

WATER ENVIRONMENT FEDERATION

# Odors and Air Pollutants 2018

## **Draft Technical Program**

(Updated: November 30, 2017)

**March 25 – 28, 2018**

**Oregon Convention Center**

**Portland, Oregon**

## **Pre-Conference Workshop**

**Sunday, March 25th**

**1:30 PM - 5:00 PM**

(Separate registration fees apply)

### **Workshop A: Procedures for Field Inspection of Odors in Ambient Air**

This workshop will discuss the procedures for characterizing odors in ambient air. The European Committee for Standardization (CEN) has issued final endorsement of an approach of determining odor exposure in ambient air using two approaches, the grid method and the plume method. The grid method uses direct assessment of ambient air by panel members to characterize odor exposure in a defined assessment area. The plume method describes the extent to which an downwind odor plume may persist from a source.

The workshop will first review aspects of ambient odor assessment including the determination of odor frequency, intensity, duration and offensiveness (FIDO). Basic methods that have been used to quantify will be reviewed. Finally the procedures defined by the CEN standard (EN-16841) will be discussed.

## **Opening General Session**

**Mon, 3/26 8:30 AM – 10:00 AM**

Full details on the Opening General Session agenda will be provided in the coming weeks.

## **Session 01: Odor Measurement I**

**Mon, 3/26 10:45 AM – 11:45 AM**

### **10:45 AM**

New Concept and New Results for Instrumental Measurement Of Odorous Compounds

Jean-Michel Guillot, IMT Mines-Ales

### **11:15 AM**

Odor Threshold Determination: A review of the effect of number of assessors

Michael McGinley, Charles McGinley, Kirsten Weiss, St. Croix Sensory, Inc.

### **Alternate**

How Reduced Sulfur Compounds in Trunkline Foul Air Vary Over Diurnal Fluctuations at OCSD Wastewater Treatment Plant

Tadeo Vitko, Orange County Sanitation District

## **Session 02: Community**

**Mon, 3/26 10:45 AM – 11:45 AM**

### **10:45 AM**

Odor Control: A Journey of 14 Years

John Bennet, Trinity River Authority

### **11:15 AM**

In the World of Odor Control - The Community Rules

Richard Pope, Hazen and Sawyer

### **Alternate**

Orange County Sanitation District's proactive strategies for reducing odor complaints

Reza Sobhani, Brian Reed, Marcopolo Velasco, Christina Thomas, Orange County Sanitation District

## **Session 03: Innovative Solutions**

**Mon, 3/26 1:30 PM – 3:00 PM**

### **1:30 PM**

Influence of Biosolid Processing On The Production Of Odorous Emissions From Wastewater Treatment Plants

Richard Stuetz, Ruth Fisher, Juan Pablo Alvarez-Gaitan, James Hayes, UNSW

### **2:00 PM**

Food Waste Impact Study - Sewer Process Modelling for Future Options Assessment

C. Ransom, Bart Kraakman, G. Kedan, B. Johnson, City of Los Angeles

### **2:30 PM**

The Balance Between Lean Burn Anaerobic Digestion Power Production, Formaldehyde Formation, and Public Health Concerns

Michael Lannan, Katherine Mears, Tim Jones, Tech Environmental

### **Alternate**

Optimizing Hydrogen Peroxide Dosing for Odor Control Originating from Septage Hauler Dumping Area at the Kenosha Water Utility's, Wastewater Treatment Plant

Brandon Sotiroff, Michael Nelson, USP Technologies; Melissa Arnot, Clark Dietz Inc.; Katrina Karow, City of Janesville

## **Session 04: Problems & Solutions I**

**Mon, 3/26 1:30 PM – 3:00 PM**

### **1:30 PM**

Using WATS Sewer Process Model for Project Pre-Design

Guo Ji Chiu, Nohemy Revilla, San Francisco Public Utilities Commission; Jes Vollertsen, Aalborg University

### **2:00 PM**

City Of Los Angeles Pilot Test On A Suspended Carbon Vessel Design

Cyrous Gilani, Hamed Haddad-Zadegan, Ali Poosti, Adel Hagekhalil, City of Los Angeles

### **2:30 PM**

The Pressure Is On - Enforceable Odor Limits

Anders Wistrom, Jack Delin, Scandinavian Centriair

### **Alternate**

Hydrogen Sulfide Control in Wastewater Ponds Using Strategic Dosing of Hydrogen Peroxide at Southern Minnesota Beet Sugar Cooperative

Michael Nelson, USP Technologies; Sagar Sunkavalli, Southern Minnesota Beet Sugar Cooperative

## **Session 05: Research & Optimization I**

### **Mon, 3/26 3:45 PM – 4:45 PM**

#### **3:45 PM**

Testing the DMS Capacity of Specialized Adsorptive Media

Ryan McKenna, Hazen and Sawyer; Matthew Ward, CH2M; Eyasu Yilma, DC Water

#### **4:15 PM**

Siloxane Removal in PCO Air Purifiers

Alba Cabrera-Codony, Eric Santos Clotas, Maria J Martin, Universitat de Girona

#### **Alternate**

Smart Technologies for Odor Monitoring And Control

Vincenzo Naddeo, Tiziano Zarra, Vincenzo Belgiorno, University of Salerno, Fisciano, Salerno

