



# AIR & WASTE MANAGEMENT ASSOCIATION

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*Cooperation  
for a Better Environment*

**95th Annual Conference and Exhibition | June 23-27, 2002**



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## Technical Program

### Monday, June 24, 2002

#### AB-1b Paper

*PM Chemical & Physical Characterization: Field Studies & Instrumentation*

Sponsoring Committees: AB-1 EE-1

Chair: Michael B. Meyer, Rupprecht & Patashnick

Co-Chair: Kenneth P. Stubbs, Greater Vancouver Regional District

#### 1:30 p.m. Paper #: 42563

***Ultrafine Particle Number Concentrations And Size Distributions Of Diesel, Natural Gas, And Trap-Equipped Diesel Transit Buses Measured With An Electrical Low Pressure Impactor***

Authors:

Yingge QU, University of Connecticut Environmental Engineering Program, Civil & Environmental Engineering

Britt Holmen, University of Connecticut Environmental Engineering Program, Civil & Environmental Engineering

#### 1:55 p.m. Paper #: 42675

***Comparison Of Speciation Sampler And PC-Boss Results Obtained On The Wasatch Front During The Winter Of 2001-2002***

Authors:

Cory B. Carter, Brigham Young University, Chemistry and Biochemistry

Russell W. Long, Brigham Young University, Chemistry and Biochemistry

Norman L. Eatough, Brigham Young University, Chemistry and Biochemistry

Delbert J. Eatough, Brigham Young University, Chemistry and Biochemistry

Neal Olson, Utah State Department Of Environmental Quality, Air Monitoring Division

William E. Wilson, US Environmental Protection Agency

#### 2:20 p.m. Paper #: 42849

***Ambient concentration of particulate Polycyclic Aromatic Hydrocarbons(PAHs) and their dry deposition in Korea***

Authors:

Ji Yi Lee, Department of Environmental Science and Engineering Ewha Womans University

Yong Pyo Kim, Department of Environmental Science and Engineering Ewha Womans University

Seung Muk Yi, Department of Environmental Science and Engineering Ewha Womans University

Young Ji Han, Department of Environmental Science and Engineering Ewha Womans University

#### 2:45 - 3:45 Break and Exhibition Viewing

#### 3:45 p.m. Paper #: 42858

***Charaterization of PM10 and PM2.5 Source Profiles for Soil and Paved Road Dust in Hong Kong***

Authors:

Shun-cheng Lee, Hong Kong Polytechnic University

Kin-Fai Ho, Hong Kong Polytechnic University

#### 4:10 p.m. Paper #: 42992

***Characterization of Fine Particulate Matter at Schools in Ohio***

Authors:

Amol R. Kulkarni, Texas A&M University- Kingsville, Environmental Engineering  
 Sunil Kumar, Texas A&M University- Kingsville, Environmental Engineering  
 Kuruvilla John, Texas A&M University- Kingsville, Environmental Engineering  
 Kevin Crist, Ohio University Health Sciences

**4:35 p.m. Paper #: 43206**

***Charring Characteristics Of Atmospheric Organic Particulate Matter In Thermal Analysis***

Authors:

Jianzhen Yu, Hong Kong University of Science & Technology  
 Jinhui Xu, Hong Kong University of Science & Technology  
 Hong Yang, Hong Kong University of Science & Technology

**5:00 p.m. Paper #: 45411**

***Particulate Matter and Associated Polycyclic Aromatic Hydrocarbons in Bangkok***

Authors:

Pajaree Thongsanit, Chulalongkorn University  
 Wanida Jinsart, Chulalongkorn University  
 Beverley Hooper, Monash University  
 Wongpun Limpaseni, Chulalongkorn University  
 Martin Hooper, Monash University

**Session Adjourns**

**AB-2b Paper**

*Advances in Laboratory and Field Measurements*

Sponsoring Committees: AB-2 AB-1 AM-3

Chair: Barbara Zielinska, Desert Research Institute

Co-Chair: Tom Dann, Environment Canada

**1:30 p.m. Paper #: 41757**

***The Central California Ozone Study: Analysis of Actinic Flux Measurements***

Authors:

William R Stockwell, Desert Research Institute  
 Wendy S Goliff, Desert Research Institute  
 Dongchul Kim, Desert Research Institute

**1:55 p.m. Paper #: 42098**

***Effects of Long-Term Storage on Samples Collected on Tenax-TA***

Authors:

Wendy Goliff, Desert Research Institute  
 Barbara Zielinska, Desert Research Institute

**2:20 p.m. Paper #: 42196**

***Volatile Organic Compounds In Landfill Gas At The Colombian Biggest Municipal Waste Disposal Site***

Authors:

Sandra Estévez, University of Los Andes, Engineering Civil & Environmental  
 Ingrid Hincapié, University of Los Andes, Engineering Civil & Environmental  
 Eugenio Giraldo, University of Los Andes, Engineering Civil & Environmental

**2:45 - 3:45 Break and Exhibition Viewing**

**3:45 p.m. Paper #: 42265**

***Issues Related to Benzene in Eastern Montreal (Quebec) Canada***

Authors:

Andre Germain, Environment Canada  
 Jacques Rousseau, Environment Canada  
 Tom Dann, Environment Canada

**4:10 p.m. Paper #: 42317**

***Adsorption Of Aromatic Hydrocarbon Vapors At The Gas-Solid And Gas-Water Interface***

Authors:

Suresh Raja, Louisiana State University, Chemical Engineering  
 Frank Yacone, Louisiana State University, Chemical Engineering  
 Raghunathan Ravikrishna, Louisiana State University, Chemical Engineering  
 Kalliat T. Valsaraj, Louisiana State University, Chemical Engineering

**4:35 p.m. Paper #: 42565**

***Chemical Characterization of Exhaust Emissions from Heavy Duty Diesel Vehicles***

***Using Low Sulfur Fuel and Equipped with Particle Filters***

Authors:

Barbara Zielinska, Desert Research Institute

John Sagebiel, Desert Research Institute

Miriam Lev-On, British Petroleum

Chuck LeTavec, British Petroleum

Gregory J. Thompson, West Virginia University

Teresa Alleman, National Renewable Energy Laboratory

**5:00 p.m. Paper #: 42877*****Monitoring of Toxic Substances in Ontario - Great Lakes Basin (1990 - 2001)***

Authors:

Tom Dann, Environment Canada

**5:25 p.m. Paper #: 43022*****Collection And Analysis Of Airborne Carbonyls By On-Sorbent Derivatization and Thermal Desorption***

Authors:

Steven S.H. Ho, Hong Kong University of Science &amp; Technology

Jianzhen Yu, Hong Kong University of Science &amp; Technology

**Session Adjourns****AB-3c Paper*****Applications of Short-Range Dispersion Models - Innovative Approaches and Lessons Learned***

Sponsoring Committees: AB-3

Chair: Robert L. Miller, Oak Ridge Nat'l Lab

Co-Chair: Ron Peterson, Cermak Petersen Petersen Inc.

**1:30 p.m. Paper #: 41844*****A Screening Evaluation of Glutaraldehyde Deposition from Cooling Tower Drift***

Authors:

David McCready, Dow Chemical Company

Donald Fontaine, Dow Chemical Company

**1:55 p.m. Paper #: 42897*****New Methods on Probabilistic Dispersion Modeling***

Authors:

Anand Yegnan, University of Alabama Tuscaloos, Civil and Environmental Engineering

Derek Williamson, University of Alabama Tuscaloos, Civil and Environmental Engineering

Andrew Graettinger, University of Alabama Tuscaloos, Civil and Environmental Engineering

**2:20 p.m. Ethics Moment*****Model Developer Takes Shortcut*****2:45 - 3:45 p.m. Break and Exhibition Viewing****3:45 p.m. Paper #: 42916*****Modification of a Mesoscale Atmospheric Model for Simulation of Airflow Around Buildings***

Authors:

Ted Yamada, Yamada Science &amp; Art Corporation

**4:10 p.m. Paper #: 43115*****Comparison of ISC-Prime and Wind Tunnel Results***

Authors:

Sharon Schajnoha, RWDI

John Alberico, RWDI

Michael Ratcliff, RWDI

David S. Chadder, RWDI

**Session Adjourns****AB-7b Panel*****Indoor Air Quality Instrumentation and Monitoring Workshop***

Sponsoring Committee: AB-7

Chair: Vicken Etyemezian, Desert Research Institute

Co-Chair: Melissa Cheszek, The Chelsea Group, Ltd.

**Panel begins at 1:30 p.m.**

## Panelists:

Gregory M. Olson, Jr., TSI Incorporated

Melissa Cheszczek, The Chelsea Group, Ltd.

**AE-1c Panel***Results from Full-Scale Mercury Control Testing: Overview and Panel Discussion*

Sponsoring Committee: AE-1

Chair: Sharon Sjostrom, Apogee

Co-Chair: C. Jean Bustard, ADA-ES

Panel will begin at 1:30 p.m.

1:30 p.m. Travis Starns, ADA-ES: Full Scale Tests of Mercury Control with Sorbent Injection and an ESP at Wisconsin Electric's Pleasant Prairie Power Plant

1:55 p.m. Kevin Reddinger, B&amp;W: What Levels of Mercury Control Can Be Expected from Scrubbers in Different Configurations

2:20 p.m. Lynn Brickett, DOE NETL: The Impact of Mercury Control on Byproduct Reuse and Disposal

## Panelists:

· Larry Monroe, Southern Company: Overview of MACT regulations and variations in Gaston long term Hg removal

· Terry Coughlin, Wisconsin Electric: Overview of plans for mercury control on existing and new plants

· Rob LaCount, PG&amp;E National Energy Group: Overview of State regulations and PG&amp;E efforts to meet these by 2006.

· Scott Renninger, NETL: NETL plans for continued evaluation of full-scale mercury removal.

· George Offen, EPRI: EPRI's perspective on areas that need additional testing and why.

