2019 Annual Waste Conference

Tuesday, May 14, 2019
8:00 a.m. – 5:00 p.m.

Union League Club
65 W Jackson Blvd., Chicago, IL 60604
PROGRAM AGENDA
TUESDAY, May 14, 2019

7:30 a.m. – 8:15 a.m.  
Registration, Continental Breakfast, Exhibits & Networking

8:15 a.m. – 8:30 a.m.  
Welcome  
Andy Perdue, Weaver Consultants Group  
Kathy Doyle, Relief EHS, LLC  
Chair, A&WMA Lake Michigan States Section  
Conference Co-Chair

SESSION I

8:30 a.m. – 9:45 a.m.  
SUSTAINABILITY and MATERIALS MANAGEMENT – IMPACT ON INDUSTRY

Moderator:  
Pete Tomasi, Of Counsel, Foley & Lardner, LLP

Industry has been diligently working on reducing waste materials and toward sustainability regarding waste and materials management. So how far have we come in attempting to go from trash to treasure? In this session, the speakers will share their diverse sustainability stories related to the challenges, successes, and lessons learned regarding sustainability in 2019.

Speakers:

Zero Waste to Landfill Global Standards  
Jonathan Blaine, Head – Sustainability & Environmental Affairs  
Henkel Corporation

E-Waste and Refurbishment of Used Electronics  
Cathy Hill, CEO  
HOBI International

Resource Recovery in the Wastewater Sector: Crystal Green, Algae, and EQ Compost  
Dominic Brose, PhD, Senior Environmental Research Scientist  
Process Facilities Capital Planning  
Environmental Monitoring and Research Division  
Metropolitan Water Reclamation District of Greater Chicago

9:45 a.m. – 10:15 a.m.  
Morning Break and Exhibit Viewing

Make sure to take the opportunity to stop and visit the numerous exhibitors to learn how they can help you.

We are confident you will find leading edge information on a variety of products and services.
10:15 a.m. – 11:30 a.m.  **HAZARDOUS WASTE POWER HOUR**

Moderator:  **Kathy Doyle**, Managing Director, *Relief EHS*

In this session, we will look at several new USEPA rules that affect broad sectors of industry. First is the Management Standards for Hazardous Waste Pharmaceuticals Rule, which impacts all levels of medical services providers, pharmaceutical manufacturers, and reverse distributors, as well as redefining waste nicotine. Second is the Increasing Recycling: Adding Aerosol Cans to Universal Waste Regulations Rule expected to be final in late 2019. This "less stringent" Federal Rule is designed to increase recycling but may add requirements for those who puncture aerosols to drain them prior to recycling. Also, coming up on one year since implementation, we will have another opportunity to learn about the e-Manifest Rule and related updates, as EPA continues to advance the capabilities of the new e-Manifest system. After this session, the speakers will engage attendees in a less formal Q&A period during the before-lunch networking break.

Speakers:  
**New Hazardous Waste Pharmaceuticals Rule**  
*Cara Simaga*, Director Regulatory Affairs  
Stericycle

**Pending: Aerosol Cans as Universal Waste?**  
*David Rieser*, Of Counsel  
K&L Gates, LLC

**Update: One Million e-Manifests and Ongoing Implementation**  
*Tom Crosetto*, RCRA Information Coordinator  
U.S. EPA Region 5

**Michael Cunningham**  
Chief, RCRA Hazardous Waste Compliance Section 1  
U.S. EPA Region 5

11:30 a.m. – 12:00 p.m.  **Networking Q&A and Exhibit Viewing**

Attendees will have the opportunity to ask questions of the Session II speakers

11:30 a.m. – 12:00 p.m.  **Young Professionals Meet & Greet Session**

This will be an invite only opportunity for Young Professionals (35 years old or younger or less than 5 years environmental experience) to Meet & Greet Regional Administrator Stepp.
PROGRAM AGENDA
TUESDAY, May 14, 2019

12:00 P.M. – 1:15 P.M.  LUNCHEON

Moderator:  Andy Perdue, Project Director, Weaver Consultants Group
Chair, A&WMA Lake Michigan States Section

Speaker:  Cathy Stepp, Regional Administrator
U.S. EPA Region 5

Cathy Stepp serves as the Regional Administrator for EPA Region 5. Her responsibilities include overseeing environmental protection efforts in the Great Lakes states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin, as well as 35 federally recognized tribal governments. One of her roles is manager of EPA Great Lakes National Program, in which she leads restoration and protection of the largest freshwater system in the world. Before joining EPA, she was secretary of the Wisconsin Department of Natural Resources from 2011 to 2017.

SESSION III

1:15 p.m. – 2:30 p.m.  STATE REGULATORS/ REGULATORY UPDATE

Moderator:  Lawrence Falbe, Principal
Miller, Canfield, Paddock and Stone, P.L.C.

Regulators from Region 5 states will provide updates on current issues, pending initiatives or regulations and priorities. This session will feature an extended Q&A session.

Speakers:  Charles Breitenfeldt, Compliance Assistance & Voluntary Programs
Partners for Clean Air Coordinator
Indiana Department of Environmental Management

Jack Schinderle, Director
Waste Management and Radiation Protection Division
Michigan Department of Environmental Quality

Darsi Foss, Director, Remediation and Redevelopment Program
Wisconsin Department of Natural Resources

Kyle Rominger, Deputy Chief, Bureau of Land
Illinois Environmental Protection Agency

2:30 p.m. – 2:45 p.m.  Afternoon Break and Exhibit Viewing
PROGRAM AGENDA
TUESDAY, May 14, 2019

SESSION IV
2:45 p.m. – 3:45 p.m.  EMERGING CONTAMINANTS and REMEDIATION ISSUES

Moderator:  Ann Zwick, Senior Counsel
            Freeborn & Peters LLP

This presentation will include an overview of the sources, chemistry, environmental fate and transport, exposure, toxicology, and occurrence of PFAS with an emphasis on the state of knowledge regarding the characterization and remediation of PFAS-impacted sites, as well as risk management approaches. The discussion will include recent updates on state and federal regulatory issues and an outline of the spectrum of legal challenges associated with the historical use of PFAS at industrial and military facilities. We also review the ever evolving world of coal ash issues.

Speakers:  Technical, Regulatory, and Legal Issues Associated with the Use of Per- and Polyfluoroalkyl Substances (PFAS)
            Dr. Rula Deeb, Ph.D., BCEEM, PMP
            Sr. Principal Civil and Environmental Engineer
            Geosyntec Consultants

            Designing a State Coal Ash Program: Goals, Issues and Solutions
            Jane Montgomery, Partner
            Schiff Hardin LLP

SESSION V
3:45 p.m. – 4:45 p.m.  HIGHLIGHT on EPA ENFORCEMENT

Moderator:  Francis X. Lyons, Partner
            Schiff Hardin LLP

This panel will highlight the development of civil and criminal enforcement actions, including discussion of various investigative techniques, and the relationship between criminal and civil environmental enforcement.

Speakers:  Leverett Nelson, Regional Counsel
            U.S. EPA Region 5

            Jennifer Lynn, Special Agent in Charge
            U.S. EPA Criminal Investigation Division

            David Mucha, Regional Criminal Enforcement Counsel
            Office of Regional Counsel
            U.S. EPA Region 5
YP BREAKOUT SESSION

2:45 p.m. – 4:45 p.m.  PROJECT MANAGEMENT FOR AN ENVIRONMENTAL AUDIT

Moderators:  Andrew Dorn, Environmental Project Manager
ITW

  Michael J. Hoffman, P.E., Associate Vice President/Sr. Principal Engineer
Wood

Participants will complete four hands-on tasks involved with managing an environmental audit project. After completing the session, participants will have experience developing a scope of work, providing a client with a schedule and budget, communicating with plant personnel and delivering audit results to the client.  This session is limited to the first 12 registrants.

CLOSING REMARKS

4:45 p.m. – 5:00 p.m.  Conference Wrap-Up

Lawrence Falbe, Miller, Canfield, Paddock and Stone, P.L.C.
Conference Co-Chair

NETWORKING RECEPTION

5:00 pm – 6:30 pm  Networking Reception and Exhibit Viewing
Thank you to the 2019 Annual Waste Conference Exhibitors. Tonight’s networking reception is sponsored by the exhibitors. Take a moment during the breaks and reception to visit the exhibitors and learn how they can assist you.

BBJ Group is a full-service environmental consulting and engineering firm focused on developing risk management, compliance, and remediation strategies tailored to each client’s business objectives.

We understand environmental health and safety matters make up only a portion of any business decision. Consequently, we strive to understand our clients goals and provide strategies consistent with those larger goals.

Advantages to teaming with BBJ Group include:

Technical Depth and Responsiveness - BBJ Group provides the expertise of a large environmental consulting firm, while maintaining the responsiveness and flexibility of a smaller firm.

Clarity - BBJ Group helps you cut through the clutter. We translate the jargon of environmental science and regulation into business-focused recommendations you can use to make critical decisions.

Strategy – Our solutions always come with an end-game strategy. We don’t just study the problem, we cost-effectively develop an answer and an exit for our client.

For more than 35 years, Clean Harbors has been providing comprehensive hazardous and non-hazardous waste management services to meet the needs of customers throughout North America. When evaluating chemical waste disposal services companies, customers know they can rely on Clean Harbors.

Clean Harbors Technical Services involve the packaging, collection, transportation, treatment and disposal of hazardous and non-hazardous waste at Company-owned facilities. We operate the largest number of hazardous waste incinerators, landfills, wastewater and other treatment facilities, and treatment, storage and disposal facilities in North America. We attract and better serve our customers due to our expertise and capabilities and the size, scale and geographic location of our assets, which enable us to operate in multiple locations.

SET Environmental brings over 30 years of environmental industry experience to a nationwide client base. SET recognizes that finding the right solution to any hazardous problem requires an appreciation of each client’s particular circumstances. Our understanding of what our clients face enables us to provide the appropriate resources to address any issue especially in the fields of Emergency Response, Customized Waste Management, and Technical Field Services. Our project managers work on a first-name basis with state and federal regulators. Since SET owns and operates our own Part B-permitted TSDF (Treatment, Storage and Disposal Facility), we are able to ensure no waste remains on site after an emergency response or project has been successfully completed. At SET, we understand that to be successful it takes hard work, persistence and an understanding of our clients’ needs. This understanding, combined with our tradition of integrity and technical expertise, makes SET your valued partner in environmental management.

Civil & Environmental Consultants, Inc. (CEC) provides comprehensive air, water and waste management services to advance our clients’ business objectives. We collaborate with you to establish your project goals, and strive to make working with us as easy as possible. Consistently ranked as one of Engineering News Record’s Top 200 Environmental Firms, CEC brings together a coordinated team of experienced engineers, scientists, geologists, hydrogeologists, and technicians with the expertise to develop realistic solutions for your most challenging environmental issues. CEC helps you achieve compliance under a broad array of environmental statutes including the CAA, CWA, RCRA, CERCLA and TSCA. We provide the expertise and support to help you stay on target.
EnviroServe provides comprehensive environmental and rail services to safely remediate and prevent environmental releases, manage waste, and respond to emergency and catastrophic events. You can depend on our team, our solutions, and our consistency in delivering results.

