



Final Program

2014
General
Conference
Sponsor



A&WMA's 107th Annual Conference & Exhibition **Navigating Environmental Crossroads**

June 24-27, 2014 | Long Beach Convention Center | Long Beach, California



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WELCOME FROM THE A&WMA PRESIDENT



Welcome to Long Beach, where the Air & Waste Management Association is holding our 107th Annual Conference & Exhibition, a must-attend event for environmental professionals worldwide. This is an extremely valuable opportunity to connect and share information with those in government, industry, consulting, law firms, advocacy groups, and academia. This year's conference

and exhibition will once again present the best and latest technical information about environmental regulatory programs, research and technology and their application to solve environmental management challenges. Technical Program Chair, Patricia Brush, Vice Chair, Michael Kleinman, and the Technical Council, are to be congratulated on another great program – and we can't fail to mention the efforts of our session chairs and the many platform and poster presenters.

Last year we rolled out the Annual Conference Mobile Website; we are pleased to once again be able to offer our attendees this convenience. The mobile website allows you to easily access information about the technical sessions, exhibitors, networking events, and final program. It also helps attendees plan personal conference schedules so you don't miss the presentations of most interest to you. I encourage you to try it out now by visiting: <http://www.eventscribe.com/2014/awma/>.

I am proud to be a part of this esteemed Annual Conference, which I believe successfully showcases what A&WMA is all about: providing a neutral forum for the open discussion and debate on important environmental issues. If you are not currently a member of A&WMA, I encourage you to stop by the Association Resource Center and Bookstore or to chat with your fellow attendees who are members, to learn more about the wide range of benefits A&WMA offers our more than 5,000 members.

If you are already an A&WMA member, I hope you'll take full advantage of the opportunity this conference affords to connect with your fellow members and offer your insights into future programs and services. You can get involved in planning next year's Annual Conference & Exhibition in Raleigh, North Carolina by attending technical committee meetings. We're always looking for new perspectives and ideas, and most of our councils and committees hold their annual meetings during the week. Everyone is encouraged to attend these meetings to participate or just observe how things work. Check the program schedule for meeting days and times.

I would like to especially thank Glenn England, General Conference Chair, and Mohan Balagopalan, General Conference Vice Chair, and this year's local host committee team, our dedicated A&WMA Staff, as well as all our generous sponsors and exhibitors. Without their support and hard work this conference would not be possible.

Learn, network and have fun exploring Long Beach. Thank you for joining us, and I hope you enjoy your time at the best conference and exhibition in our industry!

Michael Miller, A&WMA President

A handwritten signature in black ink that reads "Michael J." followed by a long horizontal flourish.

WELCOME

From the General Conference Chair and Vice Chair



Glenn England



Mohan
Balagopalan

On behalf of the A&WMA West Coast Section, we welcome you to Long Beach and the A&WMA's 107th Annual Conference and Exhibition! We are pleased that you have chosen to spend the week with us in sunny Southern California and hope you will enjoy this

vibrant city. This year's conference theme, "Navigating Environmental Crossroads," reflects both the nexus of responsible environmental stewardship amid a growing economic future and Long Beach's seaport location.

Long Beach offers many attractions for all ages, from the regal Queen Mary and the brilliant Aquarium of the Pacific to centrally-located dining and entertainment. It is also a brief and pleasant cruise away from Catalina Island and a short distance from Disneyland, Universal Studios, Hollywood and everything Southern California has to offer. Long Beach is sure to provide a spectacular conference experience!

Long Beach has a remarkable history and is presently a thriving port city. It was an oil boom town in the 1920s and 1930s, it was the birthplace of pioneering aircraft designs, and today is home to Grand Prix street racing and managed health care innovators. The Port of Long Beach is the second busiest port in the U.S., 20 percent of all containers moving through U.S. ports pass through Long Beach.

Our Keynote program features business and regulatory perspectives from four extraordinary leaders: Dennis Arriola, President of Southern California Gas Company; Janet McCabe, Acting Assistant Administrator for U.S. Environmental Protection Agency's Office of Air and Radiation; Steve Shestag, Director of Enterprise Remediation, Environment, Health and Safety for The Boeing Company; and Barry Wallerstein, Executive Officer of the South Coast Air Quality Management District. Don't miss these vital viewpoints shaping regional, national and international energy, transportation and environmental regulation landscapes.

We are excited to present a vibrant technical program, bringing views and information on topics of essential interest to environmental professionals from all walks of life. The Mini-Symposium on Impacts of Transportation Hubs and Ports will allow attendees to easily attend all of the presentations on these issues. The 44th Annual Critical Review on Public Health and Components of Particulate Matter: The Changing Assessment of Black Carbon offers new insights into the human health effects of carbonaceous combustion emissions from diesel engines, traffic corridors, residential burning and other sources. We trust you will take away knowledge that will both help you in your day-to-day professional life ahead and provoke thoughts that lead you to new and innovative solutions.

We hope you will enjoy our venue, the Long Beach Convention & Entertainment Center. Located in the heart of downtown Long Beach, the Center and nearby accommodations are within walking distance to shopping, dining, attractions, and sightseeing along picturesque bays and miles of sandy Pacific beaches. The Center's meeting rooms, expansive exhibit hall and uniquely-styled lobby provide a superior experience for conference attendees and exhibitors alike.

Take advantage of the opportunities to meet old and new friends while you're here. Please join us at the Grand Reception on Tuesday evening for some Pacific-style food and refreshments. On Thursday evening enjoy a unique undersea experience as we dine while enjoying the exhibits at the Aquarium of the Pacific. Be sure you don't miss the technical tours: the legendary Jet Propulsion Laboratory, the lead U.S. center for robotic exploration of the solar system; and the Orange County Sanitation District's highly innovative tri-generation facility, fueled on biogas derived from wastewater treatment, simultaneously producing electricity, heat, and hydrogen fuel. For some social sightseeing, get together on an ocean excursion to see blue whales and dolphins, take a tour to see the stars in Hollywood, or enjoy some collective pedaling around town on the Pediwagon tour.

We want to take this opportunity to recognize those who have contributed their efforts over the past two years towards making this conference informative, fun and successful. First, a big thank you to our General Conference Sponsor, South Coast Air Quality Management District and to all our sponsors and exhibitors — we encourage you to meet them and find out more about their businesses, services and products. Heartfelt thanks are especially due to all of the West Coast Section Local Host Committee volunteers, who contributed countless hours over the past two years to planning, organizing and rising to meet every challenge. We're extremely grateful for the support and guidance of A&WMA's leadership, including current President Michael Miller, EPRI, and past President Sara Head, AECOM. A&WMA Executive Director Jim Powell and his professional staff deserve special acknowledgement for their superb skills and friendly guidance on every aspect of planning this conference. Thanks also to the Local Host Committees from Chicago (2013) and San Antonio (2012), who were so generous in their advice and support. We also would like to acknowledge the Long Beach Visitors & Convention Bureau for their energetic support and guidance.

We have planned a full schedule of technical presentations, great panel discussions and fun activities. Once again, we hope you enjoy your stay in Long Beach!

Glenn England, ENVIRON, General Conference Chair

Mohan Balagopalan, SCAQMD, General Conference Vice Chair

2014 Annual Conference and Exhibition Sponsors

A&WMA gratefully acknowledges our sponsors for their generous support of the 107th Annual Conference & Exhibition.

GENERAL CONFERENCE SPONSOR



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GET TO KNOW OUR SPONSORS

A&WMA gratefully acknowledges our sponsors for their generous support of the 107th Annual Conference & Exhibition.

General Conference Sponsor



South Coast Air Quality Management District

South Coast Air Quality Management District is the regional air pollution control agency for California's South Coast basin—which includes the combined urban portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. SCAQMD works proactively with regulated businesses, manufacturers, local governments, community stakeholders, academia, and state and federal regulatory official, forming partnerships, promoting advanced technologies, and developing innovative control strategies so that 16½ million Southern California residents can breathe cleaner air—and live healthier lives. www.aqmd.gov

Platinum Sponsors



AECOM

As concerns grow regarding familiar and emerging air quality issues—greenhouse gas emissions; regional haze; urban, airport and harbor congestion; and mercury emissions—AECOM is at the forefront – tackling matters with innovation and advanced technology. We are a global design and management firm with 45,000 employees in 150 countries.



AES Southland

The AES Corporation is a global power company that owns and operates a diverse and growing portfolio of electricity generation and distribution businesses, which provide reliable, affordable energy to customers in 21 countries. AES understands that a reliable, affordable supply of electricity is essential to human progress, economic growth, public health and security.



Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the public agency entrusted with regulating stationary sources of air pollution in the nine counties that surround the San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano and southern Sonoma counties. BAAQMD's mission is to protect public health, air quality and the global climate while striving to provide a healthy breathing environment for every Bay Area resident.



NASA

To study the Earth as a whole system and understand how it is changing, NASA develops and supports a large number of Earth-observing satellite missions, as well as a number of flight (i.e., airborne) missions, that provide long-term global observations of the land surface, biosphere, solid Earth, atmosphere, and oceans. These missions provide Earth science researchers the necessary data to address key questions about Earth's environment and global climate change, and allow them to predict how the Earth system will change in the future.



Port of Long Beach

The Port of Long Beach is the premier U.S. gateway for trans-Pacific trade and a trailblazer in innovative goods movement, safety and environmental stewardship. As the second-busiest container seaport in the United States, the Port handles trade valued at \$155 billion annually and supports hundreds of thousands of jobs.



Southern California Gas Company

Southern California Gas Co. has been delivering clean, safe and reliable natural gas to its customers for more than 140 years. It is the nation's largest natural gas distribution utility, providing service to 20.9 million consumers connected through nearly 5.8 million meters in more than 500 communities. The company's service territory encompasses approximately 20,000 square miles throughout central and Southern California, from Visalia to the Mexican border. Southern California Gas Co. is a regulated subsidiary of Sempra Energy (NYSE: SRE).