**AE-2cA Paper****Biological Techniques for APC**

Sponsoring Committees: AE-2

Chair: Sergio Revah

Co-Chair: Todd Webster

**1:30 p.m. Paper #: 43167*****Kinetic Evaluation Of H<sub>2</sub>s And Ammonia Biofiltration For Air Emissions Control***

## Authors:

Kim Jones, Texas A&amp;M University- Kingsville, Environmental Engineering

Alvaro Martinez, Texas A&amp;M University- Kingsville, Environmental Engineering

Ketankumar Maroo, Texas A&amp;M University- Kingsville, Environmental Engineering

Sonali Deshpande, Texas A&amp;M University- Kingsville, Environmental Engineering

Jim Boswell, Bioreaction Industries LLC

**1:55 p.m. Paper #: 42688*****H<sub>2</sub>S Removal By Compost Biofiltration: Media Mixing Effects On Operational Factors***

## Authors:

Juan Manuel Morgan-Sagastume, Institute of Engineering, National University of Mexico, Environmental Bioprocesses

Sergio Revah, Department of Chemical Engineering, UAM-I

Adalberto Noyola, Institute of Engineering, National University from Mexico

**2:20 p.m. Paper #: 43558*****Biotrickling Filters for Odor Treatment at POTWs: Full-scale experience with Converted Scrubbers***

## Authors:

David Gabriel, Chemical and Environmental Engineering Department, University of California

Huub Cox, Chemical and Environmental Engineering Department, University of California

Jeffrey Brown, Orange County Sanitation District, Air Quality and Special Projects Division

Edward Torres, Orange County Sanitation District, Air Quality and Special Projects Division

Marc A. Deshusses, Chemical and Environmental Engineering Department, University of California

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**3:45 p.m. Paper #: 41881*****Odor Control Efforts at a Soybean Processing Facility***

Authors:

Matthew Traister, ENSR

Derek Henderson, ENSR

**4:10 p.m. Paper #: 42950*****High Concentration BTEX Removal In Compost Biofilters***

Authors:

Alvaro Martinez, Texas A&amp;M University- Kingsville, Environmental Engineering

William Tamara, Instituto Colombiano Del Petroleo

**4:25 p.m. Paper #: 43170*****Investigation Of A Polyurethane Foam Biofilter: Effect Of Operating Mode And Nutrient Supply***

Authors:

Jungsu Park, University Of Texas At Austin

Kerry Kinney, University Of Texas At Austin College Of Engineering, Civil Engineering

William Moe, Louisiana State University, Department Of Civil &amp; Environmental Engineering

**Session Adjourns****AE-2e Paper***Case History Review of RTO Retrofits to Optimize Unit Operations*

Sponsoring Committees: AE-2

Chair: Howard Hohl, Eisenmann Corp.

**1:30 p.m. Paper #: 42959*****CASE HISTORY: RTO Thermal Efficiency, What Does The Phrase Really Mean?***

Authors:

Howard Hohl, Eisenmann Corporation

**1:55 p.m. Paper #: 43176*****Improving The Performance Of A Rotary Concentrator Thermal Oxidizer VOC Abatement System For Removal Of Solvent Vapors From Semiconductor Manufacturing Exhaust***

Authors:

Russell J. Seguin, Advanced Micro Devices, EHS

**2:20 p.m. Paper #: 43533*****Development of Improved Ceramic Heat Transfer Media For RTO's***

Authors:

John Reid, Saint-Gobain NorPro

**Session Adjourns****AM-5a Paper***Data Analysis and Pollution Trends*

Sponsoring Committees: AM-5

Chair: Lara A. Autry, U.S. EPA

Co-Chair: Christopher Rogers, Harding ESE

**3:45 p.m. Paper #: 54943*****National Urban Air Toxics Monitoring Program 1987 through 2001***

Authors:

Julie L. Swift, Eastern Research Group

Dave-Paul Dayton, Eastern Research Group

Jason M. Huckaby, Eastern Research Group

Joan T. Bursey, Eastern Research Group

**4:10 p.m. Paper #: 45357*****Emission Trends of VOC and NOx in Delaware Rate-of-Progress Planning and Periodic Emission Inventories***

Authors:

Frank F. Gao, Air Quality Section, DAWM-DNREC

John L. Otten, Air Quality Section, DAWM-DNREC

David F. Fees, Air Quality Section, DAWM-DNREC

**4:35 p.m. Paper #: 45499*****Evaluation of the Long-Term Air Quality Trends in Ohio***

**Authors:**

Myoungwoo Kim, Texas A&M University- Kingsville, Environmental Engineering  
 Sunil Kumar, Texas A&M University- Kingsville, Environmental Engineering  
 Kuruvilla John, Texas A&M University- Kingsville, Environmental Engineering  
 Kevin Crist, Ohio University/Ohio University, School of Health Sciences

**5:00 p.m. Paper #: 45498*****Meteorological Influences on the Fine Particulate Matter Distribution in Central Ohio*****Authors:**

Ileesuck Jung, Texas A&M University- Kingsville, Environmental Engineering  
 Sunil Kumar, Texas A&M University- Kingsville, Environmental Engineering  
 Kuruvilla John, Texas A&M University- Kingsville, Environmental Engineering  
 Kevin Crist, Ohio University, School of Health Sciences