Services Include:
- AAR Repairs
- Emergency & Disaster Response
- Waste Transportation & Disposal
- Railroad Services
- Remediation & Specialized Industrial Services
- High Voltage Electrical & PCB Removal
- Decontamination and Facility Cleanup

STAT Analysis Corporation (STAT) is a Full-Service environmental and industrial hygiene laboratory located just west of Chicago’s downtown Loop. STAT has consistently demonstrated unparalleled professional services to its wide range of clients for many years. Under new ownership since 1997, we have expanded analytical capabilities and analytical consulting services fivefold. STAT is well known for rapid analytical turnaround times and the ability to analyze large volumes of samples with stringent Quality Assurance/Quality Control (QA/QC) procedures.

STAT’s 12,000sf laboratory is equipped with the latest high-performance instrumentation in a sophisticated, state-of-the-art facility. Our professional staff includes highly qualified and experienced environmental scientists, analytical chemists, environmental engineers, and certified lead and asbestos analysts. We provide comprehensive analytical services for a wide range of matrices including water, hazardous wastes, air, soil, wipes, and consumer products.

At STAT, we assign Project Managers to personally oversee your projects. Our PMs are your partners. They are knowledgeable professionals who understand your project requirements and needs. The project managers ensure on-time analysis while fulfilling all QA/QC requirements.

STAT is accredited by the National Environmental Laboratory Accreditation Program (NELAP), the National Volunteer Laboratory Accreditation Program and the American Industrial Hygiene Association (AIHA). STAT is a certified Minority-Owned Business Enterprise (MBE) and a Disadvantaged Business Enterprise (DBE).

Teklab, Inc. is a veteran-owned NELAP accredited analytical laboratory. In 1982, we started out specializing in testing wastewater and ground water for large and small municipalities. Through the years we have evolved into a full-service laboratory which specializes in testing: soil, air, wastewater, storm water, ground water, drinking water, sludge and oil. Teklab offers a wide array of testing including: metals, wet chemistry, semi-volatile organics, and volatile organics. Beside municipalities, we also have experience working with consultants and industry. Our experience includes Federal (DOD) and State (IDOT) projects. Some of the industries we work with include: refineries, utility, steel manufacturers, dairies, meat processors, chemicals companies, aerospace companies, plating, landfills, and asphalt. Our service area includes Illinois, Missouri, Indiana and Kansas.

At Teklab, we take pride in our ability to meet our client’s needs with quality analytical data and personal service. Each client is assigned a project manager who will track your samples throughout the analytical process and report results on a timely fashion upon completion.

Trinity Consultants supports organizations on applicable multi-media environmental regulations, with a specialty in air quality permitting and compliance management. We also advise on environmental management and sustainability including climate change, product lifecycle analysis, and ISO 14000/EMS. Trinity provides BREEZE® modeling software and geophysical data that enables environmental professionals to predict the impact of air emissions, fires and explosions. Trinity also provides extensive EH&S professional training and EH&S direct and contract staffing assistance. Our T3 division assists selection and implementation of EH&S information management solutions. SafeBridge Consultants, a Trinity Consultants company, provides Industrial Hygiene services to a wide-range of industries.

Sponsor

Thank you to AHMP for sharing the conference brochure with their members.
SESSION I

Sustainability and Materials Management – Impact on Industry

Zero Waste to Landfill Global Standards
Jonathan Blaine
Head – Sustainability & Environmental Affairs
Henkel Corporation

Jonathan Blaine joined Henkel Corporation in May 2010 as Manager of Safety Health and Environmental (SHE) Assurance serving all Henkel business units in the North American (NA) region. In April 2017, he took on the role as Head of Sustainability & Environmental Affairs for the Henkel US Operations Corporation Adhesives business serving NA as well as Latin America North (LAN). Henkel Corporation is global manufacturer of adhesives, sealants, specialty materials for the electronics and transportation sectors, detergents and cosmetics.

Jonathan has 29 years of experience as a SHE professional, including 10 years with fortune 500 corporations, 17 years as an environmental lawyer in private practice serving clients on local, national and international matters and 2 years in environmental consulting. He provides Henkel with significant leadership in support of its commitment to sustainability and pursuit of environmental excellence.

Jonathan’s primary duties include: advancing Henkel’s Sustainability objectives and numerous programs in NA and LAN; and directing environmental matters for more than 40 Henkel sites in NA and LAN by providing oversight and advice in matters pertaining to permitting, operational compliance, reporting and enforcement.

Beyond these primary roles, he also oversees all Henkel active and legacy remediation matters within NA and LAN, serves as Regional SHE responsible for M&A, capital projects and real property management and disposition and provides environmental expertise in legal matters and supply chain programs. Jonathan earned a BS in Geology from Duke University and a JD from the University of Connecticut.

E-Waste and Refurbishment of Used Electronics
Cathy Hill
CEO
HOBI International

Cathy Hill is co-founder and Chief Executive Officer of HOBI International, Inc., and IT and mobile asset disposition company. As the founding member of HOBI’s board, Cathy has overseen the growth both operationally and strategically. She continues to be responsible for the day-to-day operation of HOBI’s Batavia facility. Cathy personally oversees contract negotiations as well as relationships with most of HOBI’s large clientele. Before collaborating with Craig Boswell on the business plan for HOBI, Cathy’s experience included both sales and management in Illinois and Arkansas. Cathy was educated in Naperville, IL, receiving her B.A. summa cum laude in international business from North Central College. She also completed her degree at the Alliance Francaise in Paris, France, receiving Mention Honorable.

Resource Recovery in the Wastewater Sector: Crystal Green, Algae, and EQ Compost
Dominic Brose, Ph.D.
Senior Environmental Research Scientist
Metropolitan Water Reclamation District of Greater Chicago

Dominic Brose is a senior environmental research scientist in the Process Facilities and Capital Planning Section at the Metropolitan Water Reclamation District of Greater Chicago. He leads the MWRD Chicago’s planning efforts for the beneficial reuse of biosolids from across the District’s seven treatment plants. Prior to the MWRD Chicago, Dr. Brose was a program officer for the Science and Technology for Sustainability Program at the National Academies of Science, Engineering, and Medicine in Washington, DC directing studies and workshops on urban sustainability and the recovery and reuse of waste products. He received his BS in Natural Resources and Environmental Science from Purdue University and his PhD in Environmental Science and Technology from the University of Maryland.
Who is Henkel Corporation?

About Henkel

Henkel operates worldwide with leading innovations, brands and technologies in three business units: Adhesive technologies, Beauty Care and Laundry & Home Care. Founded in 1876, Henkel holds globally leading market positions, both in the consumer and in the industrial businesses, with well-known brands such as Persil, Schwarzkopf and Loctite. Henkel employs more than 50,000 people.
Translating value and footprint into concrete challenges

Our six focal areas reflect the challenges of sustainable development as they relate to our operations.
Our target overview
We want to continuously improve our performance*

Deliver more value..

Social progress
We want to actively contribute to social progress.

Performance
We want to deliver more value and increase our sales.

Health and safety
We want safe workplaces and improved health and hygiene.

*compared to the base year 2010
Our target overview
We want to continuously reduce our impacts*

.. at a reduced footprint

Energy and climate
We want to reduce our energy consumption and our climate-damaging emissions.
-30% (per ton of product)

Materials and waste
We want to use less raw materials and generate less waste.
-30% (per ton of product)

Water and wastewater
We want to reduce water consumption and wastewater.
-30% (per ton of product)

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*compared to the base year 2010
Sustainability Progress - Adhesives

- Comparison with 2018 closure affected by typical seasonality
- Comparison vs Apr 2018 confirming positive start for the year in line with internal commitment (5% footprint improvement YoY)
- Overall efficiency to +54% and 10% above 2018 closure

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<td>Footprint</td>
<td>-10</td>
<td>-17</td>
<td>-22</td>
<td>-16</td>
<td>-22</td>
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<td>Efficiency</td>
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<td>Energy CO₂</td>
<td>-10</td>
<td>-13</td>
<td>-18</td>
<td>-4</td>
<td>-16</td>
<td>-10</td>
<td>-16</td>
<td>-23</td>
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<tr>
<td>Waste</td>
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<tr>
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<td>-36</td>
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Sustainability Progress - Adhesives
2019 YTD Figures & Monthly Data Trends

### Energy KgCO2/ton

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<tr>
<th>Year Period</th>
<th>Water m³/tonne</th>
<th>Waste W/o const kg/tonne</th>
<th>Energy kgCO2/ton</th>
<th>Footprint Delta % (based on CO2)</th>
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<tr>
<td>2019 vs 2018 [Jan-Apr]</td>
<td>-10%</td>
<td>-18%</td>
<td>-12%</td>
<td>-13%</td>
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<tr>
<td>2019 vs 2010 [Jan-Apr]</td>
<td>-39%</td>
<td>-31%</td>
<td>-26%</td>
<td>-32%</td>
</tr>
<tr>
<td>2019 vs 2018 Plan</td>
<td>-3%</td>
<td>-6%</td>
<td>-7%</td>
<td>-5%</td>
</tr>
<tr>
<td>2019 vs 2010 Plan</td>
<td>-33%</td>
<td>-26%</td>
<td>-23%</td>
<td>-28%</td>
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We want the production sites for our consumer business to send zero waste to landfill by 2020. We will expand this target to cover all production sites, including our industrial business, by 2030.”

Henkel Global Adhesive business began to press for ZWTL for the 3 year period 2018-2020 with a stated goal to achieve ZWTL for at least 66% of global adhesive production sites 2020.