Tesoro Corporation

Tesoro Los Angeles refinery is located in the Los Angeles County, near the Los Angeles Harbor on approximately 930 acres. The Los Angeles refinery is the largest refinery on the West Coast and a major producer of clean fuels. At full capacity, it operates 363,000 barrels per day (bpd). The refinery processes heavy crude from California's San Joaquin Valley and Los Angeles Basin as well as crudes from the Alaska North Slope, South America, West Africa and other international sources. Tesoro Corporation, a fortune 100 company, is an independent refiner and marketer of petroleum products.

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3M captures the spark of new ideas and transforms them into thousands of ingenious products. Our culture of creative collaboration inspires a never-ending stream of powerful technologies that make life better. 3M is the innovation company that never stops inventing. With \$30 billion in sales, 3M employs 88,000 people worldwide and has operations in more than 70 countries. For more information, visit www.3M.com or follow @3MNews on Twitter.



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Capital Power (TSX: CPX) is a growth-oriented North American power producer headquartered in Edmonton, Alberta. The company develops, acquires, operates and optimizes power generation from a variety of energy sources. Capital Power owns more than 2,600 megawatts of power generation capacity at 14 facilities across North America and owns 371 megawatts of capacity through a power purchase agreement. An additional 490 megawatts of owned generation capacity is under construction in Alberta and Ontario.



Chevron Products Company

Chevron is one of the world's leading integrated energy companies, with subsidiaries that conduct business worldwide. The company is involved in virtually every facet of the energy industry. Chevron explores for, produces and transports crude oil and natural gas; refines, markets and distributes transportation fuels and lubricants; manufactures and sells petrochemical products; generates power and produces geothermal energy; provides energy efficiency solutions; and develops the energy resources of the future, including biofuels. Chevron is based in San Ramon, Calif. More information about Chevron is available at www.chevron.com.



ENVIRON International Corporation

ENVIRON works with clients around the world to help resolve their most demanding environmental and human health issues. We combine resources across geographic boundaries and technical and scientific disciplines to provide clients with the best, most responsive teams—whether responding to existing challenges, evaluating opportunities to improve performance or seeking to reduce future liabilities. Clients benefit from our unique ability to bring clarity to issues at the intersection of science, business and policy.



Environmental Resources Management (ERM)

Environmental Resources Management (ERM) is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services. We have more than 5,000 people in over 40 countries and territories working out of more than 150 offices. ERM is committed to providing a service that is consistent, professional and of the highest quality to create value for our clients. Over the past three years we have worked for more than 50 per cent of the Global Fortune 500 delivering innovative solutions for business and selected government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.



Los Angeles Department of Water & Power

The Los Angeles Department of Water and Power (LADWP) is the nation's largest municipal utility, having provided water and power service to Los Angeles residents and businesses for over 100 years. LADWP continues to provide reliable services to customers while maintaining competitive rates that remain among the lowest in California.



Pacific Gas and Electric Company

San Francisco-based Pacific Gas and Electric Company is one of the largest combination natural gas and electric utilities in the Country. The 20,000 employees of the company carry out our primary business—the transmission and delivery of natural gas and electric service to approximately 15 million people throughout a 70,000-square-mile service area in northern and central California.



URS Corporation

Navigating the challenges facing industry and governments today requires a fully integrated organization with the capabilities to support the full life cycle of a project. URS is that company—a single source provider of planning, architecture, engineering, environmental, and technical services. URS provides comprehensive environmental services to public and private sector clients—from environmental assessments, permitting, compliance audits, and air quality studies to waste management, site remediation, decommissioning and closure. With 9 offices in Southern California and a global network of more than 400 offices in nearly 50 countries, URS' comprehensive skills and expertise are valued by clients around the world.



Western States Petroleum Association

Western States Petroleum Association (WSPA)

WSPA is a non-profit trade association that represents companies that account for the bulk of petroleum exploration, production, refining, transportation and marketing in the western states of Arizona, California, Nevada, Oregon, and Washington. WSPA is dedicated to ensuring that Americans continue to have reliable access to petroleum products through policies that are socially, economically and environmentally responsible.

Silver Sponsors



A&WMA Louisiana Section

The Louisiana Section of the Air and Waste Management Association is over 300 members strong located throughout the state. Meetings are held every other month and the two day Fall Conference in October is very successful. The Section is especially proud of its Young Professional group which includes several members active at the international level. We are very excited to have been selected as the host for ACE 2016 and we look forward to sharing the progress New Orleans has made in recovering from Hurricane Katrina. Laissez le bon temps rouler!



A&WMA West Coast Section

West Coast Section of A&WMA consists of 9 chapters and 11 student chapters with the headquarter located in the Los Angeles Basin. We intend to improve environmental knowledge and decisions by providing a neutral forum for exchanging information and are committed to assist in the professional development and critical environmental decision-making of our members to benefit society.



BMW Manufacturing Co.

BMW Manufacturing Co., LLC

BMW Manufacturing Co., located in Spartanburg, S.C., is a subsidiary of BMW AG in Munich, Germany and is the global producer of the BMW X3 and X5 Sports Activity Vehicles and X4 and X6 Sports Activity Coupes. Over 1,000 vehicles are made daily in South Carolina and exported to over 140 markets. For more information on BMW Manufacturing, visit www.bmwusfactory.com.



The Boeing Company

Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems. A top U.S. exporter, the company supports airlines and U.S. and allied government customers in 150 countries. Boeing products and tailored services include commercial and military aircraft, satellites, weapons, electronic and defense systems, launch systems, advanced information and communication systems, and performance-based logistics and training. With corporate offices in Chicago, Boeing employs more than 168,000 people across the United States and in more than 65 countries.



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CH2M HILL is a global leader in full-service consulting, design, design-build, operations, and program management. With \$6.6 billion in revenue and more than 26,000 employees, CH2M HILL delivers innovative, practical, sustainable solutions- helping clients develop and manage infrastructure and facilities that improve efficiency, safety, and quality of life.



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Electric Power Research Institute (EPRI)

The Electric Power Research Institute, Inc. conducts research, development and demonstration (RD&D) relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, we bring together scientists and engineers as well as experts from academia and the industry to help address challenges in electricity.



Lakes Environmental Software

Lakes Environmental Software is internationally recognized for its technologically advanced environmental modeling software and data products. Since 1995 we remain dedicated to providing industry and the regulatory community with exceptional service and cost effective environmental IT solutions. Our products increase productivity, reduce errors, and provide unique solutions in an ever-increasing regulatory constrained world. Expertise includes: Air Dispersion Modeling, Emissions Inventory, Regulatory Permit and Compliance Solutions, Custom IT Solutions, Real-Time and Forecast Modeling Solutions, Meteorological Data Processing (e.g. MM5/WRF), and Training. Lakes Environmental is dedicated to continuously investigating new areas of research to provide our users with superior state-of-the-art software solutions and data services.



Mojave Desert Air Quality Management District (AQMD)

Stretched out over 20,000 miles of vast desert expanse, the Mojave Desert Air Quality Management District is geographically the second largest of California's 35 air districts. Renowned as one of the state's most progressive and business friendly districts, the MDAQMD is the regulatory air agency for San Bernardino County's High Desert and the Palo Verde Valley of Riverside County.



Port of Los Angeles

The Port of Los Angeles is America's premier port and has a strong commitment to developing innovative strategic and sustainable operations that benefit the economy as well as the quality of life for the region and the nation it serves. As the leading seaport in North America in terms of shipping container volume and cargo value, the Port generates more than 830,000 regional jobs and \$35 billion in annual wages and tax revenues. The Port of Los Angeles – A cleaner port. A brighter future.

Bronze Sponsors



A&WMA Gulf Coast Chapter

The Gulf Coast Chapter, based in Houston, Texas, is the local chapter of the Air & Waste Management Association (A&WMA), a non-profit, nonpartisan technical, scientific and educational organization with more than 14,000 members in 65 countries. Founded in 1907, A&WMA provides a forum where all viewpoints of an environmental issue (technical, scientific, economic, social, political and risk assessment) receive consideration. This worldwide network represents many disciplines: physical and social sciences, health and medicine, engineering and law.



Calpine Corporation

Calpine Corporation is helping meet the needs of an economy that demands more and cleaner sources of electricity. Founded in 1984, Calpine is a major U.S. power company, capable of delivering more than 29,000 megawatts of clean, reliable and fuel-efficient electricity to customers and communities in 20 U.S. states and Canada. The company develops, constructs, owns and operates a modern and flexible fleet of low-carbon, natural gas-fired and renewable geothermal power plants. Using advanced technologies, Calpine generates electricity in a reliable and environmentally responsible manner for the customers and communities it serves.



Environmental Compliance Solutions

Environmental Compliance Solutions, Inc.

Since 1995, Environmental Compliance Solutions, Inc. (ECS) has been dedicated to providing exceptional air quality solutions to public and private-sector clients in California and across the United States. ECS is a woman-owned (WBE-certified), small business (SBE-certified) headquartered in Santa Monica, California. We provide professional engineering, scientific, and management services to a wide variety of clients. Our team of professionals is committed to technical excellence, professional integrity, and to providing quality service at a reasonable price. Our primary focus areas include: We have extensive experience assisting clients with various air quality requirements including: Air Quality Auditing, Air Quality Permitting and Emission Inventories, Greenhouse Gas Services/AB 32, Health Risk Assessments/Proposition 65/AB2588, CEQA/NEPA Air Quality Analysis, Sustainability, and Air Quality Training.



Trinity Consultants, Inc.

For nearly 40 years, Trinity Consultants has assisted industrial facilities with sensitive regulatory compliance and environmental management issues. Trinity also markets BREEZE® software and data services and annually offers professional training on numerous environmental topics. T3, a division of Trinity Consultants, implements innovative solutions for environmental data management.