## **Session 06: Utility Management**

### **Tue, 3/27 8:30 AM – 10:00 AM**

#### **8:30 AM**

Odor Practices in the Collection System and WRRF: Results from the 2016 Odor Benchmarking Survey

Carla Dillon, City of El Monte; Dennis Froehlich, Pima County Ww Management; Ray Porter, ODOTTECH; Mark Holstad, City of Albuquerque

#### **9:00 AM**

El Paso Implements Odor Control Improvements to Remain a “Good Neighbor”

Richard Pope, Anthony Chacon, Hazen and Sawyer

#### **9:30 AM**

Odor Capture Performance - A Design, Commissioning and Operational Tool for Ventilation and Cover Systems

Bart Kraakman, Josef Cesca, Graeme Hamer, Jay Witherspoon, CH2M HILL

#### **Alternate**

How To Boil Down OCSD's Odor Control Master Plan Into One Page

Tadeo Vitko, Orange County Sanitation District

## **Session 07: Problems & Solutions II**

### **Tue, 3/27 8:30 AM – 10:00 AM**

#### **8:30 AM**

Odor Control Scrubber System Planning and Design with Limited Source Specific Data  
Dirk Apgar, King County

#### **9:00 AM**

The District of Barriere, British Columbia Implements an Innovative Hydraulic Odor Control System  
Richard St Aubin, IPEX USA LLC.; Doug Borrill, District of Barriere

#### **9:30 AM**

Wait, Why Do I Need Odor Control at a Farm-Based Digester Project?  
Michael Lannan, Matthew Riegert, Tech Environmental

#### **Alternate**

Implementing an Odor Control Program for a Centralized Sludge Processing and Loading Facility  
James McMillen, Perkins Engineering Consultants, Inc.; Toshio Shimada, Carollo Engineers; Bill Gase, City of Garland

## **Session 08: Research & Optimization II**

### **Tue, 3/27 10:45 AM – 11:45 AM**

#### **10:45 AM**

Identification Of Musty Odor Nuisance At Wastewater Treatment Plants  
Yubin Zhou, UCLA; Tadeo Vitko, Orange County Sanitation District; Mel Suffet, UCLA

#### **11:15 AM**

Effects of Diurnal Ph Variation In Sewer Process Modeling  
Muriel Steele, Matthew Ward, CH2M; Jes Vollertsen, Aalborg University

#### **Alternate**

Examination of the Kinetic and Stoichiometric Reaction of the Oxidation of Hydrogen Sulfide and Ozone using a Fine Mist Nozzle Technology  
Thoram Charanda, Guardian Research & Development Laboratory

## **Session 09: Vapor Phase Odor Control**

### **Tue, 3/27 1:30 PM – 4:45 PM**

#### **1:30 PM**

Multiple Technology Pilot Testing Supports Selection of Targeted Foul Air Treatment  
Scott Cowden, Jay Witherspoon, Zeynep Erdal, CH2M; Carla Dillon, City of El Monte;  
Tadeo Vitko, Orange County Sanitation District; Mel Suffet, Yubin Zhou, UCLA; Sam  
Boswell, Daniel Mechanical

#### **2:00 PM**

Performance of A Combined Two-Stage Biotower And Carbon System: When Great Is Not  
Quite Good Enough  
Christopher Easter, HDR; Mark Feltner, Chris Wilson, HRSD

#### **2:30 PM**

Biotrickling Filtration of Sewage Plant Exhausts – Recirculation versus Once-through Irrigation  
Derek Webb, Hidayat Husain, Caleb Olesen, Biorem Technologies, Inc.

#### **3:45 PM**

Miniaturized Biotrickling Filters for Process Intensification Of Indoor Air VOC Treatment  
Luis Lopez De Leon, Kelsey Deaton, Marc Deshusses, Duke University

#### **4:15 PM**

Activated Carbon as A Support In Biotrickling Filters For The Removal Of Siloxanes In Sewage  
Sludge Biogas  
Eric Santos Clotas, Alba Cabrera-Codony, Maria J Martin, Universitat de Girona

#### **Alternate 1**

Utilization of Bio-Trickling Filters For a Cold Climate Biosolids Foul Air Application  
Sean Trainor, Evoqua Water Technologies; Colton Stiles, CH2M Canada Ltd.