Within the Henkel vocabulary, ZWTL means zero manufacturing (i.e., production) waste is disposed directly to a landfill. There are a few discrete exceptions (e.g., mandated landfill disposal), but generally a production site is required to certify that all of its production waste is either recycled, burned for energy recovery or incinerated.
Thank you!
Responsible Management of E-waste

Cathy Hill
HOBI International, Inc.
What to consider when disposing of e-waste

• Multi-pronged approach required
• Reverse Logistics
• Data Security and Erasure
• Environmental Regulations
• Remarketing & Resale
E-waste requires multiple solutions

• As e-waste grows around the world, recycling is not the only solution. Adoption of better practices include:
  • Designing better, more sustainable products
  • Efficient reuse aimed to help bridge the digital divide
  • Maximizing responsible repair of electronics
  • Making circular economy the end goal
  • OEMs looking beyond product manufacturing and establishing partnerships with certified ITAD providers
Reverse Logistics

- Customized RL solutions are typically needed
- Total reconciliation of products and asset management
- Mitigation strategies that maximize client value
- Maximize return on IT and mobile assets through careful analysis of post-customer and industrial scrap
Data Security

• Verifiable and traceable data erasure process solutions
• NIST compliant data erasure tools to validate destruction
• Higher level DOD-compliant wipe on data storage
• The option for both on-site and remote data destruction and data erasure
Environmental Regulations

• R2, RIOS, ISO 14001 certified processors
• Zero focus materials to landfill
  • Ensures best-in-class environmental solutions
  • Compliant to federal, state, local environmental laws
• Processing systems ensure all hazardous materials are recovered and processed in an environmentally sound manner
• Outsourced compliance assurance programs help ensure mitigation of compliance risks at all levels
Current U.S. Regulations

• A lack of an official federal e-waste regulation system has led some states to implement state regulatory systems

• States are doing what they can to deal with e-waste but Federal legislation could jump-start dramatic progress

• In need of policy recommendations that encourage states to:
  • Develop a framework policy that involves a network of surrounding states
  • Increase monitoring and data collection efforts
  • Encourage support of the electronic industry by means that reflect the needs of the industry and the state
State-Led Approaches to E-Waste

• There are 27 states with e-waste laws (including the District of Columbia)
  • In 2008, Michigan passed the manufacturer electronic device takeback program for households and small businesses
  • In 2012, Illinois adopts Electronic Products Recycling and Reuse Act that requires specialized recycling for electronics
  • In 2017, Illinois passed the Consumer Electronics Recycling Act (CERA) which modernizes elements of the state’s recycling program
• Most use an Extended Producer Responsibility (EPR) model
• The issue with patchwork laws is that no one state has enough market share to convince manufacturers to go green.
Reuse and Resale

• Aim for reuse of electronic devices as much as possible
• Parts recovery and harvesting efforts for the reuse, repair, and refurbishment of devices
• Provide updated purchase matrix for all IT and related equipment for remarketing and resale
Contact Information

Cathy Hill, CEO
HOBI International, Inc.
chill@hobi.com
(630) 761-0500
www.hobi.com
Resource Recovery in the Wastewater Sector: Crystal Green, Algae, and EQ Compost

DOMINIC A. BROSE, PHD
METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
The MWRD’s Water Reclamation Plants
Utility of the Future Model
Ostara: Crystal Green
Construction at Stickney WRP
Crystal Green Production

- ~1.9 million lbs in 2017
- ~3.7 million lbs in 2018
- ~0.5 million lbs in 2019
Nutrients Recovered with Algae
Algae Grown with Revolving Biofilm
Algae Converted to Plastics and Pellets

- Total P and Total N removal efficiency > 80%
- Ortho-P and NH3 removal efficiency ~ 95%
EQ Biosolids

- 53% of the 103,000 dry tons distributed from 2016-2018
Rebuilding Urban Soils
Compost Construction
Research and Monitoring
EQ Compost Distribution in Chicago

5/14/2019 2019 Air Quality Management Conference — A&WMA-LMSS
Thank You

Dominic Brose, PhD
Metropolitan Water Reclamation District of Greater Chicago
brosed@mwrd.org
www.mwrd.org
SESSION II

Hazardous Waste Power Hour

New Hazardous Waste Pharmaceuticals Rules
Cara Simaga
Director Regulatory Affairs
Stericycle

Cara Simaga is a Director of Regulatory Affairs at Stericycle, a regulated waste disposal company. She has worked at Stericycle for 9 years in various roles, many related to helping healthcare facilities implement successful pharmaceutical waste disposal programs. Prior to Stericycle, she worked at a hazardous waste treatment and disposal facility. Cara has a BS from Purdue University in Biology and has been a Certified Hazardous Materials Manager (CHMM) since 2006.

Pending: Aerosol Cans as Universal Waste?
David Rieser
Of Counsel
K&L Gates, LLC

David Rieser has more than three decades of experience advising clients in all areas of environmental law, including legislative, regulatory, compliance and law enforcement matters, corporate, commercial and real estate transactions, governmental and private cost-recovery actions, environmental insurance coverage, and remediation of contaminated sites. Mr. Rieser serves Fortune 100 and mid-sized companies operating in a broad range of industries, including power generation, chemicals, petroleum, steel, food and consumer products, financial services, and waste management.

In the legislative and regulatory arena, Mr. Rieser has represented trade associations, industry groups, and individual companies in numerous matters involving the U.S. Environmental Protection Agency (EPA) and the Illinois Environmental Protection Agency (IEPA). He also represented power generating companies in permitting and administrative proceedings, and prepared responses to agency requests for information regarding Clean Air Act (CAA) issues.

An experienced litigator, Mr. Rieser has argued cases in federal and state courts, including a recent victory in the U.S. Circuit Court of Appeals for the Seventh Circuit, in which he represented a coalition seeking to preserve commercial navigation in the Chicago waterways. Other matters have included cost recovery and enforcement actions.

Update: One Million e-Manifests and Ongoing Implementation
Tom Crosetto
RCRA Information Coordinator
U.S. EPA Region 5

Tom Crosetto has worked for 29 years at EPA's Region 5 office in Chicago, including work in the RCRA, TSCA, FIFRA, EPCRA, TRI and CERCLA programs. Mr. Crosetto has a BS in biology from the University of Wisconsin – Parkside with graduate coursework at UW – Madison. He currently coordinates the region's work with EPA's national RCRA tracking database called RCRAInfo, which includes e-Manifest data.

Michael Cunningham
Chief, RCRA Hazardous Waste Compliance Section 1
U.S. EPA, Region 5

Michael Cunningham received a Master of Public Health from the University of Illinois at Chicago. He joined EPA Region 5 in 1991. In September of 2013 he became Chief of Region 5’s RCRA Hazardous Waste Compliance Section 1, where he manages staff that conduct RCRA hazardous waste compliance and enforcement activities in Illinois, Indiana and Minnesota.
New Rules for Handling Hazardous Waste Pharmaceuticals

Cara Simaga, CHMM
Stericycle
Agenda

• Background
• Effective date
• Applicability
• Key points/concepts
Background Info

• EPA desired to provide health care specific regulations to make it easier and safer for such facilities to follow, first draft in 2008

• Rule proposed in 2015

• Comment period closed in December 2015

• Signed on December 11, 2018

• Published in the Federal Register February 22, 2019
Universal Waste?

- Today, Florida and Michigan allow generators to manage hazardous waste pharmaceuticals as universal waste.
- Florida and Michigan will no longer be able to provide generators with this exception.
- Subpart P is similar to universal waste regulations.
Three Parts to the Rule

• Subpart P
• Sewer Ban
• Nicotine Exception
Effective Dates

• **Subpart P** - August 21, 2019
  - **July 1, 2021** – this is the deadline for states to adopt the rule that do NOT have to go through a legislative process
  - **July 1, 2022** – this is the deadline for states to adopt the rule that do have to go through a legislative process

• **Sewer Ban** - August 21, 2019 – effective on this date in **ALL** states

• **Nicotine Exception** – no adoption timeline, no requirement for states to adopt
Applicability

- Health care facilities that are small quantity or large quantity generators of hazardous waste (SQG or LQG)
  - Mandatory to follow Subpart P
- Very small quantity generators (VSQGs) do NOT have to follow Subpart P
  - With the exception of the sewer ban
  - Can “opt-in” to some parts of the rule that will be helpful or choose to follow the whole subpart
Applicability - VSQGs

- Have the option of following the full Subpart P
- Must notify if choosing to follow all of Subpart P
- Parts of the new rule apply without following the full Subpart
  - Sewer ban
  - Residues of hazardous waste and empty containers
  - May send potentially creditable to reverse distributor
  - May send hazardous waste pharmaceuticals to another health care facility
Long-Term Care Facilities (LTCF)

• 20 beds or fewer presumed to be VSQG
• May dispose of hazardous waste pharmaceuticals in on-site collection receptacle of an authorized collector (as defined by DEA)
Rule does not apply to:

• Those that do not meet the EPA’s definition of “health care facility”
  • Pharmaceutical manufacturers

• Pharmaceutical wastes that are not a hazardous waste
Key Definitions

- Non-Creditable Hazardous Waste Pharmaceutical
- Potentially Creditable Hazardous Waste Pharmaceutical
- Evaluated Hazardous Waste Pharmaceutical
- Healthcare Facility
- Long-term care Facility
- Reverse Distributor
Counting and Generator Status

- Hazardous waste pharmaceuticals will not count towards generator status
  - Can generate unlimited amounts of hazardous waste pharmaceuticals, including P-listed waste
- The rule will likely help some facilities drop to a smaller generator status
- Only will need to count other hazardous wastes when determining generator status
Notification to EPA

• Must notify EPA that you are following Subpart P
  • Use 8700-12 form
  • Notify on Biennial Report
Empty Containers and Residues

• **Stock, dispensing, and unit dose containers** – includes vials, blister packs, dispensing bottles (not to exceed 1 liter or 10,000 pills). These items are empty when contents removed by normal means and can go in the trash, even if they held P-listed waste.

• **Syringes** – plunger must be fully depressed

• **Intravenous bags (IVs) and other delivery devices** – must meet current RCRA empty definition
Storage

• One year of storage time
• Container must be labeled “Hazardous Waste Pharmaceuticals”
• Container must be closed at all times
• Container must be in good condition
Controlled Substances

- Hazardous waste pharmaceuticals that are also controlled substances are exempt from hazardous waste regulation
- Must follow DEA disposal requirements
- Can be incinerated at facilities authorized in the rule
- Cannot be drain disposed (sewer ban)
Sewer Ban

• Hazardous waste pharmaceuticals cannot be discharged to the sewer
• This will be effective on effective August 21, 2019 in all states
• Applies to VSQGs too
• Some states already had this ban
Nicotine Exclusion

• Nicotine and empty containers from these items are P075 waste today
• EPA edited P-listing to exclude FDA-approved over-the-counter nicotine replacement therapies, gums patches, lozenges
• Does not include:
  • Prescription nicotine therapies (inhalers)
  • E-cigarettes/liquids
• Applies to all generators of hazardous waste
Plan for August 21, 2019

• Sewer ban applies to all healthcare facilities, in all states on this day
• Monitor State adoption activity
• KEEP FOLLOWING ALL CURRENT HAZARDOUS WASTE REGULATIONS
Contact Information

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Remains of the Spray: Aerosol Cans as RCRA Universal Waste

David L. Rieser
K&L Gates, LLP

May 14, 2019
BACKGROUND

- Regulated under RCRA if
  - Discarded
  - Contained a hazardous waste
- Proposed Rule
  - 83 Fed Reg. 11654, March 16, 2018
  - Comments closed May 15, 2018
  - Revisions to 40 CFR 273
- Universal waste
  - High volume, low risk
WHAT IS AN AEROSOL CAN?