Yorke Engineering

Yorke Engineering is a California-focused firm founded in 1996 with extensive experience in aiding clients with their critical air quality and environmental needs. Our in-depth knowledge and understanding of complex regulatory requirements, experienced staff, and relationships with various regulatory agencies allow us to provide integral support in meeting your air quality and environmental needs.

Supporting Sponsors



A&WMA Golden West Section

The Golden West Section (GWS) of the Air & Waste Management Association (A&WMA) serves the northern California area. Its purpose is to promote better understanding of the problems of air pollution and waste management within the geographic area of the Section and to provide a means of exchanging information directed towards solving those problems.



Delta Air Quality Services

Delta Air Quality Services, Inc. (Delta) is an environmental services organization specializing in emissions measurement and environmental consulting. Delta has expertise in the performance of virtually every federal EPA, California Air Resources Board (CARB), and South Coast Air Quality Management District (SCAQMD) stationary source test methods.

LOCAL HOST COMMITTEE

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Vice Chair Jillian Baker
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*South Coast Air Quality
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Vice Chair Thomas Miller
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*South Coast Air Quality
Management District*

Vice Chair Bhaskar A. Chandan
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California Analytical Instruments, Inc.

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Wales Environmental (Retired)

Vice Chair Coby Skye
LA County Department of Public Works

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*South Coast Air Quality Management
District*

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SA Recycling

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Bezaire Ledwitz Borncamp, APC

Vice Chair Coby Skye
*Los Angeles County Department
of Public Works*

LONG BEACH LIAISON

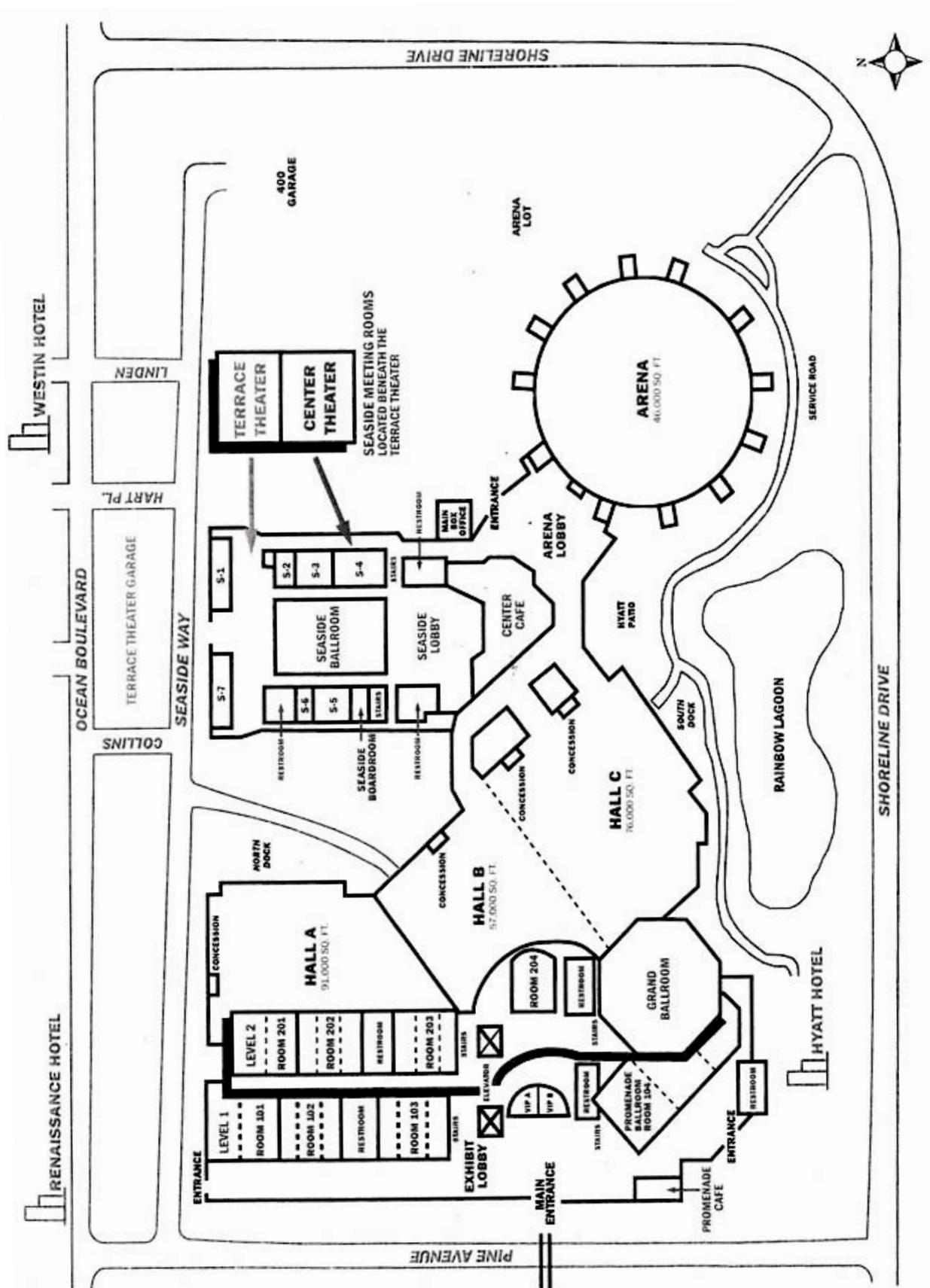
Joseph Hower
ENVIRON International Corporation

KEYNOTE SPEAKER/ PLENARY COMMITTEE

Mohan Balagopalan, *SCAQMD*
Glenn C. England, *ENVIRON*
Sara Head, *AECOM*
Michael Kleinman, *UC Irvine*
Laki Tisopulos, *SCAQMD*