#### **Alternate 2**

Two-Stage Biological Odor Control System Treats WWTP Headworks Exhaust Air  
Chester Morton, Clean Air & Water Engineering; Tom Card, Environmental Management  
Consulting; Matthew Smith, Strand Associates, Inc.; Wes Merkle, Clay Township  
Regional Waste District

## **Session 10: Odor Measurement II**

### **Tue, 3/27 1:30 PM – 3:00 PM**

#### **1:30 PM**

Trickling Filters (Secondary) Foul Air Treatment with Chemical Scrubbers  
May Kyi, Richard Birdsell, OCSD

#### **2:00 PM**

Odor Investigations - What Equipment Do I Need and What Will the Data Mean?  
Richard Pope, Hazen and Sawyer

#### **2:30 PM**

Odour Strength - The Forgotten Odour Parameter  
Charles McGinley, McGinley Associates; Monika Paduch, retired; Carlos Diaz, Olores

#### **Alternate 1**

Relationship Between Hydrogen Sulphide And Odour Units for London Sewage  
Sofia Georgaki, Rodrigo Baur, David Crawford, CH2M/TIDEWAY; Dejan Vernon,  
Thames Water; Donal Black, CH2M/TIDEWAY; Bill Desing, CH2M

## **Session 11: Corrosion**

### **Tue, 3/27 3:45 PM – 4:45 PM**

#### **3:45 PM**

Condition Assessment Practices for FRP Odor Control Ductwork and Equipment in Wastewater  
Treatment Plants  
Douglas Sherman, Randy Nixon, Corrosion Probe, Inc.

#### **4:15 PM**

Pumping a splash? It's a gas(-gas-gas)! Is your force main vulnerable to interior corrosion?  
Daniel Porter, Brown and Caldwell; Mark Feltner, HRSD

#### **Alternate**

Converting an Odor Control Plan to a Corrosion Control Plan  
Elsa Wright, Vaughan Harshman, Evoqua Water Technologies; Nickolas Wagner,  
Manatee County Government



## **Session 12: Collection Systems**

**Wed, 3/28 8:30 AM – 11:15 AM**

### **8:30 AM**

Portable Odor Control - A Solution to Wastewater Treatment Construction Project Odor Problems in Albuquerque

Neil Webster, Webster Environmental Assoc.; Jon Ertsgaard, Albuquerque Bernalillo County Water Authority; Bruce Koetter, Webster Environmental Assoc.; Phil Parkins, Carollo

### **9:00 AM**

Sewage Trunk Sewer Odor Control System Design Approach & Validation with CFD and Air Sampling Program

Alexandru Carciumaru, AECOM Canada Ltd

### **9:30 AM**

Case Studies for the Implementation of Ventilation Strategies Using New Ventilation Modelling Tools

Josef Cesca, Graeme Hamer, CH2M

### **10:15 AM**

Town of Cary, NC. Preventing a collection system odor issue—from concept through final performance test and beyond

Philip Wolstenholme, Brown and Caldwell; Jarrod Buchanan, Town of Cary, NC

### **10:45 AM**

Understanding Mechanisms and Sources Of Odors In Resource Recovery Facilities: Impact Of Collection System, Primary And Secondary Treatment

Ulrich Bazemo, University of Maryland College Park; Adrian Romero, CH2M; Haydee De Clippeleir, Ahmed Al-Omari, Amber Spriggs, DC Water; H el ene Hauduc, Imre Takacs, Dynamita; Alba Torrents, University of Maryland; Matthew Higgins, Bucknell University; Sudhir Murthy, DC Water

### **Alternate 1**

Odor Control Challenges in a Combined Sewer Collection System with Manhole Inserts

Guo Ji Chiu, Nohemy Revilla, San Francisco Public Utilities Commission

### **Alternate 2**

Odor Control Using Pure Oxygen, Raymore, MO

David Clidence, Eco2Tech; Kenton Newport, HDR Engineering, Inc

## **Session 13: Emissions & Modeling**

**Wed, 3/28 8:30 AM – 11:15 AM**

### **8:30 AM**

New GHG Methodology to Estimate/Quantify Sewer Methane

John Willis, Brown and Caldwell; William Brower, Sudhir Murthy, DC Water; Chris Peot, DC Water & Sewer Authority; Pusker Regmi, Brown and Caldwell; Keshab Sharma, Zhiguo Yuan, Advanced Water Management Center

### **9:00 AM**

Comparison of Characterization Techniques for Wastewater Treatment Plant Odor Evaluations

Phyllis Diosey, Hazen and Sawyer

### **9:30 AM**

Proactively Monitoring and Managing Odors using Real-Time Odor Plume Prediction

Charlotte Smith, Perkins Engineering Consultants, Inc.; Steven Daniels, Trinity River Authority

### **10:15 AM**

WATS Sewer Process Model as a tool for Construction Projects Alternative Selection

Nohemy Revilla, Guo Ji Chiu, San Francisco Public Utilities Commission; Jes Vollertsen, Aalborg University

### **10:45 AM**

Using Odor Panel Data to Enhance Dispersion Modeling: A New Approach to Calibration

David McEwen, Brown and Caldwell; Charles McGinley, St Croix Sensory Inc

### **Alternate 1**

Assessment of Odor Emissions at a Municipal WWTP in the Middle East

Timur Dunaev, Louis LeRoux, Bioair Solutions LLC

### **Alternate 2**

Understanding the Uncertainties of Continuous Odor Measurement, Modeling and Impact Assessment

Raymond Carl Porter, Porter Odor Science