- Definition
  - Intact container
  - Gas under pressure
  - To aerate and dispense
  - Any product
  - No size component, but EPA taking comments
APPLICATION

- Aerosol cans
  - Solid Waste
    - Determined to be discarded
  - Hazardous waste
    - Characteristic/listed
  - Not empty
  - Not leaking or damaged
MANAGEMENT STANDARDS

 Manage to prevent releases
 Small and Large Quantity Handler of Universal Waste
   5,000 kg total of universal waste at any time
 Containers
   Structurally sound
   Compatible
MANAGEMENT STANDARDS

- Labeling
  - “Universal Waste – Aerosol Cans”
  - “Waste Aerosol Cans”
  - “Used Aerosol Cans”

- Handling
  - Sort, mix, remove actuator
MANAGEMENT STANDARDS

- Puncture and drain
  - Use a commercially designed device
  - Contains residue and emissions
  - Written procedures
  - Manage contents
    - Recycle cans
    - Characterize residue and manage accordingly
MANAGEMENT STANDARDS

- Other standards as set out in 40 CFR 273
  - Notification
  - Accumulation time
  - Training
  - Release response
  - Record keeping
EFFECTIVE DATE

- Final federal rule
  - Out “soon”
- Applicable to IEPA Program
  - When adopted by PCB
QUESTIONS

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EPA’s e-Manifest System: status updates, and how to create user accounts

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E-Manifest Help Desk, 833-501-6826
Chicago, May 14, 2019
Brief background on first 10 months of e-Manifest
What is e-Manifest?

• EPA has created a new term, “e-Manifest,” which refers to EPA’s newly-created data system that began operating on June 30, 2018.

• This e-Manifest data system has two components:
  • E-Manifest is a database, into which EPA has begun to enter and store all data from all RCRA hazardous waste manifests that are created nationwide.
  • It’s also an electronic manifest routing system, which allows those who generate, transport and receive a shipment of RCRA haz waste the option to create an electronic version of a manifest and transmit it among themselves electronically, and then send the data to EPA’s new database electronically, thereby allowing the option to do away with paper manifests.

• Note: EPA plans eventually to eliminate paper manifests, and make it mandatory to use electronic manifests, but likely not for years.
E-Manifest is part of the RCRAInfo database

• EPA added the e-Manifest system as a module to EPA’s existing national RCRA database called “RCRAInfo.”

• RCRAInfo has been around since the 1980s and is used by EPA, states and tribes to track all key RCRA data from the work we do, including EPA Site ID number assignments, inspections, permits, and site cleanup activities.

• Until recently, RCRAInfo was a database only accessible to EPA, states and tribes, but now has several industry-facing modules, including e-Manifest, myRCRAid, and Biennial Report.
The RCRA program & state partners

• EPA and the environmental agencies in almost all states work in partnership to implement the RCRA statute and regulations.

• Congress wrote RCRA to allow EPA to officially delegate RCRA work to states and tribes which request it, in a process called “authorization.”

• When states and tribes do RCRA work for which they are authorized, they are doing federal work, such as inspections, permit-writing, and site cleanup. (States and tribes also can create & implement state/tribal-only waste rules.)

• All EPA Region 5 states (IL, IN, MI, MN, OH, WI) are authorized to implement most of RCRA.

• As of now, no tribes in Region 5 have requested authorization to implement the RCRA subtitle C hazardous waste program, thus EPA has the RCRA C haz waste implementation role in e-Manifest.
Manifest stats, June 30, 2018 to April 30, 2019

• Total manifests received by EPA: 1.52 million (≈150,000/month, 5,000/day)
  • Total paper submissions: 103,000 (6.8%)
  • image-only: 273,000 (18%)
  • data+image: 1,140,000 (75%)
  • electronic: 4,000 (0.26%)

• EPA has 350,000 paper and image-only manifests to enter into the database. (Data entry is done by EPA contractors.)

• When a receiver uploads an the pdf for an image-only manifest submission, only the receiver, and EPA, can see the pdf until EPA enters the data.

• When a receiver sends EPA a paper manifest, no one can see the data in the database until EPA enters the data.
Frequently-noted manifest errors

• EPA is receiving paper or pdf image copies of manifests which are illegible, missing key information, or for which information is struck out in a way where the intent of the strikeout isn’t discernable.
• Receiving facilities not including a current phone number.
• Generators mailing paper manifests to EPA.
• Missing signatures and dates.
• No management method codes listed for hazardous waste.
• For PCB waste, incomplete information, such load type, weight in kgs, missing earliest date of removal from service.
Videos are available describing e-Manifest account creation and electronic manifests

• Ohio EPA posted a video to YouTube giving background to the e-Manifest system and instructions for creating user accounts. See https://www.youtube.com/watch?v=oiKn82d17u8

• EPA posted a video to YouTube that walks one through the process of creating and routing electronic manifests, from generator to transporter(s) to final designated receiver. See https://youtu.be/f48yIkdsIY4

• Both videos were recorded in mid-2018, so some e-Manifest screens have changed, but I believe they still have value.
Generators and transporters are not required to use the e-Manifest system yet. But what if you want to use it?

The system offers value and is worth learning to use eventually. If you agree, we have a lot more to talk about.
Having a user account has advantages

• All receiving facilities must have, and likely already have, accounts, even if they only receive manifests on paper.

• However, as of now, generators and transporters don’t need to use the system, but there are benefits to using it. Having access allows one to:
  • View previous manifest submissions for your site without waiting for EPA to upload the data to our public website,
  • Directly make corrections, if needed, to manifests previously submitted for your site, and/or
  • Use the optional electronic manifest routing system, to create, sign and route electronic manifests for your site.
You’ll need 3 approvals for full account access

When generators, transporters, receivers and others want to use the e-Manifest system, they need to:

1. **Receive a user account:** register for an e-Manifest “industry user” account and get it approved by the state in which your office is located. (Rarely an account may be approved by EPA.) You only will need one user account.

2. **Receive access to site data:** request one of four levels of access for each site for which you want access to that site’s manifest data, and get access approved by a Site Manager for that site, or by the state. You must request and receive access separately for each site.

3. **Pass a one-time identity verification process,** using either EPA’s online “Electronic Signature Agreement” (ESA) process, or using a paper method which gets approved by the state (or possibly by EPA). This step is for Certifiers and Site Managers only.
First approval: register for an “industry user” account and get it approved.
How do I register for an account?

• To be able to use the e-Manifest system, all generators, transporters and receiving facilities must first “register” for an industry user account.

• To begin the account registration process, go to: https://rcrainfo.epa.gov/rcrainfoprod/action/secured/login
Account login and registration screen

• This is the RCRAInfo homepage.
• To create a new user account, click “register.”
• Once you have an active account, this is also your login page.
• You also will initiate password resets here. (Don’t need to call hotline.)
The first account registration screen:

• When you click “register,” you will see this screen next.
• Select “continue to industry user registration.”
“Create a new account” screen

- Asterisked fields are mandatory.
- There are more screens after this.
- “Submit” the form.
- It’s best to enter your name the way it appears on your credit report.
Sign up as an “industry user”

• To use the e-Manifest system, generators, transporters, and receivers, and brokers when eligible, must sign up as industry users.

• Regulatory agency user accounts are for federal, state and tribal government staff only.

• Industry user applications typically are routed to the state for approval. (In some regions it may go to the EPA regional office.)

• A person reviews your application prior to approval, and may contact you.

• It’s best to create your user account using your name as it appears on your credit report, because eventually you may want to complete an online identity-proofing process (called an “Electronic Signature Agreement”), which uses your credit file to confirm your identity. Your name needs to match the credit file for this online process to work. We’ll cover this later.
Second approval: request and get approval to see site data
Second level of approval: access to sites

When generators, transporters, receivers and others want to use the e-Manifest system, they need to:

1. **Receive a user account:** register for an e-Manifest “industry user” account and get it approved by the state in which your office is located. (Rarely, an account may be approved by EPA.) You only will need one user account.

2. **Receive access to site data:** request one of four levels of access for each site for which you want access to that site’s manifest data, and get access approved by a Site Manager for that site, or by the state. You must request and receive access separately for each site.

3. Pass a one-time identity verification process, using either EPA’s online “Electronic Signature Agreement” (ESA) process, or using a paper method which gets approved by the state (or, possibly by EPA). This step is for Certifiers and Site Managers only.
Get a second approval, to access site data

• Getting an industry user account is not enough.

• Once receiving an account, a person must request and receive access to a site’s data, for each site for which you need to submit, prepare and/or view manifest data. (For these purposes, a “site” is a facility that has or should have a unique EPA Site ID #.)

• When you request access to a site’s data, that access will be granted by a Site Manager for the site or by the state, and typically not EPA. Again, the site or the state may contact you.

• EPA has created four levels of site access: “Viewer,” “Preparer,” “Certifier,” and “Site Manager.” When a person requests access to a site’s data, he/she requests access to serve in one of these four roles.
Site-access authorities

1. “Viewer” is the 1st level of access: Viewers only can view data entered or forms prepared by others for that site.

2. “Preparer” is the 2nd level of access: Preparers can view existing data and forms as well as enter data and prepare forms for submission. But Preparers cannot submit forms or data for that site.

3. “Certifier” is the 3rd level of access for a site: Certifiers can electronically sign and submit forms to EPA, as well as view and prepare forms.

4. “Site Manager” is the highest level of access: they can view, prepare, certify/sign-and-submit forms to EPA for that site, approve Viewers, Preparers, Certifiers, and other Site Managers for that site, and remove previously-approved access rights for that site.
All sites need to designate a Site Manager

• When a generator or transporter wants to access their site’s data in the e-Manifest system, they need to designate a person as the Site Manager for their site.

• Only one person initially needs to apply as a Site Manager for a given site.

• Once the state approves the first Site Manager for a given site, that Site Manager can approve other Site Managers and all Certifiers, Preparers and Viewers it needs for that site, without state approval.

• Site Managers get emails from the system when new site access requests are submitted, and you will have to vet those applications.

• People who apply for site access at the Site Manager or Certifier level need to complete an “Electronic Signature Agreement” to verify their identity. The system will prompt you to do this, so you don’t need to look for a link to initiate this process.
How do I request access to a site’s data?

• Log into your account.
• Your home page will look similar to this:
• Click “add existing site”
• Enter an EPA Site ID#, site name or address and select “search”
• Select the site and click “request access.”
Select the permission level you need, per site

- After clicking “request access,” you will get the “select permissions” popup window, where you will select the level of permission you want for that site.
- If you want “Site Manager” access, select the dropdown next to “site management” and select “active.”
- If you want lower level access, select the dropdown next to “e-Manifest” and choose Viewer, Preparer or Certifier.
- Click “send request.” The Site Manager or state agency will review and decide on your access request.
“My Sites” home screen

• Then, when you log into e-Manifest, your “my sites” home screen will populate with the sites to which you have received access.
• Click on a site name to advance.
“Site Details” screen

• You then will see the “site details” for that site.
• Click on the “e-Manifest” tab, which takes you to your “e-Manifest dashboard” screen.
“E-Manifest dashboard” screen

• Your e-Manifest dashboard will look like this.
• From here you can “create new manifest” or view previously-submitted manifests.
• You’ll see tables of manifests that are in “in progress,” “received,” and “paper manifests (image-only)” stages.
Lower part of “e-Manifest dashboard” screen

• This is the lower part of the dashboard screen from the previous screenshot.