*Thank you A&WMA's West Coast Section
and all of its Chapters.*

LONG BEACH CONVENTION CENTER

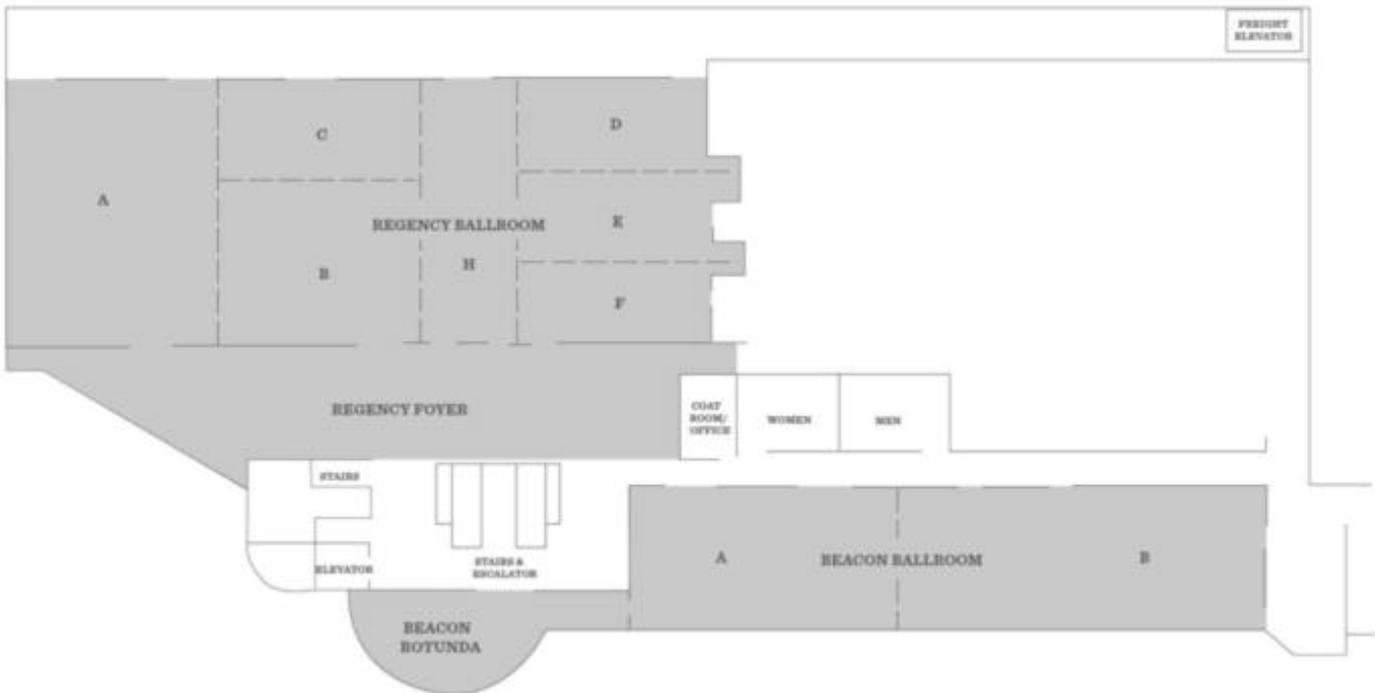


HYATT REGENCY LONG BEACH

FIRST FLOOR



FOURTH FLOOR



DAILY SCHEDULE AT-A-GLANCE

TIME	EVENT	LOCATION	ROOM NAME	FLOOR
SUNDAY - JUNE 22		VENUE	ROOM NAME	FLOOR
7:00 AM - 5:00 PM	Annual Conference Registration	LBCC - Long Beach Convention Center	Main Lobby	1st
8:00 AM - 5:00 PM	Board of Directors Meeting	LBCC	103B	1st
8:00 AM - 5:00 PM	Professional Development Courses	Refer to Addendum		
MONDAY - JUNE 23		VENUE	ROOM NAME	FLOOR
7:00 AM - 5:00 PM	Annual Conference Registration	LBCC	Main Lobby	1st
7:30 AM - 8:30 AM	Joint Councils' Breakfast	Hyatt	ShorelineAB	1st
8:00 AM - 5:00 PM	Professional Development Courses	Refer to Addendum		
8:30 AM - 5:00 PM	Young Professional Advisory Council Meeting	Hyatt	SeaviewB	1st
8:30 AM - 5:00 PM	Technical Council Meeting	Hyatt	SeaviewA	1st
8:30 AM - 5:00 PM	Section & Chapters Council Meeting	Hyatt	SeaviewC	1st
9:00 AM - 1:00 PM	Exhibitor Appreciation Break	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 6:30 PM	A&WMA Scholarship Golf Open Skylinks Golf Course	Bus departs at 9:30 am at the LBCC Main Entrance on Pine Avenue		
12:00 PM - 1:00 PM	Joint Councils' Lunch	Hyatt	ShorelineAB	1st
2:00 PM - 3:00 PM	Exhibitors' Advisory Committee Meeting	LBCC	203A	1st
5:00 PM - 6:00 PM	2014 Meets 2015	LBCC	203A	1st
6:00 PM - 7:00 PM	EPA Alumni Association Reception	Hyatt	Seaview Foyer	1st
TUESDAY - JUNE 24		VENUE	ROOM NAME	FLOOR
7:00 AM - 5:00 PM	Annual Conference Registration	LBCC	Main Lobby	1st
7:30 AM - 8:45 AM	Social Program Breakfast	Hyatt	RegencyF	4th
8:00 AM - 10:30 AM	Education Council Meeting	Hyatt	HarborABC	1st
8:15 AM - 10:15 AM	Keynote Program	LBCC	Grand Ballroom	2nd
10:15 AM - 6:00 PM	Orange County Sanitation District: Tour of Renewable Hydrogen Station, Waste Water Treatment Plant and Groundwater Replenishment System	Bus Departs at 10:15 am at the LBCC Main Entrance on Pine Avenue.		
10:30 AM - 11:30 AM	Joint Meeting of the Publications Committee, Editorial Advisory Committee, and Editorial Review Board	Hyatt	ShorelineA	1st
10:30 AM - 11:30 AM	Technical Council Town Hall Meeting	LBCC	201	2nd
10:30 AM - 5:30 PM	Exhibition Hours	LBCC	Exhibit Hall A	Exhibit
10:30 AM - 11:30 AM	Exhibition Grand Opening / Session Break	LBCC	Exhibit Hall A	Exhibit
10:30 AM - 5:30 PM	Internet Café	LBCC	Exhibit Hall A	Exhibit
10:30 AM - 5:30 PM	Association Resource Center & Bookstore	LBCC	Exhibit Hall A	Exhibit
10:30 AM - 5:30 PM	The Hub	LBCC	Exhibit Hall A	Exhibit
10:30 AM - 1:15 PM	The Committee for the Professional Development of Women Luncheon and Meeting	Hyatt	SeaviewAB	1st
11:00 AM - 5:00 PM	Technical Program Resource Center	LBCC	203B	2nd
11:30 AM - 2:00 PM	Editorial Review Board	Hyatt	ShorelineA	1st
11:30 AM - 12:30 PM	Student Welcome Reception	LBCC	Exhibit Hall A	Exhibit
12:00 PM - 1:15 PM	Division & Technical Coordinating Committee Meetings	Refer to Page 15 & Addendum		
12:30 PM - 5:00 PM	Monitors Room	LBCC	203B	2nd
12:30 PM - 1:15 PM	PM INSTRUCTION	Refer to Page 17		
12:45 PM - 1:45 PM	Academic Career Preparation Workshop	Hyatt	RegencyB	4th
1:00 PM - 3:00 PM	Membership Committee of the Board of Directors	Hyatt	RegencyD	4th
1:20 PM - 5:40 PM	Technical Sessions	Refer to Page 57		
1:20 PM - 5:40 PM	Mini-Symposium: Impacts of Transportation Hubs & Ports	LBCC	101A	1st
1:30 PM - 3:00 PM	Education Council Meeting	Hyatt	HarborABC	1st
2:00 PM - 2:30 PM	Student/ECi Poster Set Up	LBCC	Exhibit Hall A	Exhibit
2:00 PM - 4:00 PM	EM Editorial Advisory Committee	Hyatt	ShorelineA	1st
2:30 PM - 5:30 PM	Student / ECi Poster Judging & Competition	LBCC	Exhibit Hall A	Exhibit
3:00 PM - 4:00 PM	Session Break / Exhibition	LBCC	Exhibit Hall A	Exhibit
3:00 PM - 4:00 PM	Scholarship Trustees	Hyatt	RegencyC	4th
4:00 PM - 5:00 PM	Publications Committee	Hyatt	ShorelineA	1st
5:00 PM - 6:00 PM	Scouting Jamboree Committee	Hyatt	RegencyB	4th
6:00 PM - 6:30 PM	A&WMA Annual Business Meeting	LBCC	204	2nd
6:45 PM - 8:00 PM	Grand Reception	LBCC	104ABC	1st

DAILY SCHEDULE AT-A-GLANCE

TIME	EVENT	LOCATION	ROOM NAME	FLOOR
WEDNESDAY - JUNE 25		VENUE	ROOM NAME	FLOOR
7:00 AM - 9:00 AM	South Atlantic States Section Breakfast	Hyatt	RegencyC	4th
7:00 AM - 5:00 PM	Annual Conference Registration	LBCC	Main Lobby	1st
7:00 AM - 5:00 PM	Monitors Room	LBCC	203B	2nd
7:00 AM - 7:45 AM	AM INSTRUCTION	Refer to Page 17		
12:30 PM - 1:15 PM	PM INSTRUCTION	Refer to Page 17		
7:30 AM - 8:30 AM	AEESP/AEES/A&WMA Meet and Greet Lecture and Continental Breakfast	Hyatt	SeaviewB	1st
7:00 AM - 8:30 AM	Yoga	Hyatt	ShorelineAB	1st
7:30 AM - 8:45 AM	Social Program Breakfast	Hyatt	RegencyF	4th
8:00 AM - 8:45 AM	Keynote Program	LBCC	Grand Ballroom	2nd
8:00 AM - 9:00 AM	Young Professional Mentor Breakfast	Hyatt	RegencyD	4th
8:00 AM - 5:00 PM	Technical Program Resource Center	LBCC	203B	2nd
9:00 AM - 11:50 AM	Critical Review	LBCC	Grand Ballroom	2nd
9:00 AM - 5:00 PM	IPEP Exams	Hyatt	Harbor	1st
9:30 AM - 6:30 PM	Exhibition Hours	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 6:30 PM	Association Resource Center and Bookstore	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 6:30 PM	The Hub	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 6:30 PM	Internet Café	LBCC	Exhibit Hall A	Exhibit
9:40 AM - 10:10 AM	Session Break / Exhibition	LBCC	Exhibit Hall A	Exhibit
10:10 AM - 11:50 AM	Technical Sessions	Refer to Page 69		
10:10 AM - 3:00 PM	Mini-Symposium: Impacts of Transportation Hubs & Ports	LBCC	101A	1st
10:15 AM - 1:15 PM	The Glory Days of The Queen Mary	Meet at 10:15 am at the LBCC Main Entrance on Pine Avenue.		
11:15 AM - 12:00 PM	Speed Networking	Hyatt	SeaviewC	1st
11:30 AM - 1:30 PM	Past Presidents' Lunch	Hyatt	RegencyE	4th
12:00 PM - 1:15 PM	Division & Technical Coordinating Committee Meetings	Refer to Page 15 and addendum		
12:00 PM - 3:00 PM	Technical Poster Setup	LBCC	104BC	1st
1:00 PM - 4:00 PM	ECi Final Presentations	LBCC	202C	2nd
1:20 PM - 3:00 PM	Technical Sessions	Refer to Page 74		
2:00 PM - 4:00 PM	Honors & Awards Rehearsal	LBCC	Grand Ballroom	2nd
2:15 PM - 6:30 PM	Harbor Cruise Whale Watching Excursion	Meet at 2:15 pm at the LBCC Main Entrance on Pine Avenue.		
2:30 PM - 3:30PM	Critical Review Committee	Hyatt	RegencyD	4th
3:00 PM - 3:40 PM	Session Break / Exhibition	LBCC	Exhibit Hall A	Exhibit
3:40 PM - 5:20 PM	Technical Poster Session	LBCC	104BC	1st
3:40 PM - 5:20 PM	Technical Poster Presentation Room	LBCC	104A	1st
4:30 PM - 7:00 PM	Port of Long Beach Boat Tour	Meet at 4:30 pm at the LBCC Main Entrance on Pine Avenue.		
5:00 PM - 6:30 PM	Networking Reception	LBCC	Exhibit Hall A	Exhibit
5:00 PM - 6:00 PM	Student Awards Ceremony & Reception	LBCC	204	2nd
5:00 PM - 6:00 PM	Division & Technical Coordinating Committee Meetings	Refer to Page 15 and Addendum		
6:00 PM - 7:00 PM	Councils' Reception	Hyatt	Seaview Foyer	1st
7:00 PM - 9:30 PM	Young Professional/Student Networking Reception	Off Site	Yard House (Shoreline Village)	
THURSDAY - JUNE 26		VENUE	ROOM NAME	FLOOR
7:30 AM - 5:00 PM	Annual Conference Registration	LBCC	Main Lobby	1st
7:00 AM - 5:00 PM	Monitors Room	LBCC	203B	2nd
7:00 AM - 7:45 AM	AM INSTRUCTION	Refer to Page 17		
12:30 PM - 1:15 PM	PM INSTRUCTION	Refer to Page 17		
7:30 AM - 8:45 AM	Social Program Breakfast	Hyatt	RegencyF	4th
8:00 AM - 5:00 PM	Technical Program Resource Center	LBCC	203B	2nd
8:00 AM - 11:50 AM	Technical Sessions	Refer to Page 84		
8:00 AM - 5:40 PM	Mini-Symposium: Impacts of Transportation Hubs & Ports	LBCC	101A	1st
8:15 AM - 3:00 PM	Lights, Camera, Hollywood Tour	Bus Departs at 8:15 am at the LBCC Main Entrance on Pine Avenue.		
8:30 AM - 9:30 AM	Exhibitors Meeting	LBCC	Exhibit Hall A	Exhibit
8:00 AM - 12:00 PM	IPEP Board of Trustee Meeting	Hyatt	Regency C	4th