**Session will continue on Tuesday****AM-6b Paper*****Emissions & Control From Agricultural Sources***

Sponsoring Committees: AM-6 AM-1

Chair: Terry Black, Pennsylvania DEP

Co-Chair: Ron Berglund, Terracon

**1:30 p.m. Paper #: 43068*****Validation Of A Coupled Mass Transfer With Chemical Reactions Model For Ammonia Flux Across A Gas-Liquid Interface*****Authors:**

Heather L. Arkinson, North Carolina State University, Department of Marine, Earth and Atmospheric Sciences  
 Viney P. Aneja, North Carolina State University, Department of Marine, Earth and Atmospheric Sciences

**1:55 p.m. Paper #: 43080*****Measurement and Modeling of Ammonia Flux and Dry Deposition Velocity from Near-Surface Concentration Gradient Measurements over Natural Surfaces in North Carolina*****Authors:**

Sharon Baker Phillips, North Carolina State University North Carolina State University, Marine, Earth, and Atmospheric Sciences  
 S. Pal Arya, North Carolina State University North Carolina State University, Marine, Earth, and Atmospheric Sciences  
 Viney Pal Aneja, North Carolina State University North Carolina State University, Marine, Earth, and Atmospheric Sciences  
 Bok-Haeng Baek, NCSU North Carolina State University, MEAS

**2:45 - 3:45 p.m. Break and Exhibition Viewing****3:45 p.m. Paper # 55555*****Dust Emission Measurements of Barge/Vessel Grain Handling Operations (An EPA/Industry Cooperative Effort)*****Authors:**

Gregory E. Muleski, Midwest Research Institute  
 Chatten Cowherd, Jr., Midwest Research Institute  
 Thomas O'Connor, National Grain and Feed Association

**4:10 p.m. Paper #: 77777*****Estimation of Equilibrium Time Constant for Gas-to-Particle Conversion Based on Observational Analysis*****Authors:**

Bok Haeng Baek, Department Of Marine, Earth, And Atmospheric Sciences, North Carolina State University  
 Viney P. Aneja, Department Of Marine, Earth, And Atmospheric Sciences, North Carolina State University

**Session Adjourns****AT-3a Paper/Panel*****Ambient Air Toxics - Are We at Risk?***

Sponsoring Committees: AT-1, EE-1, EE-5

Chair: Pat Brush, Bechtel Corp.  
Co-Chair: David Heinhold, ENSR

**1:30 p.m. Paper #: 42880**

***The Denver Urban Air Toxics Assessment - Methodology, Results, and Risks***

Authors:

Gregg Thomas, Denver Dept. of Public Health and Environment

**1:55 p.m. Paper #: 41909**

***An Assessment of Air Toxic Concentrations and Associated Health Risks across New Jersey using NATA***

Authors:

Peter Mayes, New Jersey Department of Environmental Protection, Bureau of Air Quality Evaluation

Joann Held, New Jersey Department of Environmental Protection, Bureau of Air Quality Evaluation

**Session Adjourns**

**EI-1a Paper**

***Air Quality Management Strategies and Compliance Programs at Industrial and Federal Facilities***

Sponsoring Committees: EI-1 AT-5 EP-1

Chair: Steve Rasmussen, Hill Air Force Base

Co-Chair: Mitch Lindsay, CH2M Hill

**1:30 p.m. Paper #: 42466**

***Comparison of Aircraft and Other Mobile Source Engine Testing Procedures***

Authors:

Everett L. Douglas, US Navy, Aircraft Environmental Support Office

Keith W. Skaggs, Anteon Corp.

**1:55 p.m. Paper #: 42745**

***Air Program Management Systems***

Authors:

Andee Felker, TRW

Michelle York, TRW

John Freitas, TRW

**2:20 p.m. Paper #: 43584**

***Air Quality Compliance Strategies - Problems & Solutions***

Authors:

Vijay Apte, URS

**Session Adjourns**

**EI-2a Paper**

***Air Toxics and Power Plants - Regulations and Control***

Sponsoring Committees: EI-2

Chair: Daniel Todd, Air Quality Services, LLC

Co-Chair: Bob Breeze, Austin Energy

**1:30 p.m. Paper #: 42771**

***Mercury Inventory and Source Characterization: Emerging Data***

Authors:

Leonard Levin, EPRI

**1:55 p.m. Paper #: 43307**

***Synoptic Climatological Approach to Development of Warning Signals for SO<sub>2</sub> Episodes at the Mae Moh Valley, Thailand***

Authors:

Chutimon Piromyaporn, Asian Institute of Technology, Urban Environmental Engineering and Management

Nguyen Thi Kim Oanh, Asian Institute of Technology, Urban Environmental Engineering and Management

**2:20 p.m. Ethics Moment**

***Regulator Selects Data to Support Theory for Design of Control Strategies***

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**3:45 p.m. Paper #: 42787*****Gas Turbines in Distributed Generation: Applications and Regulatory Issues***

Authors:

Ralph Ordonez, Solar Turbines, Inc.

Leslie Witherspoon, Solar Turbines, Inc.

**4:10 p.m. Paper #: 42920*****Air Impacts of Distributed Generation Power Sources in Maryland***

Authors:

Lisa Avendt, Environmental Resources Management, Inc.