• For a given manifest, note the “status” and “actions” columns.

• If you click on the “pencil” or “eye” symbols under “actions,” you’ll be able to “edit” or “view” that manifest, respectively.
Bottom of a “view” screen for a manifest, where receiver uploaded an image file

- If you select “edit” or “view,” and if EPA received a pdf of a paper manifest, you can view the pdf by clicking the “view uploaded paper manifest” link at the bottom, above green “make corrections” button.
Third approval: complete “Electronic Signature Agreement” identity verification process (Certifiers and Site Managers only)
Third level of approval: ESA

When generators, transporters, receivers and others want to use the e-Manifest system, they need to:

1. **Receive a user account:** register for an e-Manifest “industry user” account and get it approved by the state in which your office is located. (Rarely, an account may be approved by EPA.) You only will need one user account.

2. **Receive access to sites’ data:** request one of four levels of access for each site for which you want access to that site’s manifest data, and get access approved by a Site Manager or by the state. You must request and receive access separately for each site.

3. **Pass a one-time identity verification process, using either EPA’s online “Electronic Signature Agreement” (ESA) process, or using a paper method which gets approved by the state (or, possibly by EPA). This step is for Certifiers and Site Managers only.**
ESA – one added layer of identity-proofing

• After you are approved as a Site Manager or Certifier for a site, you need to complete a one-time ESA to provide a final layer of identity verification.
• You will be prompted by the system to complete your ESA.
• ESA is only needed when applying for the role of Site Manager or Certifier, as only they can electronically sign or edit manifests.
• You only have to complete the ESA one time, the first time you request Site Manager or Certifier access for any particular site.
• You can complete the ESA online and, hopefully, receive instant access, or by mailing in a paper form, which may take several weeks to be approved.
• Online ESA requires you to enter personal data to match to your credit file.
• EPA contracts with a private service to perform online ESA verification. EPA doesn’t get your personal data and contractor doesn’t save it.
Filling out the online ESA form

• This is the initial ESA screen.
• Set the slider “would you like to perform electronic identity proofing?” to “yes” (which is the default).
• Complete and “verify and sign.”
• Approval should be immediate.
Submitting a paper ESA form

• Set the slider “would you like to perform electronic identity proofing?” to “no.”
• Follow instructions for completing, printing, signing, and mailing form.
• It may take several weeks for the form’s recipient to receive, review and approve your ESA. He/she may contact you.
• Once your ESA is approved, you can perform Certifier or Site Manager functions for any and all sites for which the state or other Site Manager has given you these levels of access.
How do I stay informed?

• Visit EPA’s e-Manifest website: http://www.epa.gov/e-Manifest
• Attend EPA’s e-Manifest webinars. (And can view previous webinar slides at e-Manifest website.)
• Send email to eManifest-subscribe@lists.epa.gov to subscribe to EPA’s e-Manifest listserv.
• Read EPA’s 150+ question e-Manifest FAQ document at: https://www.epa.gov/e-manifest/frequent-questions-about-e-manifest
• Read EPA e-Manifest fact sheets at: https://www.epa.gov/e-manifest/fact-sheets-e-manifest-stakeholders
• When you have questions, contact e-Manifest help desk, 833-501-6826, or your Region 5 e-Manifest contacts, Tom Crosetto and Mike Cunningham.
EPA Region 5 e-Manifest contact information

IT questions: Tom Crosetto
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Extra slides
Routing an electronic manifest
Basic process flow for electronic manifests

1. A manifest is created electronically by the generator or an authorized person on behalf of the generator and is saved in “pending” status.
2. Prior to waste leaving the generator, the receiver approves the “pending” electronic manifest by marking it as “scheduled” and saving it.
3. Appropriate designee of generator electronically signs manifest.
4. Transporter(s) pick up and electronically sign.
5. Waste is delivered to receiver who e-signs upon arrival or fully/partially rejects load. E-Manifest system performs validity checks on manifest. For manifests that fail, receiver is notified, edits manifest and re-signs. Manifests can be corrected during transit or after receipt.
Electronic manifest step 1: preparation

- Manifests can be initiated by receiver, generator or others authorized.
- Preparer, Certifier or Site Manager logs into e-Manifest account, selects site from “my sites” list, selects “e-Manifest” tab, and then clicks “create new manifest” button.
- Enter all manifest data (except possibly the “management method code”) and click “save and return,” and then “save,” at which time the manifest will be displayed in the “in progress” table, with “draft” or “pending” status in the “status” column.
- If in “draft” status, only creator can see it.
- When saved as “pending,” the generator, transporter(s) and receivers listed on the manifest can see it.
- Must be in “pending” status for manifest to advance to next step.
Receiver or other initiates electronic manifest

• This is a dashboard for a receiving facility.

• Click green “create new manifest” button to begin the process of creating a manifest.

• Since the receiver is creating manifest, receiving facility data will be prepopulated.

• Select generator, transporter(s) and enter waste data.
Note the tables on dashboard

- This is lower part of a dashboard screen for a receiver (continued from previous slide.)
- Note tables for manifests which are “in progress,” “received” and “paper manifests (image-only).”
- Only receivers have the “paper manifest (image-only)” table.
- Note column names, particularly “status” and “actions” columns.
- Note “pencil” (edit) and “eye” (view) symbols in “actions” column.
Create manifest and save

• If you are creating a manifest but are not a receiver, you can save only in “draft” or “pending” status.

• Receivers creating a manifest for a generator customer can save in “draft,” “pending” or “scheduled” status.

• Enter handler and waste data, “save and return,” and “save.”
Green banner message appears briefly

• When properly saved, a green banner will briefly appear to say “Manifest xyz has been set to Pending and saved. All Handlers on this manifest are now able to view it on their dashboard.”

• The banner reads differently when a receiver creates manifest.
Electronic manifest step 2: receiver must “schedule” manifest shipment

• Receiver logs into e-Manifest account, selects site from “my sites” list, and clicks on “e-Manifest” tab to go to e-Manifest dashboard.
• Find manifest in the “in progress” table, with the status of “pending.”
• Open it by clicking the pencil in “actions” column to enter “edit” mode, move radio button to “scheduled” status, makes any other changes as needed, and then clicks “save.”
• A popup window appears offering a choice of “electronic” or “hybrid” manifest type. Select appropriate one and “save” again.
• Upon saving, “status” changes to “scheduled” and manifest stays in “in progress” table.
• Receiver skips step one of this process if it creates manifest for generator and saves it in “scheduled” status from the beginning.
Receiver marks manifest as “scheduled”

- For manifests not prepared by the receiver, the receiver must find, open and review manifest before it can be signed by the generator and picked up by the first transporter.

- When ready to approve manifest, receiver moves radio button to “scheduled” and clicks “save.”
Receiver selects type of manifest created

• After saving, a popup window appears that says: “select the type of manifest you are creating: electronic or hybrid.”

• Select the appropriate option and “save.”

• A green banner message will appear briefly indicating a successful save.
Electronic manifest step 3: generator

• Generator logs into e-Manifest account, goes to dashboard, and finds the manifest in dashboard’s “in progress” table.
• Opens manifest by clicking the “pencil” (edit) or “eye” (view) icon in the “actions” column.
• Reviews it, edits it as needed, then clicks “review and sign” and “sign.”
• Signing is a four-step process, involving:
  • “accepting” a certification
  • reentering your account password
  • answering a “verification” question, and
  • saving.
• Upon signing, “status” still displays as “scheduled” and manifest remains in the “in progress” table.
Electronic manifest step 4: transporter(s)

• When transporter picks up waste, a driver with Certifier or Site Manager rights logs into his/her individual user account, selects their transporter site from their “my sites” list, clicks on “e-Manifest” tab to enter dashboard, and finds manifest in dashboard’s “in progress” table.

• If two or more transporters are on the manifest and the first has signed, “status” will display as “in transit” and manifest stays in “in progress” table.

• Driver opens manifest by clicking the “pencil” (edit) or “eye” (view) icon in the “actions” column.

• Driver reviews, edits as needed, then must “review and sign” and then “sign.” (Signing is the same four-step process as for the generator.)

• Upon signature by the last transporter, the manifest moves to “received” table and “status” changes to “ready for signature.”
Electronic manifest step 5: receiver

• Certifier or Site Manager at receiver signs into account, goes to dashboard, and finds “ready for signature” manifest in the “received” table.

• Opens it by clicking “pencil” or “eye” icon in the “actions” column.

• Reviews and edits as needed (such as by adding management method code), then must “review and sign” and “sign.” (Signing is the same four-step process as it is for generators and transporters.)

• “Management method code” is not a mandatory field when manifest is created, but becomes a mandatory field when receiver receives shipment.

• E-Manifest system performs validity checks on the manifest after signing.
Status changes upon receiver’s signature

Upon receiver’s signature, a manifest stays in “received” table, and changes from “ready for signature” status to one of the following statuses:

• For a manifest that passes validity checks, “status” will display as “signed-complete.”
• For a manifest that does not pass validity checks after signing, “status” displays as “signed.” An error message will display, and data need to be added (often the management method code).
• If status displays as “under correction,” a handler has initiated a correction to the previously-signed manifest and has not yet re-signed to certify changes/corrections.
• If “status” displays as “corrected,” a handler has corrected and re-signed the manifest, which concludes the “under correction” status.
Incomplete manifests enter “signed” status

- If receiver signs a manifest that is incomplete, a warning message displays: “The following manifest is marked as received but is not complete. Some data is missing from this manifest. The missing data will need to be added and signed for before this manifest is complete.”
Receiver must edit incomplete manifests

- Find manifest and click pencil icon in “actions” column to edit.
- For example, note red box at left of waste line; management method code is missing. Click pencil to edit.
- Review manifest, make corrections and re-sign.

EPA presentation to Air and Waste Management Association, May 14, 2019
Receivers can sign up to 50 manifests at a time

- Click blue “sign manifests” button, then check boxes in left column.
How can I test the e-Manifest database?

• To test the database, you need an account for EPA’s “test” (a/k/a “preproduction”) version of the database.

• To learn how to test the database, see: https://www.epa.gov/e-Manifest/how-participate-testing-hazardous-waste-electronic-manifest-system-system-e-Manifest

• Note that people must register separately for access to the “test”/”preprod” version of e-Manifest and to the “production” version.

• That is, having an account to the test database does NOT give you access to the production version of e-Manifest, and vice versa.

• Prod and preprod databases will operate simultaneously indefinitely.
How can I view my sites’ manifests if I don’t have an e-Manifest account?

