain PCC elements can be safely reduced or ended.

Speaker: Jeremy Morris, Senior Engineer, Geosyntec Consultants

10:45 - 11:15 a.m. **Networking Break**

11:15 a.m. - 12:00 p.m.

Opportunities and Pitfalls of Functional Stability and Beneficial Reuse of Landfill Properties in Michigan

An open forum will be held to discuss the opportunities and hurdles for implementing the principles of functional stability and landfill reuse in Michigan. This panel will bring together landfill owners, regulators and consultants to discuss their views of implementing functional stability. The session will include considerable audience participation to ask questions, present their viewpoints and start a dialog for considering if and how Michigan should consider implementing functional stability. Session participants will learn from them the panelists and their fellow attendees.

Panelists:

Michael D. Caldwell, Director, Groundwater and Technical Programs, Waste Management, Jeremy Morris, Senior Engineer, Geosyntec Consultants, Tom Kinney, CPG, Senior Hydrogeologist, GHD and Philip Roycroft, PE, Michigan DEQ, Waste Management & Radiological Protection Division

12:00 - 1:00 p.m.

Luncheon

1:00 - 2:00 p.m.

SWPPP and SPCC Compliance for Solid Waste Facilities

This session will discuss the regulatory requirements for SPCC and SWPPP at solid waste facilities and transfer stations. Items the facilities need to make sure they are doing to be in compliance with the regulations will also be discussed.

Speakers: Karen Okonta, Project Professional, NTH Consultants, Ltd., Mary L. Siegan, PE, Project Engineer, NTH Consultants, Ltd. and Ryan Grant, Industrial Storm Water Program Specialist, Michigan Department of Environmental Quality, Water Resources Division

2:00 - 3:00 p.m.

Coal Ash Ponds: Water Balance and Field Challenges

While the use of coal as a fuel for power generation has decreased during the last 15 years, there are several hundred unlined coal ash ponds in the U.S. The new federal regulations for disposal of coal ash combustion residuals have spurred an immediate need to classify the environmental risk from the existing unlined coal ash ponds or landfills. Percolation of leachate from these ponds is a vital input to the groundwater flow models used for assessing the risk. This project entails simulating water balance of coal ash ponds and evaluating uncapped scenario to simulate long-term percolation into groundwater. The numerical model UNSAT-H was used for simulating water balance. In addition, any field operations at coal ash ponds have challenges due to the wetting induced softening of ash. This presentation will discuss the use of superabsorbent polymers for mitigation of excess pore water.

Speaker: Prof. Milind V. Khire, Professor and Technical Director of Coal Ash & Liquid Management (CALM) Office, University of North Carolina, Charlotte

3:00 - 3:15 p.m. **Networking Break**

3:15 - 3:45 p.m.

Results of a Field-Scale Low-Hydraulic Conductivity Liner Constructed of Foundry By-Product

Waupaca Foundry, Inc. (WFI) operates ductile iron foundries that utilize the green sand casting process. Because the foundry green sand by-product contains approximately 11% clay content due to the presence of sodium bentonite, compacted foundry sand can achieve a low hydraulic conductivity. Previously, WFI has constructed final cover systems utilizing foundry by-product as a low-hydraulic conductivity barrier in conjunction with a geomembrane. To increase the beneficial reuse applications, WFI pursued evaluating the foundry byproduct in liner systems. In 2011, WFI completed construction of test pads with underlying lysimeters to evaluate the long-term performance of a compacted foundry by-product liner. The laboratory characterization of the foundry by-product and performance of the test pads will be presented. The favorable results obtained during a 3-year period were utilized to satisfy regulatory requirements allowing the use of an alternative liner system with a 4-foot-thick compacted select foundry by-product layer with a geomembrane for the remaining 13-acre liner system. This application eliminates the need and associated cost to import clay for liner construction, increases air space capacity, and extends the life of the landfill.

Speaker: Paul Turpin, Senior Project Manager, TRC Environmental Corporation

3:45 - 4:30 p.m.

Drone Image Acquisition and Mapping – A New Tool with Many Benefits for the Solid Waste Industry

This session is a forum for showcasing how piloted aircraft and drones are used to collect, process and extract real value out of aerial image data for the solid waste industry. The session will include several recent case studies and the enhanced business processes and the benefits of using drones and/or piloted aircraft to collect and process aerial image data to yield discernible value, namely (1) Quicker, (2) Safer, (3) More Accurate and (4) Lower Cost versus conventional techniques.

Speaker: Lorne Zalesin, VP Sales and Marketing, Droneview Technologies

4:30 p.m.

Adjournment

Thank you to the Solid Waste Conference Planning Committee:

Adam Larky, PE (Chair),

Cornerstone Environmental Group, LLC

Rick Burns, NTH Consultants

Doug Gatrell, PE, GHD

Debora Johnston, Waste Management

Milind Khire, The University of North Carolina, Charlotte

Art Mohr, Environmental Specialties International

Justin Obermeyer, Weaver Consultants

Christina Pearse, Republic Services, Inc.

Dawn Prell, Golder Associates Inc.

Margie Ring, Waste Management and Radiological Protection Division

Ibraheem Shunnar, Mannik & Smith

Dimitris Zekkos, University of Michigan

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