Mark Garrison, ERM

Diane Brown, State of Maryland/Department of Natural Resources

Julie Ross, ERM

**Session Adjourns****EI-2e Panel*****Multi-Pollutant Legislation for the Power Sector***

Sponsoring Committees: EI-2

Chair: C.V. Mathai, PNW/APS

**Panel to begin at 1:30 p.m.**

Panelists:

Elizabeth Stolpe, The White House Council on Environmental Quality

Tim Profeta, Counsel to Senator Joseph Lieberman

Joseph C. Stanko, Jr., Counsel to Committee on Energy &amp; Commerce, The U.S. House of Representatives

E. Donald Elliott, Professor of Law, Yale Law School

Quinn Shea, Executive Director for Environmental Affairs, Edison Electric Institute

Tom Peterson, Director for Domestic Policy at the Center for Clean Air Policy

**EI-4a Paper/Panel*****Recent Regulatory Developments Affecting Chemical and Petroleum Industry Emission Sources***

Sponsoring Committees: EI-4 EP-1

Chair: Richard D. Siegel, Foster Wheeler

Co-Chair: H. Chuck Cooper, Ashland Inc.

**1:30 p.m. Paper #: 42050*****EPA's Newest Set of Standards for the Refining Industry - The Consent Decree***

Authors:

Jerry Hill, Bechtel Corporation

**1:55 p.m. Paper #: 45480*****What is Wrong with the NSPS for Petroleum Refinery FCCs and How to Fix It for Refinery MACT II?***

Authors:

(Ganga) Prasad G. RAO, Energy, Environmental and Mineral Economist

**2:20 p.m. Ethics Moment*****Operations Manager Directs Environmental Manager to NOx Report Illegal Discharge*****2:45 - 3:45 p.m. Break in Exhibition Viewing****3:45 p.m. Paper #: 45482*****Risky Analysis Indeed! An Economist's Critique of Risk Analyses of Emissions from Petroleum Refinery FCCs***

Authors:

(Ganga) Prasad G. RAO, Energy, Environmental and Mineral Economist

**4:10 p.m. Paper #: 45817*****EPA's Pursuit of New CEMS Ignores The Law & The Facts***

Authors:

Frank Lobb, Clean Air Engineering

**Session Adjourns****EI-6a Paper/Panel*****Problems with Emission Estimates in the Metal Industries and their Impact on MACT/NSR Determinations***



Sponsoring Committees: EI-6  
Chair: Wayne H. Leipold, Phelps Dodge Miami, Inc.  
Co-Chair: Stephen S. Felton, AK Steel

**1:30 p.m. Paper #: 41775**

***Secondary Aluminum Operating Improvements***

Authors:  
Charles A. Licht, Charles Licht Engineering Associates

**1:55 p.m. Paper #: 42946**

***Influence of Emission Estimates on a BACT Determination for Iron Foundry Core Making Operations***

Authors:  
Steven Klafka, Wingra Engineering  
Kurt Jacobsen, Wingra Engineering

**2:20 p.m. Paper #: 43340**

***Chromate Concentration Bias In Epoxy Primer Paint by Particle Size***

Authors:  
Peter T. LaPuma, Air Force Institute of Technology  
David B. Novy, Air Force Institute of Technology

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**Panel will begin at 3:45 p.m.**

Panelists:  
Allen Dittenhoefer - Enviroplan, Inc.  
Robert Geddis - AIRREGS, Inc.  
Valerie Hudson - Gallatin Steel  
Bill Kemner - Environmental Quality Management  
James Little - US EPA Region IV  
Carrie MacDougall - Clark County, Nevada Agency

**EI-4b Paper**

***Source Control Strategies at Chemical and Petroleum Facilities***

Sponsoring Committees: EI-4 AE-1 AT-1  
Chair: Suresh Santanam, Stearns & Wheeler LLC  
Co-Chair: Henry Graham Jr., Louisiana Chemical Association

**1:30 p.m. Paper #: 42621**

***Achieving Low Mercury Concentrations In Chlor-Alkali Wastewaters***

Authors:  
David R. Tonini, Earth Tech, Inc.  
Debra A. Gauvin, Earth Tech, Inc.  
Robert W. Soffel, Selective Adsorption Associates, Inc.  
W. Peter Freeman, NUCON International, Inc.

**1:55 p.m. Paper #: 42820**

***Petroleum Refinery Title V Compliance Assurance Program Implementation- Case Study***

Author:  
Gail Braden, REM, Dixon Environmental

**2:20 p.m. Paper #: 42935**

***NOx Emissions Reduction Technologies in the Petrochemical and Refining Industries***

Authors:  
Charles E. Baukal, John Zink Co. LLC  
Robert Hayes, John Zink Co. LLC  
Mike Grant, John Zink Co. LLC  
Prem Singh, John Zink Co. LLC  
Darin Foote, John Zink Co. LLC

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**3:45 p.m. Paper #: 45487**

***Hydrogen Sulfide Study near Petroleum Asphalt Plants***

Authors:  
Steve Paul Schliesser, North Carolina DAQ, Toxics Protection Branch  
Bryan D. Lange, NC DAQ, Toxics Protection Branch  
James R. Bowyer, NC DAQ, Toxics Protection Branch