DAILY SCHEDULE AT-A-GLANCE

TIME	EVENT	LOCATION		
9:30 AM - 12:00 PM	Exhibition Hours	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 12:00 PM	Association Resource Center and Bookstore	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 12:00 PM	Internet Café	LBCC	Exhibit Hall A	Exhibit
9:30 AM - 12:00 PM	The Hub	LBCC	Exhibit Hall A	Exhibit
9:40 AM - 10:10 AM	Session Break / Exhibition	LBCC	Exhibit Hall A	Exhibit
9:45 AM - 6:00 PM	NASA - Jet Propulsion Laboratory Tour	Bus Departs at 9:45 am at the LBCC Main Entrance on Pine Avenue.		
12:00 PM	Exhibits Teardown	LBCC	Exhibit Hall A	Exhibit
12:15 PM - 1:45 PM	Honors & Awards Ceremony and Luncheon	LBCC	Grand Ballroom	2nd
2:00 PM - 5:40 PM	Technical Sessions	Refer to Page 95		
2:30 PM - 3:30 PM	Student Chapters Exchange	LBCC	204	2nd
3:40 PM - 4:00 PM	Session Break	LBCC	Main Lobby	1st
4:00 PM - 5:00 PM	IPEP Annual Meeting	Hyatt	RegencyD	4th
5:30 PM - 6:30 PM	2015 Session Topics Review Meeting	LBCC	101B	1st
5:30 PM - 6:30 PM	The Committee for the Professional Development of Women Networking Event	Hyatt	Regency Foyer	4th
7:00 PM - 9:00 PM	Aquarium of the Pacific Gallery Viewing and Dinner	Off Site	Aquarium of the Pacific	
FRIDAY - JUNE 27		VENUE	ROOM NAME	FLOOR
7:00 AM - 8:00 AM	Technical Council Meeting	LBCC	104A	1st
7:30 AM - 11:00 AM	Annual Conference Registration	LBCC	Main Lobby	1st
7:00 AM - 12:00 PM	Monitors Room	LBCC	203B	2nd
7:00 AM - 7:45 AM	AM INSTRUCTION	Refer to Page 17		
8:00 AM - 11:50 AM	Technical Sessions	Refer to Page 108		
8:00 AM - 12:00 PM	Technical Program Resource Center	LBCC	203B	2nd
9:40 AM - 10:10 AM	Session Break	LBCC	Main Lobby	1st

CONTINUING EDUCATION CREDITS

Conference attendees may be eligible for continuing education credits (eg. PDHs, CLEs) based upon their participation in events. See page 22 for more information.



TECHNICAL COUNCIL AND TECHNICAL COORDINATING COMMITTEE MEETINGS

The Technical Council provides the technical expertise to determine and produce the technical programs at annual meetings and specialty conferences; report on state-of-the-art technology and on environmental issues, peer-review articles and publications. The Council is divided into four groups: Air Group; Environmental Management Group; Sustainability, Climate Change, Resource Conservation and Waste Management Group; and Industrial, Government, and Public Sectors Group. These groups are comprised of 10 divisions; the divisions are further divided into 28 technical coordinating committees (TCCs). Stop by the Technical Program Booth in the Main Lobby of the Long Beach Convention Center to learn more about opportunities to participate.

The Technical Council Divisions and TCCs are as follows:

Divisions	Division Names	TCCs
AP	Atmospheric Process Division	APP, APC, APM, APV
AA	Measurements, Monitoring, and Controls Division	AAM, AAE, AAC
EE	Effects & Exposure Division	HEE, RAM, ODR
EP	Program Administration Division	REG, EPE, PUB
ET	Transportation Division	OMS, PLU, CNV
SR	Sustainability and Resource Conservation Division	SUS, SRC
CC	Climate Change Impacts, Mitigation and Adaption Division	CCP, CCI
WM	Waste Processing, Waste-to-Energy and Bioenergy Division	WMB, WMR
IP	Industrial Processes and Sectors Division	CHP, IFB, MIN
GP	Government Facilities and Public Sectors Division	POW, FED, IEA
ITF	Inter-Committee Task Forces	NAN, PRG

Please refer to the charts below indentifying your division and the location of the Technical Council Meetings. Meetings will occur on a Division and TCC basis this year (Refer to Addendum for Division and TCC Meeting dates and times):

Meeting Room	LBCC 101A	LBCC 101B	LBCC 102A	LBCC 102B	LBCC 102C	LBCC 103A	LBCC 103B	LBCC 103C	LBCC 202A	LBCC 203A	LBCC 203C	LBCC 201
TCC Division	AP	AA	EE	EP	ET	SR	CC	WM	IP	GP	NAN	PRG

GET INVOLVED! To become involved in one or more of the TCCs, attend of the committee meetings here in Long Beach or contact the appropriate Division chair, attend a Division meeting, or visit the Technical Program Booth if interested.

Below is the schedule of Technical Council meeting times and locations (See Addendum for TCC Meeting dates and times).

Monday, June 23, 2014

8:30am – 5:00pm
 Technical Council Meeting
 Seaview A (Hyatt, 1st Floor)

Tuesday, June 24, 2014

10:30am – 11:30am
 Technical Council Town Hall Meeting
 201 (LBCC, 2nd Floor)

12:00pm-1:15pm
 Division & TCC Meetings (10 Divisions and 2 ITFs)
 See locations in above chart.

Wednesday, June 25, 2014

12:00pm – 1:15pm AND 5:00pm – 6:00pm
 Division & TCC Meetings
 See locations in above chart.

Thursday, June 26, 2014

5:30pm – 6:30pm
 2015 Session Topics Review Meeting
 Any members who wish to plan specific panel and platform sessions for the 2015 Annual Conference should attend this very short coordination session.
 101B (LBCC, 1st Floor)

Friday, June 27, 2014

7:00am – 8:00am
 Technical Council Meeting
 104A (LBCC, 1st Floor)

TECHNICAL COORDINATING COMMITTEES

TCC Title	Old TCC Code	New TCC Code	Division	Division Code	Group
Particulate Matter	AB-1	APP	Atmospheric Processes Division	AP	Air Group
Atmospheric Chemistry	AB-2	APC	Atmospheric Processes Division	AP	Air Group
Atmospheric Modeling and Meteorology	AB-3	APM	Atmospheric Processes Division	AP	Air Group
Visibility and Radiative Transfer	AB-6	APV	Atmospheric Processes Division	AP	Air Group
Measurement Techniques and Instrumentation	AM-3, AM-4, AO-1, AO-2 & AO-3	AAM	Measurements, Monitoring, and Controls Division	AA	Air Group
Measurements, Monitoring, Emission Inventory and Applications	AM-1,5	AAE	Measurements, Monitoring, and Controls Division	AA	Air Group
Control Technologies	AE-1 & AE-2	AAC	Measurements, Monitoring, and Controls Division	AA	Air Group
Health Effects & Exposure	AT-1, AT-3, EE-1 & AB-7	HEE	Effects & Exposure Division	EE	Environmental Management Group
Risk Assessment & EHS Management	EE-5 & EP-8	RAM	Effects & Exposure Division	EE	Environmental Management Group
Odors	EE-6	ODR	Effects & Exposure Division	EE	Environmental Management Group
Regulations, Legal Issues, and Permitting	EP-1 & EP-3	REG	Program Administration Division	EP	Environmental Management Group
Economics, Partnering, and Environmental Leadership	EP-2	EPE	Program Administration Division	EP	Environmental Management Group
Public Participation	EP-4 & EP-5	PUB	Program Administration Division	EP	Environmental Management Group
On & Off Road Mobile Sources	ET-1	OMS	Transportation Division	ET	Environmental Management Group
Transportation Policies & Land Use	ET-2	PLU	Transportation Division	ET	Environmental Management Group
Community Noise & Vibration	ET-3	CNV	Transportation Division	ET	Environmental Management Group
Sustainability	ES-4	SUS	Sustainability and Resource Conservation Division	SR	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Resource Conservation	WM-1 & ES-1	SRC	Sustainability and Resource Conservation Division	SR	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Climate Change Policy, Strategy, and Regulations	ES-5	CCP	Climate Change Impacts, Mitigation and Adaption Division	CC	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Climate Change Impacts and Adaption	ES-5	CCI	Climate Change Impacts, Mitigation and Adaption Division	CC	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Waste Resource Recovery, Processing, and Bioenergy	WM-3 & WM-4	WMB	Waste Processing, Waste-to-Energy and Bioenergy Division	WM	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Waste Characterization and Site Remediation	WR-1 & WR-2	WMR	Waste Processing, Waste-to-Energy and Bioenergy Division	WM	Sustainability, Climate Change, Resource Conservation and Waste Management Group
Chemical Petroleum	EI-4	CHP	Industrial Processes and Sectors Division	IP	Industrial, Government, and Public Sectors Group
Industrial Furnaces & Boilers	EI-3	IFB	Industrial Processes and Sectors Division	IP	Industrial, Government, and Public Sectors Group
Mineral Extraction & Processing	EI-5 & EI-6	MIN	Industrial Processes and Sectors Division	IP	Industrial, Government, and Public Sectors Group
Power Generation & Renewable Energy	EI-2 & EI-7	POW	Government Facilities and Public Sectors Division	GP	Industrial, Government, and Public Sectors Group
Federal Facilities	EI-1	FED	Government Facilities and Public Sectors Division	GP	Industrial, Government, and Public Sectors Group
Indigenous Environmental Affairs	ITF-11	IEA	Government Facilities and Public Sectors Division	GP	Industrial, Government, and Public Sectors Group
Nanoparticles ITF	ITF-13	NAN		ITFs	Inter-Committee Task Forces
Non-ACE Technical Programs ITF	ITF-12	PRG		ITFs	Inter-Committee Task Forces