• For generators and transporters which have an e-Manifest account, you will get your manifest data from the “e-Manifest dashboard” for your site.

• If you don’t have an account, you must make arrangements with your receiver to send you paper copies of your manifests.

• If you don’t have an account, you can get manifest data online, at an EPA website called “RCRAInfo Web,” https://rcrapublic.epa.gov/rcrainfoweb/action/main-menu/view. (From this site, click “e-Manifest,” then “sites list,” then enter your EPA Site ID # and enter an appropriate date range.)

• All manifest data eventually are available on RCRAInfo Web, except some “chemicals of interest” are removed to comply with DHS requirements.

• EPA doesn’t release data to RCRAInfo Web until 90 days after receipt.
What is a “hybrid manifest?”

• A “hybrid manifest” is a manifest that allows the (first) transporter to initiate an electronic manifest in the e-Manifest database for their generator customers who don’t have an e-Manifest account.

• To qualify as a hybrid manifest, the first transporter must create an electronic manifest in the database and then print it out, where it is signed on paper by the generator (just like a regular paper manifest). The rest of the manifest transaction is then executed electronically through the e-Manifest system, including electronic signatures by the initial transporter, any subsequent transporters, and the receiver.
EPA Site ID #s and the e-Manifest system

• Some generator sites don’t need an EPA Site ID number (some very small quantity generators for instance, depending on your state), but you may still want to get EPA Site ID #s, because without one, you can’t view your site’s manifest data on the system or make corrections.

• EPA Site ID numbers are issued by the RCRA program.

• In EPA Region 5, our states issue them, except on tribal land, where Region 5 issues.
Do e-Manifest, and other recent manifest-related rule changes, apply to Generators or Transporters?

• Are generators or transporters required to use the e-Manifest system? No.
  • Currently generators and transporters are not required to use either the database or the electronic manifest routing system.
  • Therefore, you do not need to change the way you create and process manifests - you can continue to use paper manifests, for many years to come.

• Can they opt into using the e-Manifest system now? Yes.
  • And if you do, you should find it beneficial, but there’s a lot to learn.

• Do the other recent RCRA manifest rule changes apply to generators and transporters? Yes.
  • EPA instituted other manifest-related rule changes, effective June 30, 2018, that will affect generators and transporters.

• We’ll unpack all of this in this presentation.
Unpacking e-Manifest and the 2018 RCRA manifest rule changes
A new law creates significant change

• In October 2012, the president signed into law the statute entitled *Hazardous Waste Electronic Manifest Establishment Act*.

• This is a significant new law, requiring EPA to significantly change RCRA manifest processes that had been in place for 30+ years.

• The law requires EPA to:
  • Create the e-Manifest database and electronic manifest routing system.
  • Collect all manifests and put all manifest data into the new database.
  • Collect user fees to fund the e-Manifest system.

• EPA wrote new rules to implement the new law, some of which took effect on June 30, 2018.
Summary of key manifest rule changes

• Mandatory: Facilities receiving manifested wastes must submit those manifests to EPA. Literally overnight, EPA went from not collecting manifests to collecting all manifests, about 2 million per year.

• Mandatory: Receivers pay EPA a fee for each manifest. EPA now charges receiving facilities between $5 and $15 for each paper or electronic manifest they submit, depending on EPA’s processing costs.

• Optional: Manifests can be created and routed electronically. EPA has created the new electronic manifest routing option as directed by Congress, but people still can use paper manifests.
Receivers submit manifests and pay fees

- Receivers have four options for submitting manifests to EPA:
  1. “paper” ($15)
  2. “image-only” ($10)
  3. “data+image” ($6.50), or
  4. “electronic” ($5)

- When receivers submit “paper” or “image-only” manifests, EPA contractors enter data into the database, with a goal of 30 days.
- When receivers submit “data+image” and “electronic” manifests, the data flow directly from the receivers into the database.
- EPA has received about 1.5 million manifests since June 2018, but less than 1% are electronic thus far.
- EPA is allowed to adjust fees, and plans to do so in June 2019.
There is a new paper manifest form

• For those generators, transporters and receivers who continue to use paper manifests, EPA has created a new 5-part form to replace the former 6-part form.

• The 6-part form still can be used until stocks run out.

• No new data are required on the five-part form.

• The instructions for distributing copies of the form to the various recipients have changed.
Cathy Stepp serves as the Regional Administrator for EPA Region 5. Her responsibilities include overseeing environmental protection efforts in the Great Lakes states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin, as well as 35 federally recognized tribal governments. One of her roles is manager of EPA Great Lakes National Program, in which she leads restoration and protection of the largest freshwater system in the world. Before joining EPA, she was secretary of the Wisconsin Department of Natural Resources from 2011 to 2017.
SESSION III

State Regulatory Agency Panel

Charles Breitenfeldt
Senior Environmental Manager
Compliance & Technical Assistance Program
Indiana Department of Environmental Management

Charles Breitenfeldt has served as a Senior Environmental Manager for the Indiana Department of Environmental Management (IDEM) for the Compliance and Technical Assistance Program (CTAP) since October 2016. He also serves as the program coordinator for the Northwest Indiana Partners for Clean Air program. Charles has spent his time at IDEM building relationships with the regulated community and developing their trust in him. He visits over 200 businesses each year offering his services and assisting them with compliance issues and questions from all media of regulation. Mr. Breitenfeldt grew up in a town of less than 700 in central Wisconsin and graduated from Northland College, in Ashland, WI, in 2009 with degrees in Meteorology and Business with a minor in Physics.

Jack Schinderle
Director
Waste Management and Radiation Protection Division
Michigan Department of Environmental Quality

Jack Schinderle is the Director of the Waste Management and Radiological Protection Division of the DEQ. Jack came to the DEQ from a Chicago based environmental company. He has spent most of his time at the DEQ working in the waste programs on a wide variety of topics and issues. In addition, he has experience assisting the regulatory programs with compliance assistance and outreach, and supporting the regulated community with implementing pollution prevention opportunities. Jack holds a Bachelor's degree from Purdue University and a Master’s degree from Davenport University.

Darsi Foss
Director
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources

Darsi Foss oversees the entire EM Division. Darsi became Division Administrator for the EM Division in February 2019. Darsi was the Director of the Remediation and Redevelopment Program from 2014-2019 and served as the RR Program’s Brownfields Section Chief from 1998-2014. Prior to coming to the DNR in 1989, she worked at EPA headquarters in Washington, D.C., as a policy analyst and presidential management intern.

Darsi has a Bachelor of Science degree in political science and a Master’s degree in public administration from Iowa State University.

Kyle Rominger
Deputy Chief
Bureau of Land
Illinois Environmental Protection Agency

Kyle Rominger is Deputy Chief of the Bureau of Land at the Illinois Environmental Protection Agency. He has both technical and legal experience in the environmental field, beginning as a project manager in the Leaking Underground Storage Tank Section at the inception of the Illinois EPA’s Leaking Underground Storage Tank Program. He served as a regulatory attorney for the Bureau of Land for more than 16 years, including as Deputy General Counsel over the regulatory attorneys for the Bureau of Land and the Bureau of Water. As Deputy Chief of the Bureau of Land Kyle helps lead the Agency's land-related programs.
Wisconsin Updates

Darsi Foss, Director
Department of Natural Resources
Environmental Management Division
May 14, 2019
Updates on:

- New Administration
- New Legislation
- Air Program
- PFAS
- Hazardous Waste
- Soil management at cleanups & PAHs

2019 Annual Waste Conference — A&WMA-LMSS
New Administration & Budget

- Governor’s Evers’ budget
  - Year of clean drinking water
  - Increase in staff for water-related work
  - $1M well compensation funds
  - $40M in bonding for lead laterals
  - $25M for sediment dredging of Great Lakes AOCs
  - $4M in urban nonpoint source and stormwater grants
  - $4M in nonpoint sources for ag reduction water projects
Legislative Issues:

- Speaker’s Water Quality Task Force
- Draft Nutrient Trading Bill – LRB 1224
- Possible PFAS legislation – AB 85
- Other
PFAS Updates

• Addressing 11 Known PFAS cleanup sites
• Conducting study of Madison municipal wells & PFAS sources
• Expecting WDHS to recommend standards for PFOA and PFOS – SOON!
• Sent 24 additional PFAS compounds to WDHS
• Hosting PFAS advisory group - https://dnr.wi.gov/topic/Contaminants/PFASGroup.html
WDNR Seeks Standards for Additional PFAS Compounds

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State law requires DNR to maintain lists of compounds detected in, or have a reasonable probability to enter groundwater, and routinely ask DHS to recommend standards.
Air Management

- Permit Metrics
  - Title V renewal backlog is decreasing
  - Construction permit issuance times remain steady
- Compliance
  - Piloting new inspection template
- E-signature
- Implementing 2 ozone standards
  - 2008 standard
  - 2015 standard
Hazardous Waste

Rule Development

- June 2019: Projected public comment period
- April 2020: Deadline for legislative approval

Significant components of rule package:

- HW e-manifest Rule
- Revisions to the Definition of Solid Waste
- Generator Improvement Rule
- Pharmaceutical Rule
Soil Management from Cleanups

- NR 718 contaminated soil management – RR060
- Exempt soil guidance – RR103
- Low Hazard Exemption – WA1645
- NR 700 rule revisions, including PAHs
- https://dnr.wi.gov/
Contact Information

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https://dnr.wi.gov/
Regulatory Update Illinois

Kyle Rominger
Deputy Chief
Bureau of Land
Illinois EPA
Clean Construction
Demolition Debris

Supreme Court of Illinois
Case No. 122798, 122813 (Cons.)
Special Waste Manifests

R2019-018
Special Waste Hauling
35 Ill. Adm. Code 809
Tiered Approach to Corrective Action Objectives

35 Ill. Adm. Code 742
Appendix A, Table G
Inorganics in Background Soils
Coal Combustion Residue

SB 9
Drycleaner Environmental Response Trust Fund
SB 171
HB 2076
Bisphenol A (BPA)
Paper Ban
Battery Recycling
HB 2296
Special Waste Manifests

HB 2764
Mahomet Aquifer Legacy Landfills

SB 2027
Kyle Rominger

Deputy Bureau Chief
Bureau of Land
Kyle.Rominger@illinois.gov
(217) 524-3974
SESSION IV

Emerging Contaminants and Remediation Issues

Dr. Rula Deeb, Ph.D., BCEEM, PMP
Sr. Principal Civil and Environmental Engineer
Geosyntec Consultants

Dr. Rula Deeb is a Senior Principal Civil and Environmental Engineer with Geosyntec with more than 25 years of experience addressing the cross-media fate and transport of emerging contaminants, and the remediation of complex soil and groundwater sites. Her focus on emerging contaminants has promoted awareness and improved the understanding of the sources, occurrence, fate and transport, and behavior of these compounds in natural and treatment environments. Dr. Deeb’s per- and polyfluoroalkyl substances (PFAS) experience spans over a decade. She is currently overseeing a PFAS-focused limited Remedial Investigation (RI) at the former Plattsburgh Air Force Base in New York where aqueous film-forming foam (AFFF) were used for decades. She is conducting a first-to-field demonstration funded by DoD’s Environmental Security Technology Certification Program (ESTCP) to enhance in-situ PFAS destruction at an AFFF-impacted aquifer at Naval Air Station Jacksonville. In addition to leading PFAS projects all over the United States for a broad range of clients, Dr. Deeb has joined forces with multiple universities to develop new technologies for sampling and treating PFAS in a variety of environmental media.