Jeffrey J. Hayward, NC DAQ, Toxics Protection Branch  
J. Thomas Anderson, NC DAQ, Air Quality Analysis

**4:10 p.m. Paper #: 42968**

***EPCRA's Impacts on the Chemical and Petroleum Industries***

Authors:

June Bolstridge, GAIA Corporation

**4:35 p.m. Paper #: 45407**

***Innovative PM10/TSP Monitoring Strategy In Development of Petroleum Coke Handling Permit***

Authors:

Ravi Rangan, Delaware Department of Natural Resources and Environmental Control

Elizabeth A. Frey, Delaware Department of Natural Resources and Environmental Control

Joseph M. Martini, Delaware Department of Natural Resources and Environmental Control

**Session Adjourns**

**EP-1g Paper/panel**

***NSR Development and Issues***

Sponsoring Committees: EP-1 EP-3

Chair: Gary McCutchen, RTP Environmental

Co-Chair: Todd Lopez, ENSR

**1:30 p.m. Paper #: 42670**

***Survey of the Difficulty of Obtaining Environmental Permits for the Construction and Operation of New Power Generation Capacity in 28 States***

Authors:

Howard Ellis, Enviroplan Consulting

Bruce Lippincott, Lawler, Matusky and Skelly Engineers, LLP

**1:55 p.m. Paper #: 42752**

***Comparison of the Most Recent BACT/LAER Determinations for Combustion Turbines by State Air Pollution Agencies***

Authors:

Nishat Hydari, Enviroplan Consulting, Environmental Studies Division

Adeel Yousuf, Enviroplan Consulting, Environmental Studies Division

Howard Ellis, Enviroplan Consulting

**2:20 p.m. Ethics Moment**

***Permitting Engineer Softens NSR Rules to Help Local Industries***

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**3:45 p.m. Paper #: 42870**

***Writing a Title V Permit - A Team Approach***

Authors:

James Garrison, Science Applications International Corporation,

Maria Rodriguez, Air Force Air Armament Center, Environmental Directorate (AAC/EM)

Rick Bradburn, Florida Department of Environmental Protection, Northwest District

**4:10 p.m. Paper #: 43132**

***Title V Permitting Strategies for a Waste to Ethanol Production Facility***

Authors:

Kit Liang, Malcolm Pirnie, Inc.,

David Webster, Masada OxyNol LLC,

Ramon Li, Malcolm Pirnie, Inc.

**Session Adjourns**

**ES-1b Paper**

***Verification of Pollution Prevention Technologies for Environmental Compliance***

Sponsoring Committees: ES-1 EI-1

Chair: Jim Bridges, Pacific Environmental Services Inc.

Co-Chair: Gary Gasperino, Engineering Services Center

**1:30 p.m. Paper #: 42229**

***Advanced Green Technologies Improve Readiness, Durability, and Affordability of Military Jet Engines***

Authors:

Charles H Alford, Anteon Corporation  
Robert E Bondaruk, Anteon Corporation

**1:55 p.m. Paper #: 42838**

***Pollution Prevention Tools for Small and Medium Sized Industries***

Authors:

Ashok Kumar, University of Toledo, University of Toledo, Civil Engineering  
Sandys Thomas, University of Toledo, University of Toledo, Civil Engineering  
Sunil Ojha, University of Toledo, University of Toledo, Civil Engineering

**2:20 p.m. Paper #: 42966**

***Hexavalent Chrome Extraction from Wastewater***

Authors:

H. Nick Conkle, Battelle  
J. Kevin Rose, Battelle  
Bruce Monzyk, Battelle  
Satya P. Chauhan, Battelle  
Larry Cook, Air Force Research Laboratory

**2:45 - 3:45 p.m. Break and Exhibition Viewing**

**3:45 p.m. Paper #: 43160**

***Hydraulic Fluid Purification: USAF-AFMC/CEVQ Pollution Prevention Project, USAF-Wide Incorporation of Hydraulic Fluid On-Site Purification, Depot and MAJCOM Operating Locations (Demonstration for USAF-wide program)***

Authors:

Donald E. Streeter, ASC/AAAV, Air Vehicle Team, Aging Aircraft Planning Division, Aeronautical Enterprise Program Office

**4:10 p.m. Paper #: 45479**

***Elimination of Chromates in Paint Preparation***

Authors:

Richard Buchi, TIELM

**4:35 p.m. Paper #: 42261**

***The ETV P2 Innovative Coatings and Coating Equipment Program - An Update***

Authors:

Julie Napotnik, Concurrent Technologies Corporation  
Mike Kosusko, U.S. EPA

**5:00 p.m. Paper #: 43556**

***The U.S. EPA's Environmental Technology Verification (ETV) Program***

Authors:

Abby Hill, U.S. EPA  
Teresa Harten, U.S. EPA

**Session Adjourns**

**ES-4f Paper/panel**

*Sustainable Development: Indicators & Current topics*

Sponsoring Committees: ES-4

Chair: John Sherwell, MD DNR

Co-Chair: Doug Muschett, PRO-NATURA USA

**1:30 p.m. Paper #: 42591**

***An Introduction to The SIGMA Project: Sustainability in Practice***

Authors:

B. Tod Delaney, First Environment, Inc.  
Nao Ikemoto, First Environment, Inc.  
Mark Barthel, British Standards Institution

**1:55 p.m. Paper #: 43278**

***Comparison and Characterization of the Atmospheric Emissions Produced by Combustion of Petrodiesel, Methyl Ester of Soybean Oil and Methyl Ester of Used Oil***

Authors:

Jeronimo Martinez-Martinez, Tecnologico de Monterrey  
Geronimo Coronado-Escalante, Tecnologico de Monterrey

**2:20 p.m. Paper #: 41867**

***Negotiating Environmental Sustainability: Environmental Discourse in the United***

***States and the Influence on Consumers and the Production of Space***

Author:

Nicholas Zingale, Affinity Consultants, Inc.

**2:45 - 3:45 p.m. Break and Exhibition Viewing****Panel will begin at 3:45 p.m.**

Panelists:

John Sherwell, MD DNR

William Painter, US EPA

David Blaha, ERM

**Session Adjourns****ET-1a Paper***Diesel Propulsion Emissions*

Sponsoring Committees: ET-1 AB-1 AM-1

Chair: Alan Gertler, Desert Research Institute

Co-Chair: Rich Baldauf, U.S. EPA - OTAQ

**1:30 p.m. Paper #: 42825*****Application of a Microscale Emission Factor Model for Particulate Matter (MicroFacPM) to Calculate Vehicle Generated Contribution of PM<sub>2.5</sub> Emissions***

Authors:

Rakesh B Singh, National Research Council Research Associate at the National

Exposure Research Laboratory, United States Environmental Protection Agency

Alan H Huber, Atmospheric Sciences Modeling Division, Air Resources Laboratory,

National Oceanic and Atmospheric Administration

James N Braddock, US EPA

**1:55 p.m. Paper #: 42967*****Application of a Multi-lag Regression Approach to Determine On-Road PM<sub>10</sub> and PM<sub>2.5</sub> Emission Rates***

Authors:

Mahmoud Abu-Allaban, Desert Research Institute,

John Gillies, Desert Research Institute,

Alan Gertler, Desert Research Institute,

Russ Clayton, ARCADIS Geraghty &amp; Miller,

David Profitt, ARCADIS Geraghty &amp; Miller,

**2:20 p.m. Paper #: 42520*****Development of Remote Sensing Instrumentation for NO<sub>x</sub> and PM Emissions from Heavy Duty Trucks***

Authors:

Katey Lenox, Oak Ridge National Laboratory

Al Akerman, Oak Ridge National Laboratory

Curt Ayers, Oak Ridge National Laboratory

Thang Dam, Oak Ridge National Laboratory

Ralph McGill, Oak Ridge National Laboratory

John Storey, Oak Ridge National Laboratory

Mengdawn Cheng, Oak Ridge National Laboratory

Tye E Barber, Tennessee Technological University Arts &amp; Sciences

Walt G. Fisher, Galt Technologies, LLC

Eric A. Wachter, Galt Technologies, LLC

**2:45 - 3:45 p.m. Break and Exhibition Viewing****3:45 p.m. Paper #: 42299*****Road Construction Emissions Model***

Authors:

Edward RIMPO, Jones &amp; Stokes

Kevin Lee, Jones &amp; Stokes

**4:10 p.m. Paper #: 42735*****Air Quality Around Our Nation's Airports During the Aftermath of the September 11, 2001 Attack on America***

Authors:

Michael A. Kenney, URS Corporation

Deborah Dutcher Wilson, URS Corporation

Wayne Arner, URS Corporation

**4:35 p.m. Paper #: 42700*****An Estimate of the Emissions of Toxic Air Contaminants for Medium-Duty Diesel-Powered Vehicles***

Authors:

Xiaona Zhu, University of California, Riverside, Bourns College of Engineering, Center for Environmental Research &amp; Technology

Thomas D. Durbin, CE-CERT University of California, Riverside, Chemical &amp; Environmental Department

Kathalena Cocker, CE-CERT

Joseph M. Norbeck, CE-CERT

**5:00 p.m. Paper #: 42797*****The FHWA Particulate Matter Research Program***

Authors:

Kevin Black, Federal Highway Administration

Frank Divita, E.H. Pechan and Associates

**Session Adjourns****WM-1g Paper*****Integrated to Waste Management 101: An Introduction***

Sponsoring Committees: WM-1 WM-2 WM-3 Ed. C.