GENERAL INFORMATION

Registration Hours

LBCC (Main Lobby)

Sunday, June 22	7:00 am–5:00 pm
Monday, June 23	7:00 am–5:00 pm
Tuesday, June 24	7:00 am–5:00 pm
Wednesday, June 25	7:00 am–5:00 pm
Thursday, June 26	7:30 am–5:00 pm
Friday, June 27	7:30 am–11:00 am

Long Beach Local Host Booth:

LBCC (Main Lobby)

Tuesday, June 24	7:00 am–5:00 pm
Wednesday, June 25	7:00 am–5:00 pm
Thursday, June 26	7:30 am–5:00 pm
Friday, June 27	7:30 am–11:00 am

Business Center

There is no Business Center within the Long Beach Convention Center. Please use the business center at the hotel you are staying with.

Technical Program Booth:

LBCC (Main Lobby)

Technical Program – How Can We Make It Better?

How do I find experts in my field to talk to one-on-one? How can I learn about innovative techniques months before the Annual Conference? How can I help plan a great technical session for next year's Annual Conference and other A&WMA Events? Stop by the Technical Program Booth in the Long Beach Convention Center (Main Lobby) to learn more from the Technical Council leaders and find out how you can participate in developing the Technical Program. All volunteers are welcome.

Hours:

Tuesday – Thursday	8:00 am–3:00 pm
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Exhibition Hours

LBCC (Exhibition Hall A)

Tuesday, June 24	10:30 am–5:30 pm
Wednesday, June 25	9:30 am–6:30 pm
Thursday, June 26	9:30 am–12:00 pm

Association Resource Center and Bookstore:

Long Beach Convention Center - Exhibition Hall A – Booth 512

Monitor Room:

LBCC (Room 203B)

For those of you that have been assigned to monitor a technical session, please report to the monitor room to receive your materials and instructions. Plan to attend the instructional session on the same day as your monitor duties. If you are monitoring a morning session, attend the 7:00 am – 7:45 am training session (Wednesday-Friday). Afternoon monitors should attend the 12:30 pm – 1:15 pm training session (offered Tuesday-Thursday).

Technical Program Resource Center:

LBCC (Room 203B)

Do you have a session that you want to propose for next year's annual conference? Come by the Technical Program Resource Center to share your ideas for the 2015 Technical Program. The Technical Program Resource Center is also available for authors to preview their presentations and session chairs to print out presenter bios.

Tuesday, June 24	11:00 am–5:00 pm
Wednesday, June 25	8:00 am–5:00 pm
Thursday, June 26	8:00 am–5:00 pm
Friday, June 27	8:00 am–12:00 pm

Session Breaks:

Long Beach Convention Center (Exhibition Hall A & Technical Sessions Hallway*)

Tuesday, June 24	10:30 am–11:30 am & 3:00 pm–4:00 pm
Wednesday, June 25	9:40 am–10:10 am & 3:00 pm–3:40 pm
Thursday, June 26	9:40 am–10:10 am & 3:40 pm–4:00 pm*
Friday, June 27	9:40 am–10:10 am*

Long Beach Convention Center “Savor” Concessions

The Long Beach Convention Center “Savor” Concessions will be opened to grab a bite to eat during the day. Visit one of their locations:

PROM CAFÉ (Main Lobby)

Serving: Grab & Go Sandwiches and Salads, Pizza, Panini's, Beverages, and STARBUCKS.

Tuesday, June 24	8:00 am–7:30 pm
Wednesday, June 25	8:00 am–6:30 pm
Thursday, June 26	8:00 am–5:00 pm

SEASIDE (Exhibit Hall A)

Serving: Grab & Go Sandwiches and Salads, Pizza, Panini's, Beverages, STARBUCKS, hotdogs, and pretzels.

Tuesday, June 24	11:00 am–5:00 pm
Wednesday, June 25	11:00 am–4:00 pm
Thursday, June 26	10:00 am–12:00 pm

KEYNOTE PRESENTATION

Tuesday, June 24 • 8:15 am–10:15 am and Wednesday, June 25 • 8:00 am–8:45 am
Grand Ballroom (LBCC, 2nd Floor) • Sponsored by: Tesoro Corporation



Update on Clean Air Act Actions Tuesday, June 24 • 8:25 am

Janet McCabe
Acting Assistant Administrator for
the Office of Air and Radiation
U.S. Environmental Protection Agency

EPA's Office of Air and Radiation has worked closely with the states, Tribes, industry, the environmental community and other groups to develop and implement a number of important actions that will improve air quality, protect public health and address our changing climate. Chief among these actions is the recently proposed carbon pollution guidelines for existing power plants. Ms. McCabe's presentation will provide an overview of the new proposal, as well as an update on the other actions EPA is taking under President Obama's Climate Action Plan. The agency also continues its work to update national air quality standards, cut harmful air pollution and to ensure that the implementation of national actions continues to move forward smoothly.



Natural Gas Pathways: Towards a Clean and Renewable Energy Future Tuesday, June 24 • 8:55 am

Dennis Arriola
President, Southern California Gas Company

The customers of Southern California Gas have faced some of the hardest air quality challenges in the world. Through technology development, energy efficiency programs, and sensible regulation, we have supported our customers' success in substantially reducing their emissions of ozone forming compounds and greenhouse gases. However the air quality challenges of the future are even harder. Mr. Arriola will discuss the role of the strategies for near zero combustion technologies and decarbonization of pipeline gas in California's planning to reach its health based air quality goals, and in reaching the state's greenhouse emission reduction target in 2050.



Innovation & Collaboration: Improving the Environmental Performance of the Aviation Industry Tuesday, June 24 • 9:25 am

Steve Shestag, PG
Director, Enterprise Remediation
Environment, Health and Safety
The Boeing Company

The aviation industry was the first sector to set ambitious targets for CO₂ emissions reduction, including industry-wide carbon-neutral growth from 2020 and a 50 percent reduction in net CO₂ emissions in 2050 compared to 2005 levels. As its 100 year anniversary approaches, Boeing continues to lead the way in pioneering new technologies that further enhance the performance of its products and efficiency of its operations. Through its leadership in international organizations, Boeing also works with its partners, competitors, customers and governments to drive environmental improvements across the aviation industry. Director of Enterprise Remediation Steve Shestag will outline Boeing's environmental strategy and discuss how the company's commitment to collaboration not only moves the industry toward its reduction targets, but translates to a competitive advantage and better corporate social responsibility.

Wednesday, June 25 • 8:00 am–8:45 am
Grand Ballroom (LBCC, 2nd Floor)



South Coast: 'Living Laboratory' for a Clean-Energy Future Wednesday, June 25 • 8:00 am

Barry R. Wallerstein, D. Env.
Executive Officer, South Coast Air Quality
Management District

The South Coast Air Quality Management District leads efforts to achieve health-based clean air standards on behalf of the more than 16 million residents of the Los Angeles metropolitan region. For decades, combined forces of public demand, strategic pollution control, and technical innovation have brought about dramatically improved air quality in greater L.A. – while also enabling significant growth and economic development. To meet upcoming deadlines for strengthened ozone and PM standards, Southern California has its work cut out, as NO_x emissions (largely from goods movement sources) will need to be reduced an additional two-thirds by 2023 and three-quarters by 2032. South Coast AQMD seeks to accelerate the region's 'living laboratory' approach, where diverse stakeholders come together to shape innovative technologies and policies within real-life contexts – and align forward-thinking infrastructure plans that provide cost-efficient co-benefits for air, energy, water, climate, and mobility.

44th ANNUAL CRITICAL REVIEW

Public Health and Components of Particulate Matter: The Changing Assessment of Black Carbon
Wednesday, June 25 • 9:00 am - 11:50 am • Grand Ballroom (LBCC, 2nd Floor)

Sponsored by: A&WMA Louisiana Section



Presented by: Thomas J. Grahame, U.S. Department of Energy

Review Co-Authors: Richard S. Schlesinger, Pace University; and
Rebecca Klemm, Klemm Analysis Group

In 2012, the World Health Organization (WHO) classified diesel emissions as carcinogenic, and the European branch of WHO suggested creating a public health standard for airborne black carbon (BC). In 2011, European researchers found that life expectancy could be extended four to nine times by reducing a unit of BC, versus reducing a unit of fine particulate matter mass (PM_{2.5}—particulate matter 2.5 micrometers or smaller). Only recently could such determinations be made. Steady improvements in research methodologies now enable such judgments.

In this Critical Review, the authors survey epidemiological and toxicological literature regarding carbonaceous combustion emissions, as research methodologies have improved over time, with a focus on studies of BC, diesel, and traffic emissions in the Western countries (where daily BC emissions are mainly from diesels). The authors also examine the effects of other carbonaceous emissions (e.g., residential burning of biomass and coal without controls, mainly in developing countries).

Throughout the late 1990s, air pollution epidemiology studies rarely included species not routinely monitored (e.g., BC). As ambient concentrations of additional PM_{2.5} species became more widely available after 2000, they became included in epidemiological studies.