Jane Montgomery
Partner
Schiff Hardin LLP

Jane E. Montgomery is a partner with Schiff Hardin LLP. As one of the firm’s most versatile lawyers in the Environmental Practice Group, Jane regularly bridges the gap between engineers, business people, and regulators. Jane has extensive experience representing energy companies, developers, lenders, and manufacturing companies in a broad range of environmental matters, including those arising in air permitting and Clean Air Act Amendments, as well as solid and hazardous waste. She brings an in-depth understanding of the dynamic legal landscape governing the use of air, water, and land. Jane closely partners with clients to quickly resolve emergent problems as well as investigating root causes to develop procedures that keep issues from recurring.

Jane is a regular contributor to the firm’s Environmental and Energy Law Adviser blog and has been recognized by U.S. News & World Report’s Best Lawyers in America, Thomson Reuters’ Illinois Super Lawyers, and Law Bulletin’s Illinois Leading Lawyers Network.
Technical, Regulatory and Legal Issues Associated with the Use of Per- and Polyfluoroalkyl Substances (PFAS)

Rula A. Deeb, Ph.D., BCEEM, PMP
Geosyntec Consultants, Oakland, CA

5/14/2019
Outline

• Technical issues
  – Chemistry
  – Uses
  – Toxicology
  – Fate and transport
  – Site investigation
  – Treatment

• Regulatory issues

• Legal drivers

• Summary
What are PFAS?

• **Per- and polyfluoroalkyl substance** are synthetic organics that contain multiple fluorine atoms
  – Perfluorooctanoic acid (PFOA)
  – Perfluorooctane sulfonic acid (PFOS)

• C-F bond is shortest and strongest bond in nature so PFAS are extremely persistent in environmental media

• Likely more than 5,000 individual PFAS in use
PFAS Uses

• Industrial
  – Chemical manufacturing processes
  – Textiles and carpets
  – Heavy industry (chrome plating)
  – Aerospace industry
  – Petrochemical industry (AFFF systems)

• Military
  – Aqueous film forming foams (AFFF)

• Municipal
  – Airports
Sources

• Production and manufacturing
  − Surfactants, resins, molds, plastics
  − Textiles and leather
  − Paper products

• Landfills
  − Consumer products
  − Industrial waste
  − Biosolids from WWTP applied as cover

• Waste water treatment plants
  − Industrial or domestic products in influent may not be treated (or may be transformed) and end up in effluent
  − Biosolids may contain PFAS

• AFFF
  − Military installations
  − Civilian airports
  − Petroleum refineries
  − Fire fighting training areas
AFFF Uses

• AFFF is a proprietary mixture of fluorinated and hydrocarbon surfactants, water, corrosion inhibitors, solvents, few % PFAS

• Military specifications (MILSPEC) developed for AFFF by the U.S. DoD

• 75% of AFFF produced used by military, and 25% used by oil refineries, municipal airports, fire stations and tank farms

• Multiple AFFFs likely used at most sites

• Only a small fraction of the PFAS produced is used in AFFF
Why PFAS are Emerging Now

• PFAS are not detectable using conventional analytical tools for environmental contaminants (e.g., gas chromatography)

• Commercially-available measurement techniques only recently available
  - Commercial grade liquid chromatography/tandem mass spectrometry (LC-MS/MS) became available < 15 years ago
  - Quality standards for PFAS available within last 10 years
Rose are red
but some are pink
there’s PFAS in more products than
you might think.
Toxicology

• Most toxicology studies have focused on PFOA and PFOS
  – Potential carcinogenic properties
    • “Suggestive” for both PFOS and PFOA (EPA), and “possibly” for PFOA (International Agency for Research on Cancer)
  – Non-cancer effects in mammals are primarily focused on developmental effects
    • PFOS: reduced birth weight
    • PFOA: developmental effects in bones, accelerated puberty
    • EPA reference doses for human health (PFOS, PFOA): Can perform risk assessments and calculate risk-based target levels

• Limited information for other PFAS
  – EPA reference doses for GenX and PFBS (less toxic than PFOA and PFOS)
  – EPA (December 2018): PFNA, PFBA, PFHxA, PFHxS, and PFDA in preparation, no timeline given
Human Exposure Pathways

- **Major**\(^1,2\)
  - Drinking water
  - Incidental soil/dust ingestion
  - Diet (bioaccumulation)
    - Fish and seafood
    - Homegrown produce
    - Agriculture
- **Usually insignificant or minor**
  - Dermal absorption
  - Inhalation

---

Bioaccumulation Exposures

- PFAS bioaccumulates into ecological and agricultural food chains
  - Smaller PFAS accumulate in plants
  - Larger PFAS accumulates in animals
Environmental Fate and Transport

Key takeaway: PFAS are mobile and persistent

- Sorption generally increases with number of carbons
- Transport related to charged state of PFAS
  - Anions > zwitterions > cations
  - Shorter chain lengths generally move faster
- Polyfluoroalkyl substances
  - Potential to form perfluoroalkyl carboxylates (PFCA) and perfluoroalkane sulfonates (PFSA), abiotically and biotically
  - Variable transport properties
- PFSA and PFCA
  - Not readily biodegradable
  - Not readily transformed abiotically
  - Generally high mobility
Site Investigation Considerations

• Field preparation and planning: PFAS-specific SOPs are important
  – Avoid cross-contamination and false positive results since PFAS is potentially present in variety of commonly-used materials
  – Current sampling guidance reflect abundance of precaution, rather than scientific findings

• Sampling considerations
  – Materials
  – Field staff
Site Investigation: A Case Study

Cape Canaveral Air Force Station Fire Training Area (FT-17)
Operated before 1970

PFOS + PFOA = 337,100 ng/L
4815X > EPA Health Advisory

PFOS + PFOA = 885 ng/L
126X > EPA Health Advisory

Legend:
- Historical AFF source area
- Monitoring well
- Vertical aquifer profile sample
- PFOS/PFOA concentration (µg/L)
Treatment

- Challenging and costly due to stability of PFOS and complexity of PFAS mixtures
- No destruction technologies currently available
  - “New era” of pump-and-treat
- Lack of proven (demonstrated) in situ treatment methods
- Available technologies do not address sorbed PFAS and precursors

Innovative technologies are being identified and funded for development and demonstration by the DoD
Innovative Treatment Technologies

• Geosyntec teaming partners: UC Berkeley, NAVFAC, ESTCP
• Title: “PFAS Degradation Using Thermally-Enhanced Persulfate Oxidation”
• Objective: Demonstrate the effectiveness of an in situ technology for PFAS treatment for managing contaminated sites (sources areas and plumes)
• Technology overview
  – Fully degrades polyfluoroalkyl substances that are known precursors of perfluoroalkyl acids
  – Fully degrades perfluorocarboxylic acids
  – Not effective for perfluorosulfonic acids so must be used in a treatment train approach

https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/Contaminated-Groundwater/Persistent-Contamination/ER-20172
Innovative Treatment Technologies

Conditions
Groundwater and solids, 1:1 water:solids, \([\text{H}_2\text{O}_2]= 12\%\), \([\text{S}_2\text{O}_8^{2-}]_0 = 200 \text{ mM}\), \(T = 40^\circ \text{C}\), no acidification. \(\text{H}_2\text{O}_2\) added day 0, \(\text{S}_2\text{O}_8^{2-}\) added weekly after 5 days

https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/Contaminated-Groundwater/Persistent-Contamination/ER-20172
Innovative Treatment Technologies

• Geosyntec teaming partners: University of Western Ontario, Savron, Royal Military Collage of Canada and SERDP

• Title: “Demonstration of Smoldering Combustion Treatment of PFAS-Impacted Investigation-Derived Waste”

• Objective
  – Demonstrate that surrogate fuels can support smoldering >900°C that destroy PFAS in soils or spent activated carbon

https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/ER18-1593
# Innovative Treatment Technologies

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https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/ER18-1593
Innovative Treatment Technologies

- GAC > 40 g/kg in soil achieved combustion at temperatures that destroy PFAS
- PFAS treated to non-detectable levels in soils, sand and ash
- >80% of the PFAS as HF, shows complete decomposition is possible
- Low amounts of some decomposition products may form; capture and re-treat
- Fast smoldering front velocity allows practicable application at larger scales (full scale experience using smoldering to destroy other hydrocarbons)
- Ex situ and in situ applications

https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/ER18-1593
Regulatory Drivers

- PFAS are emerging contaminants
  - Lack of published health data
  - Unregulated at the Federal level
Regulatory Drivers

- In 2016, EPA finalized drinking water health advisories for PFOS and PFOA

![Chemical structures of PFOS and PFOA]

- Health advisories are not enforceable cleanup levels
- Limited trigger mechanisms to require cleanup

70 ng/L (combined)
Regulatory Drivers

• Recent EPA actions
  - National PFAS Leadership Summit (May 2018)
  - Community Events (June – September 2018)
  - PFAS Action Plan (February 2019)
  - April 2019: USEPA Draft Interim Recommendations to Address Groundwater Contaminated with PFOA and PFOS
    • Screening level of 40 ppt for PFOA or PFOS, individually
    • Preliminary Remediation Goals (PRGs) of 70 ppt for PFOA and/or PFOS in groundwater that is a current or potential source of drinking water, where no state or tribal MCL or other applicable or ARARs exist

• Multiple states have issued standards/guidance for PFOS and PFOA (and other PFAS)
States Adopting EPA’s Health Advisory Level

- As of Feb. 2019, 11 states have issued standards and guidance for PFOA and PFOS at EPA’s 70 ng/L health advisory level

Data Source: ITRC Table 4-1 Feb. 28, 2019
States Adopting Lower Levels than EPA

- **Minnesota (health based guidance value)**
  - 35 ng/L (PFOA)
  - 27 ng/L (PFOS)

- **Vermont (primary GW enforcement standard)**
  - 20 ng/L (PFOA)
  - 20 ng/L (PFOS)

- **New Jersey (MCLs)**
  - 14 ng/L (PFOA)
  - 13 ng/L (PFOS)

- **Interim Class II GW**
  - 10 ng/L (PFOA)
  - 10 ng/L (PFOS)