Chair: Marjorie J. Clarke, Lehman College

Co-Chair: Malama Chock, Univ of Michigan-OSEH

**1:30 p.m. Paper #: 45363*****Introduction to Municipal Solid Waste Incineration***

Authors:

Marjorie Clarke, Lehman College

**1:55 p.m. Paper #: 45362*****Introduction to Waste Prevention and Recycling***

Authors:

Marjorie Clarke, Lehman College

**2:20 p.m. Paper #: 45361*****Healthcare Waste Management: The New Focus***

Authors:

Gary Urbanowicz, Doucet &amp; Mainka, PC

**2:45 - 3:45 p.m. Break and Exhibition Viewing****3:45 p.m. Paper #: 45473*****Basics of Solid Waste Composting***

Authors:

Uta Krogmann, Rutgers, The State University of New Jersey

**4:10 p.m. Paper #: 43002*****Use of Precipitation Data to Develop and Modify the Leachate Model from Landfill of MSW Combined with Incineration Ashes***

Authors:

Jing-Dong Chow

Wan-Lan Chai

Sue-Huai Gau

**4:35 p.m. Paper #: 43008*****Influence of Pollutants from Landfill of Incineration Residuals by Acid Precipitation***

Authors:

Jing-Dong Chow

Wan-Lan Chai

**5:00 p.m. Paper #: 43314*****Using Forced Air Systems to Control Moisture and Odors***

Authors:

Jan W. Allen, CH2M Hill

Renee Groskreutz, CH2M Hill

**Session Adjourns****WR-1a Paper*****Redevelopment Approaches and Issues***

Sponsoring Committees: WR-3 AT-5 EP-1  
 Chair: Dan Mueller, Whitehead and Mueller, Inc.  
 Co-Chair: Joel Wipf, CH2M HILL

**1:30 p.m. Paper #: 42760**

***Redeveloping Baltimore's Historic Breweries***

Authors:

Paul H Hayden, EA Engineering, Science, and Technology, Inc.

**1:55 p.m. Paper #: 43139**

***The Business Environmental Site Assessment: Reducing Financial Uncertainties Associated with Urban Redevelopment***

Authors:

Michael Reese, Boelter & Yates, Inc.

Daniel Podraza, Boelter & Yates, Inc.

**2:20 p.m. Paper #: 42574**

***Integrating Global Positioning Systems, Geographic Information Systems, and Data Management into Environmental Site Investigation Strategies***

Authors:

Gregg Micalizio, ENSR International

Christopher Venezia, ENSR International

Jack Murosko, ENSR International

**Session Adjourns**

**WR-2b Paper**

***Innovative Treatment Techniques: Hard to Treat Contaminants***

Sponsoring Committees: WR-2 WR-3

Chair: Paul Randall, USEPA

Co-Chair: William Troxler, Focus Environmental, Inc.

**1:30 p.m. Paper #: 41646**

***Remediation of Environmental Hexavalent Chromium Contamination Using Chromate Reducing Bacterial Consortia***

Authors:

William A. Apel, Biotechnology Department, Idaho National Engineering and Environmental Laboratory

James N. Petersen, Department of Chemical Engineering, WSU/NSF IGERT Center for Multiphase Environmental Research, Washington State University

William A. Smith, Biotechnology Department, Idaho National Engineering and Environmental Laboratory

Brent M. Peyton, Department of Chemical Engineering, WSU/NSF IGERT Center for Multiphase Environmental Research, Washington State University

**1:55 p.m. Paper #: 42166**

***Solidification/Stabilization of Hg(II)-containing Solid Wastes by Cement after Stabilization by Sulfurized Reactivated Carbon***

Authors:

Jian Zhang, University of Cincinnati University of Cincinnati, Civil & Environmental Engineering

Paul L Bishop, University of Cincinnati University of Cincinnati, Civil & Environmental Engineering

**2:20 p.m. Paper #: 42527**

***Stabilization and Leachability Studies of Mercury-Containing Wastes***

Authors:

Haishan PIAO, University of Cincinnati\*University of Cincinnati, Civil and Environmental Engineering

Paul L. Bishop, University of Cincinnati University of Cincinnati, Civil and Environmental Engineering

**Session Adjourns**

**WR-1b Paper**

***Remediation Techniques and Approaches***

Sponsoring Committees: WR-1 EP-4 WR-2

Chair: Radha Krishnan, IT Corporation

Co-Chair: Terry Alexander, University of Michigan

**3:45 p.m. Paper #: 42976*****Tank-Based Bioremediation Of RCRA Hazardous Wastes***

Authors:

Frank Castaldi, URS Corporation

**4:10 p.m. Paper #: 41938*****Landfills Are Forever: Landfill Gas Remediation at a Commercially Developed Former Waste Disposal Site***

Authors:

Thomas Kusterer, Montgomery County (MD) Government

Sohrab Kourosh, Technico Environmental, Inc.

**4:35 p.m. Paper #: 43542*****Application of Geostatistical Analysis and GIS Tools for Characterizing Contamination at the USDOE Savannah River Site***

Authors:

Vikram M Vyas, Environmental and Occupational Health Sciences Institute

William Strawderman, Rutgers University, Department of Statistics

David S Kosson, Vanderbilt University, School of Engineering, Department of Civil and Environmental Engineering

Panos G Georgopoulos, Environmental and Occupational Health Sciences Institute

**5:00 p.m. Paper #59999*****Stabilization And Thermal Treatment For Remediation Of Mgp (Manufactured Gas Plant) Sites***

Thomas F. McGowan, TMTS Associates, Inc.

Mark A. Fleri, Williams Environmental Services

**Session Adjourns**

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