Pollution concentrations, which more accurately reflected subject exposure, also improved models. Natural “interventions” (i.e., reductions in emissions concurrent with fuel changes; introduction of ventilation in highway tunnels; implementation of electronic toll payment systems) demonstrated health benefits of reducing specific emissions. Toxicology studies provided plausible biological mechanisms by which different PM species (e.g., carbonaceous species) may cause harm, aiding interpretation of epidemiological studies.

This Critical Review finds that BC from various sources appears to be causally involved in all-cause, lung cancer, and cardiovascular mortality, cardiovascular morbidity, and perhaps adverse birth and brain effects.

Moving forward, the authors recommend that an existing U.S. Environmental Protection Agency (EPA) collection of guidelines for judging possible causality of PM_{2.5} be used to assess, globally, which PM_{2.5} species are most harmful to public health.

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44th ANNUAL CRITICAL REVIEW

Public Health and Components of Particulate Matter: The Changing Assessment of Black Carbon
Wednesday, June 25 • 9:00 am - 11:50 am • Grand Ballroom (LBCC, 2nd Floor)
Sponsored by: A&WMA Louisiana Section

About the Presenter



Thomas J. Grahame has worked on economic and environmental issues related to energy and electricity for the past 37 years, including the past 35 at the U.S. Department of Energy (DOE). Prior to his DOE work, he analyzed energy issues for U.S. Senator John Durkin (D, NH), serving on the U.S. Senate Energy and Natural Resources Committee, where much of his time was involved with the Public Utility Regulatory Policies Act (PURPA), a law that began to open the door to competition in electricity generation in the early 1980s. Mr. Grahame has an undergraduate degree in Government, and a master's degree in city and regional planning, both from Harvard University.

About the Co-Authors



Richard B. Schlesinger, Ph.D., is associate dean for academic affairs and research in the Dyson College of Arts and Sciences of Pace University, New York, NY, and professor of biology and environmental science. He received his bachelor of arts degree in biology from Queens College of the City University of NY, and his master of science and doctorate degrees in biology/environmental health science, from New York University. Prior to his appointment at Pace University, he was professor of environmental medicine and director of the systemic toxicology program in the Department of Environmental Medicine, NYU School of Medicine, as well as director of the graduate program in environmental health science at the NYU Graduate School of Arts and Sciences. He has developed and taught various courses at the graduate and undergraduate level in the areas of general toxicology, systemic toxicology, pulmonary toxicology, environmental health, and industrial hygiene at New York University.

Invited Discussants

Following the review presentation, a panel of invited experts will critique the presentation and the authors' conclusions, and will offer their views on the topic. This year's invited discussants are:

- **David Diaz-Sanchez and Daniel Costa**, U.S. Environmental Protection Agency;
- **Dan Greenbaum**, Health Effects Institute;
- **Ronald Wyzga**, Electric Power Research Institute (EPRI);
- **Michael Kleinman**, University of California, Irvine; and
- **John Watson**, Desert Research Institute.



Rebecca Klemm, Ph.D., is president of Klemm Analysis Group, and has directed many projects in the area of health services research for the U.S. Departments of Veterans Affairs and of Health and Human Services. Dr. Klemm has also specialized in analyses regarding public policy and regulation within a legal environment for the past 20 years. Dr. Klemm serves as principal investigator of the coordinating center for a large multi-center translational study of diabetes in managed care organizations for the Centers for Disease Control and Prevention (CDC). She has served as technical director of a contract to provide statistical, epidemiologic, and data management services to CDC for several years. Dr. Klemm has served two terms as one of the seven scientists of the National Conference of Lawyers and Scientists of the American Association for the Advancement of Science and the Science and Technology Section, American Bar Association.

Join the Discussion

Comments also will be solicited from the floor and from written submissions to the Critical Review Committee Chair. The Chair will then synthesize these points into a Discussion Paper that will be published in the October 2014 issue of Journal of the Air & Waste Management Association. Comments should be submitted in writing to A. Gwen Eklund, Critical Review Committee Chair, at geklund@earthlink.net by no later than July 21, 2014.

Critical Review Committee

A. Gwen Eklund, Chair
George M. Hidy, Immediate Past Chair (2009–2012)
Samuel L. Altshuler
Patricia A. Brush, Technical Council Chair
Judith C. Chow, Past Chair (2001–2008)

Luis Diaz-Robles
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Marcel Halberstadt
Michael T. Kleinman
Naresh Kumar
Peter K. Mueller
Thomas Overcamp
Eric Stevenson
Abhilash Vijayan
John G. Watson, Past Chair (1994–1997)

Get involved with the Critical Review Committee and help further our scientific understand by attending the Annual Meeting of the Critical Review Committee on Wednesday, June 25, 2014, Room: Regency D, 4th Floor, Hyatt Long Beach, at 2:30 – 3:30 p.m.

MINI-SYMPOSIUM: IMPACTS OF TRANSPORTATION HUBS & PORTS

Tuesday, June 24 – Thursday, June 26 • 101A (LBCC, 1st Floor)

Sponsored by: Port of Long Beach



A special mini-symposium is planned for the 2014 Annual Conference & Exhibition, comprising a single track of sequential sessions on Transportation Hubs & Ports. The mini-symposium sessions will be held over the course of 4 days and provide an exclusive forum emphasizing critical environmental issues facing a vital sector of the American economy. The mini-symposium will provide diverse perspectives from representatives of industry; air quality, environmental, and health practitioners; regulators; policy makers; researchers; and community organizations with the mutual goal of protecting public health and welfare from adverse environmental impacts.

A comprehensive agenda has been assembled addressing topics of local, national, and international interests. Conference attendees may choose from platform presentations focusing on the Long Beach and Los Angeles ports; emission reduction

measures; analysis techniques; diesel emissions; and greenhouse gas/sustainability themes – presentations which cover the extent of transportation modes of port operations, freight and dray trucks, ships, locomotives, and aircraft. Attendees may also attend expert panel sessions on policy related to goods movement and ports; air pollution reduction strategies; air quality in the vicinity of Los Angeles International Airport; and health and community impacts associated with transportation hubs and ports.

The mini-symposium format provides attendees with many unique learning and interaction opportunities with experts and fellow attendees sharing common interests in this important segment of our profession.



PROFESSIONAL DEVELOPMENT COURSES

Please view the Addendum for the Professional Development Course Grid, which includes course titles, instructors, locations and times.

All courses will include a course manual and refreshment breaks from 10:00 am–10:30 am and 3:00 pm–3:30 pm. Courses that run from 8:00 am–5:00 pm include continental breakfast from 7:00 am–8:00 am, and lunch from 12:00 pm–1:00 pm. Registration is available all day for courses. Visit the main registration area for pricing, full course descriptions, and to register.

CEU INFORMATION

Course attendees may request a certificate of participation. This certificate may be eligible for Continuing Education Units (CEUs) and in some cases Continuing Legal Education (CLE) and/or Professional Engineering (P.E.) credit.

Half-day courses consist of 3½ contact hours; one-day courses 7 hours. Credit for the Annual Conference (Technical Program) will be awarded on a daily basis. To confirm your attendance and to receive a certificate of participation you must visit the registration desk or see your course instructor for the proper application procedure. All certificate requests will be processed after the Annual Conference.

YOUNG PROFESSIONAL/ STUDENT JOINT EVENTS

YOUNG PROFESSIONAL MENTOR BREAKFAST

Sponsored by: Mojave Desert AQMD

Wednesday, June 25 • 8:00 am–9:00 am

RegencyD (Hyatt, 4th Floor)

Price: \$15

This annual professional networking breakfast is designed for young professionals and recent graduates to have the opportunity to network and be mentored by an experienced environmental professional. For established professionals this is a great opportunity to network with and mentor young professionals and recent graduates. Pre-Registration was required for this event. Ticket required.



YOUNG PROFESSIONAL/ STUDENT NETWORKING RECEPTION

Sponsored by: BMW Manufacturing Co., LLC

Wednesday, June 25 • 7:00 pm–9:30 pm

Yard House

401 Shoreline Village Dr, Long Beach, CA 90802

Students – \$15, Young Professionals – \$20, Professionals – \$35
A networking reception geared specifically for young professionals and students. Everyone is invited to network with young professionals, students, and A&WMA leadership over appetizers and drinks at the Yard House, a casual eatery known for their 250 taps of imported, craft and specialty ales and lagers. The Yard House is located in the Shoreline Village, a waterfront shopping and dining and entertainment center that overlooks Long Beach's gorgeous Rainbow Harbor. Ticket required.



BMW Manufacturing Co.

SPEED NETWORKING

Wednesday, June 25 • 11:15 am–12:00 pm

SeaviewC (Hyatt, 1st Floor)

Don't miss this opportunity to practice your networking skills! Young professionals (and professionals) are invited to engage students in a fast paced networking exercise. Answer questions, provide perspectives, and help students get the inside track on what it's like being a practicing professional.



STUDENT EVENTS

EDUCATION COUNCIL COMMITTEE MEETINGS

Professional Development Division, Higher Education Division and Public Education Division

Tuesday, June 24 • 8:00–10:30 am and 1:30 pm–3:00 pm
HarborABC (Hyatt, 1st Floor)

Get involved with leadership opportunities by actively participating in Education Council Committee meetings. It is a great way to have a significant impact on your profession and to network with your colleagues.

STUDENT WELCOME RECEPTION

Tuesday, June 24 • 11:30 am–12:30 pm

Sponsored by: **The Boeing Company**

Exhibit Hall A (LBCC, Exhibit Floor)

Students participating in the Student Paper, Student Poster Competition and the Environmental Challenge International (ECi) are invited to meet and network with fellow students from around the world. Poster setup guidelines and ECi rules will be reviewed.



ACADEMIC CAREER PREPARATION WORKSHOP

Tuesday, June 25 • 12:45 pm–1:45 pm

RegencyB (Hyatt, 4th Floor)

Students interested in pursuing jobs in academia are invited to learn about the academic job search process and how to prepare for an academic job. This is also an opportunity to meet with university representatives.