Data Source: ITRC Table 4-1 Feb. 28, 2019
States with Values for Other PFAS

- **Massachusetts**: Sum of 5 PFAS < 70 ng/L (June 2018)
- **Vermont**: Sum of 5 PFAS < 20 ng/L (2018)
- **TEXAS**: TCEQ set criteria for 10 PFAS besides PFOA and PFOS
- **New Jersey**: PFNA MCL 13 ng/L, Interim Class II GW 10 ng/L
- **North Carolina**: GenX assessment criterion (PFOA replacement)
- **Alaska**: Sum of 5 PFAS < 70 ng/L (Sept 2018)

Data Source: ITRC Table 4-1 Feb. 28, 2019
Guidelines and Standards (ng/L)

Data Source: ITRC Table 4-1 Feb. 28, 2019
Regulatory Status – California

• California State Water Resources Control Board Phased Investigation Plan (March 2019)
  • Phase I
    – Airports: 31 airports with training/fire response sites
      578 drinking water wells (2 mile radius)
    – Landfills: 252 Municipal solid waste landfills
      353 drinking water wells (1 mile radius)
  • Phase II
    – Source investigation and nearby drinking water well sampling at primary manufacturing facilities, refineries, bulk terminals and non-airport fire training areas, and 2017-2018 urban wildfire areas
  • Phase III
    – Source investigation and nearby drinking water well sampling at secondary manufacturing sites, wastewater treatment and pre-treatment plants, and domestic wells
Regulatory Status – California

Phase I

Issue Orders

March

60 days

Questionnaires Due

30 days

Workplans Due

July

30 days

Workplans Accepted

September

90 days

Results Due

http://waterboards.ca.gov/pfas
Legal Practice Trends

• Litigation due to alleged damages to water resources
  – PFAS manufacturers (e.g., MN, NC)
  – Product manufacturers (e.g., MI, GA)
  – AFFF manufacturers (e.g., NY)

• Cleanup
  – More enforcement is likely
  – Other issues include reopening closed sites

• Mitigation
  – Understanding existing and legacy operations is key including historical PFAS use
  – Replacement products
  – Mergers and acquisitions

• Insurance (coverage limitations and exemptions)
Legal Practice Trends

• Liability for releases will be challenging
  – PFAS groundwater plumes extend for several miles
  – Suburban and urban areas with multiple sources will result in complicated assessments
  – PFAS chemical forensics, discharge history and uses will be key

• PFAS are still present in and key to many industrial and consumer products
  – Best practices, minimizing risks and identifying alternatives
Summary

Perfect storm of environmental challenges

High toxicity and potential carcinogenicity

High persistence

Range of environmental mobility

Wide variety of high-volume releases

Complicated and expensive remediation
Summary

• What we know
  – Occurrence, fate, transport and toxicity of some PFAS
  – Limitations of conventional treatment systems

• What we want to know
  – Occurrence, fate, transport, toxicity of more PFAS
  – Potential for using new treatment methods

• What we don’t know
  – Assessment of alternatives to PFAS
  – Long-term, community and ecosystem effects
Key Take-Aways

- PFAS are more than PFOS and PFOA
- PFAS chemistry is complicated and mixtures are complex
- PFAS were produced for decades and used in large volumes = potential for reopening closed sites or creating new sites
- Multiple states have issued standards/guidance for PFOS and PFOA (and other PFAS) in the absence of enforceable cleanup standards
- Site investigation tools are available and sampling best practices are key
- Treatment is challenging and costly
- Liability for releases can be challenging
- The state of knowledge continues to evolve
Contact Information

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Regulatory Status

EPA’s PFAS Action Plan – February 2019

Drinking Water MCL
Cleanup GW/Soil
Toxics TRI/TSCA
Research
Enforcement
Risk Communication
Occurrence in Drinking Water

- PFAS detected above drinking water health criteria > 60 drinking water systems
  - EPA Unregulated Contaminants Monitoring program (UCMR3)
- Monitored 6 PFAS
  - PFOS
  - PFOA
  - PFBS
  - PFNA
  - PFHxS
  - PFHpA

Coal Ash: Designing a State Program

Jane E. Montgomery
Schiff Hardin LLP
Regulating Coal Ash a Long-standing Issue

• Bevill Waste under RCRA
• Studies and determinations in the 1990s and 2000s
• 2010 Proposal with Sub C and Sub D options
• 2015 Final Rule
  • Sub D
  • Self-implementing; not a permit program
  • Based on MSWL but “minimum nationwide criteria”
• December 2016 WIIN Act (Water Infrastructure Improvements for the Nation Act) authorizes state permit program
• Cases, Reconsideration, Rule Amendments, Guidance
Nationwide Criteria

• What *exactly* does this mean?
  • No real definition
  • Technical criteria? Performance criteria? Procedural steps? All?
  • Not required to be “identical”

• “No reasonable probability of adverse effects on health or the environment from the disposal of solid waste”
  • or “address all reasonable probabilities of adverse effects”

• Conservative because they must be protective of all sites, even the most vulnerable
  • What can a state modify?
If Only the Statute Were Written Differently

• Extensive analysis and discussion in both preambles
  • Focus on lack of Congressional authorization to require oversight and permit program
  • WIIN Act changes all of that
• EPA chose the most conservative criteria possible due to lack of oversight
• With state oversight possible, how should EPA and states respond?
Possible Advantages of State Programs

• Permits allow for closer state monitoring of actions and impacts
• Use site-specific factors
• Allow use of risk in corrective measures decisions
• Alternative points of compliance, groundwater management zones
• Allow use of institutional controls (AULs, covenants, restrictions)
• Add or drop monitoring wells and/or constituents in response to site conditions
• Determine remediation is not necessary if factors met or progress stalled and not likely to change
• Public can participate on a more informed basis
Should states adopt or not?

• Solid waste management a state and local function
• Devise programs to meet state-specific conditions and needs
  • “EPA has no role in the planning and direct implementation of the minimum national criteria or solid waste programs under RCRA subtitle D, and has no authority to enforce the criteria.” 80 Fed. Reg. 21301, 21310
• EPA “strongly encourages” development of solid waste programs
  • But do they really?
  • If states do not, federal standards designed to be self-implementing, e.g., facility directly responsible for implementation
• EPA must review and approve
  • State plan meets the minimum nationwide criteria
• Possible need for state legislative authority or direction
What are some impediments?

• Deadlines for much of Part 257 are passing
• Studies and closure announcements were made and posted this past February
• Work to stop accepting CCR has started but takes some time to:
  • prepare new disposal sites
  • change over wet to dry handling and separating waste streams where necessary
  • build new water treatment if required by ELG or other
• Public outcry around changes to rule
  • Want both self-implementing and state oversight
  • Do not understand risk-based closure
Enforcement Authority: Part 257 vs. WIIN

**Part 257**
- Citizen suit enforcement §7002 or imminent and substantial endangerment
- Notifications and facility record
  - Justified as necessary for EPA to say there is “no reasonable probability of adverse effects”
  - Notifications form the basis that *someone* will notice adverse effects

**WIIN**
- WIIN Act allows direct enforcement via §3007, 3008
- State programs must adopt enforcement mechanisms

The frailties noted in the preambles are resolved by state oversight and permits. So what happens when state does oversee? Don’t we trust states?
State Flexibilities

Proposed or Adopted by EPA
• “as protective as”
• State director review rather than engineer
• Suspend groundwater monitoring if no potential for migration*
• Alternative groundwater protection standards for non-MCLs*
• Remediation not necessary under certain facts
• Alternative time for completion of remedy
• Alternative time to cease receiving waste and initiate closure*
• Posting data on state website rather than private site
• Technical certificates instead of PE certificates

Requested by O/O
• Grant more time for closure
• Liner performance standard
• Amending closure plan
• Point of compliance
• Leak detection systems
• Site specific conditions
• Alternative final cover
• Performance standard for fugitive dust rather than technical standard
Questions?
SESSION V

Highlight on EPA Enforcement

Leverett “Rett” Nelson
Regional Counsel
U.S. EPA Region 5

Rett Nelson has been the Regional Counsel for U.S. EPA Region 5 since 2015. The Office of Regional Counsel (ORC) in Chicago employs approximately 90 lawyers who provide counsel and represent the Agency in numerous civil and criminal matters under the Clean Air Act, the Clean Water Act, Superfund, the Safe Drinking Water Act, and so on— in both judicial and administrative fora. Mr. Nelson first joined ORC in 1985, focusing on hazardous waste issues.

In addition to his work at U.S. EPA, Mr. Nelson taught environmental law to paralegals at Loyola University in Chicago from 2003 to 2014. He is also a past Adjunct Professor of Environmental Law at the DePaul University College of Law. Mr. Nelson is also the immediate past Chair of the Board of Directors of the Aldo Leopold Foundation, Inc.

Mr. Nelson is a member of the Bar in both Colorado and Illinois. He received his law degree from the University of Colorado, and his B.A. (cum laude) from Carleton College. Before law school, Mr. Nelson worked for the U.S. Geological Survey, Water Resources Division, in Denver. He speaks frequently on environmental issues.

Jennifer Lynn
Special Agent in Charge
Criminal Investigation Division
U.S. Environmental Protection Agency

Jennifer Lynn is the Special Agent in Charge of CID’s Regions 3 and 5 Area Offices in Philadelphia and Chicago. In Region 5, Jennifer supervises criminal investigations throughout Illinois, Indiana, Ohio, Minnesota and Wisconsin. She began her law enforcement career with EPA in 2002 with the Office of Inspector General. In 2010, Jennifer transferred to the Criminal Investigation Division in Philadelphia.

Jennifer holds a Bachelor of Science degree with a major in Accounting from Rutgers University School of Business.

Before joining EPA, Jennifer worked in various financial positions in the private sector.

David Mucha
Regional Criminal Enforcement Counsel
Office of Regional Counsel
U.S. EPA Region 5

David P. Mucha, Regional Criminal Enforcement Counsel, U.S. Environmental Protection Agency (U.S. EPA), Region 5, Chicago, Illinois. He provides legal counsel to U.S. EPA’s Criminal Investigation Division in the Chicago Area Office, which includes special agents who investigate environmental crimes in Ohio, Michigan, Indiana, Illinois, Wisconsin, and Minnesota. He has held appointments as a Special Assistant United States Attorney in the Eastern District of Michigan, the Northern District of Illinois and the Northern and Southern Districts of Indiana, where he has assisted in the prosecution of environmental crimes. He currently coordinates the Northern District of Indiana Environmental Crimes Task Force, which brings together federal, state and local law enforcement resources to investigate and prosecute environmental crimes in that district. He has practiced environmental law at U.S. EPA for 28 years and has broad experience in civil as well as criminal enforcement of federal environmental laws. J.D. Indiana University, Maurer School of Law-Bloomington (1991); B.S. Political Science, Kent State University (1988).
YP BREAKOUT SESSION

Project Management for an Environmental Audit

Participants will complete four hands-on tasks involved with managing an environmental audit project. After completing the session, participants will have experience developing a scope of work, providing a client with a schedule and budget, communicating with plant personnel and delivering audit results to the client.