STUDENT AND ECi POSTER SET UP

Tuesday, June 24 • 2:00 pm–2:30 pm

Exhibit Hall A (LBCC, Exhibit Floor)

STUDENT POSTER COMPETITION

Tuesday, June 24 • 2:30 pm–5:30 pm

Sponsored by: **The Boeing Company**

Exhibit Hall A (LBCC, Exhibit Floor)

Visit the exhibit hall to watch as students present their posters to the judges during this year's Student Poster Competition. The competition recognizes student posters to be the best among those considered in the undergraduate, masters and doctoral categories. Awards for exceptional posters will be provided at the Student Awards Ceremony and Reception on Wednesday, June 25.



ECi POSTER JUDGING

Tuesday, June 24 • 2:30 pm–5:30 pm

Sponsored by: **ponsored by: A&WMA Sections & Chapters and URS Corporation**

Exhibit Hall A (LBCC, Exhibit Floor)

Join ECi teams as they interact (often in surprising ways) with role players, and present their posters to the judges.



AAEES-AEESP-A&WMA MEET AND GREET LECTURE AND CONTINENTAL BREAKFAST

Wednesday, June 25 • 7:30 am–8:30 am

SeaviewB (Hyatt, 1st Floor)

All academicians (i.e. students, professionals, and contributors to A&WMA's educational programs) are welcome to this great opportunity to network with colleagues and enjoy a continental breakfast. Dr. Lynn M. Hildemann, Professor in the Department of Civil and Environmental Engineering at Stanford University, will serve as this event's guest speaker.

ECi FINAL PRESENTATIONS

Wednesday, June 25 • 1:00 pm–4:00 pm

Sponsored by: **ponsored by: A&WMA Sections & Chapters and URS Corporation**

202C (Long Beach Convention Center, 2nd Floor)

Watch the top ranking ECi teams present their final problem solutions using the "tweak" they received prior to the conference.



STUDENT AWARDS CEREMONY AND RECEPTION

Wednesday, June 25 • 5:00 pm–6:00 pm

Sponsored by: **Western States Petroleum Association**

204 (LBCC, 2nd Floor)

All students and professionals participating with the Student Program are invited to the Student Awards Ceremony and Reception, which will honor exceptional students who have received scholarships, poster awards, platform paper awards, thesis and dissertation awards, and ECi awards. The Exceptional Education Award will also be awarded at this event. Laura Cremer, Vitality Committee Chair, Young Professionals Advisory Council, will serve as a guest speaker for the event.



Western States Petroleum Association

STUDENT CHAPTERS EXCHANGE

Thursday, June 26 • 2:30 pm–3:30 pm

204 (LBCC, 2nd Floor)

Join your fellow students, Education Council representatives, and A&WMA staff for the Student Chapter Exchange to network and exchange ideas about A&WMA's Student Chapters. Learn what it means to be a part of a student chapter or get tips on how to form a chapter of your own.

Special Thank You to A&WMA's Sections and Chapters for Their Generous Support of the ECi Competition:

Alaska Chapter	Lake Michigan States Section
Florida Section	Louisiana Section
Golden West Section	Oregon Chapter
Gulf Coast Section	PNWIS Section

TECHNICAL TOURS

Orange County Sanitation District: Tour of Renewable Hydrogen Station, Waste Water Treatment Plant and Groundwater Replenishment System

Tuesday, June 24 10:15 am–6:00 pm

Pre-registration was required for this tour.

Bus departs at 10:15 am at the Long Beach Convention Center Main Entrance on Pine Avenue.

Lunch is not included. Ticket required.

Port of Long Beach Boat Tour

Wednesday, June 25 4:30 pm–7:00 pm

Pre-registration was required for this tour.

Meet at 4:30 pm at the Long Beach Convention Center Main Entrance on Pine Avenue. Ticket required.

NASA – Jet Propulsion Laboratory Tour

Thursday, June 26 9:45 am–6:00 pm

Pre-registration was required for this tour.

Bus departs at 9:45 am at the Long Beach Convention Center Main Entrance on Pine Avenue.

Lunch is not included. Ticket required.

LONG BEACH TOURS

The Glory Days of the Queen Mary

Wednesday, June 25 • 10:15 am–1:15 pm

Pre-registration was required for this tour.

Meet at 10:15 am at the Long Beach Convention Center Main Entrance on Pine Avenue. Ticket required.

Harbor Cruise Whale Watching Excursion

Wednesday, June 25 • 2:15 pm–6:30 pm

Pre-registration was required for this tour.

Meet at 2:15 pm at the Long Beach Convention Center Main Entrance on Pine Avenue. Ticket required.

Lights, Camera, Hollywood Tour

Thursday, June 26 • 8:15 am–3:00 pm

Pre-registration was required for this tour.

Bus departs at 8:15 am at the Long Beach Convention Center Main Entrance on Pine Avenue.

Lunch is not included. Ticket required.

COMPLIANCE QUESTIONS?

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NETWORKING EVENTS

*Event included with full conference registration.

A&WMA Scholarship Golf Open

Skylinks Golf Course
4800 E Wardlow Rd, Long Beach, CA 90808
Monday, June 23 • 11:30 am Tee Time
Bus departs at 9:30 am from the Long Beach Convention Center
Main Entrance on Pine Avenue.

Price: \$120 per player; \$400 per foursome

Kick off the annual conference with a fun day of golf, all while supporting the A&WMA Scholarship Fund! Skylinks Golf Course in Long Beach, CA is a premier course that was designed by leading golf course architect Cal Olson. It features Bermuda grass fairways, wide-open links-style play, and superb greens. The event includes green and cart fee and a box lunch. There will be door prizes and several skill games. The A&WMA Scholarship Golf Open is the total package for golfers of any level who are looking for a superior golfing experience. Don't miss this fun event and the chance to support this wonderful cause! Ticket required.



The Committee for the Professional Development of Women Luncheon and Networking Event

Tuesday, June 24 • 10:30 am-1:15 pm

Sponsored by: Capital Power Corporation

SeaviewAB (Hyatt, 1st Floor)

Price: \$45



This event will include a hands-on, skills-building program, followed by lunch and a keynote address by Ms. Judy B. Yorke, founder and President of Yorke Engineering, LLC. The Committee's goal is to draw upon the unique perspectives and talents of women to further the goals of the Association and to mentor women in the profession. Everyone is encouraged to attend! Ticket required. All attendees of the Women's Luncheon will receive a complimentary ticket to a Networking Event on Thursday, June 26 from 5:30 pm-6:30 pm in the Regency Foyer (Hyatt, 4th Floor). Ticket required.

Grand Reception*

Tuesday, June 24 • 6:45 pm-8:00 pm

Sponsored by: Pacific Gas & Electric and AECOM

104 ABC (LBCC, 1st Floor)

Price: \$50

Unwind after all the conference's opening day excitement at the Grand Reception. Much like Long Beach, this year's reception will have a friendly, relaxed atmosphere. Come network with the A&WMA community while you enjoy delicious appetizers and festive drinks. The Grand Reception will take place in the Long Beach Convention center and will feature views of Long Beach. Ticket required.



Yoga

Wednesday, June 25 • 7:00 am-8:30 am

ShorelineAB (Hyatt, 1st Floor)

\$15 donation

This yoga class is intended to help increase your strength, flexibility, and concentration. No prior experience or knowledge of yoga practices is needed to participate. Yoga is science of training your mind. Your \$15 donation will go to the Sarathi Yoga Foundation, a local foundation that offers classes, seminars, and retreats in yoga.

AEESP-AAEES-A&WMA Meet and Greet Lecture and Continental Breakfast

Wednesday, June 25 • 7:30 am-8:30 am

SeaviewB (Hyatt, 1st Floor)

All academicians (i.e. students, professionals, and contributors to A&WMA's educational programs) are welcome to this great opportunity to network with colleagues and enjoy a continental breakfast. Dr. Lynn M. Hildemann, Professor in the Department of Civil and Environmental Engineering at Stanford University, will serve as this event's guest speaker.

Scholarship Raffle Drawing

Tuesday, June 24 • During the Grand Reception



Help support future environmental scientists and leaders by participating in the Scholarship Raffle Drawing. This year's prize will be an iPad donated by Delta Air Quality Services. Tickets will be sold at the 2014 Local Host Booth near Registration, on Sunday, June 22, Monday, June 23 and Tuesday, June 24. In addition, tickets will be sold at the Golf Outing on Monday, June 23 and at the Grand Reception. The cost of the tickets will be: 1 for \$5 or 5 for \$20 (Cash only accepted). The winner will be drawn at the Grand Reception. Winner does not need to be present. The winner can pick up their prize at the registration desk. All proceeds directly benefit the A&WMA Scholarship Fund.

NETWORKING EVENTS

*Event included with full conference registration.



NETWORKING RECEPTION*

Wednesday, June 25 • 5:00 pm–6:30 pm

Sponsored by: Chevron Products Company
Exhibit Hall A (LBCC, Exhibit Floor)

Network with industry professionals and delight in some Long Beach appetizers and drinks. Learn about the latest environmental products and services while exploring the booths and displays. Don't miss the chance to win some great prizes in this year's attendee give-away program.

ANNUAL HONORS & AWARDS CEREMONY AND LUNCHEON*

Thursday, June 26 • 12:15 pm–1:45 pm

Sponsored by: 3M and Southern California Gas Company

Grand Ballroom (LBCC, 2nd Floor)
Price: \$50

Join A&WMA members at this popular luncheon as they recognize the accomplishments of outstanding individuals, organizations, and companies. Ticket required.



AQUARIUM OF THE PACIFIC GALLERY VIEWING AND DINNER

100 Aquarium Way, Long Beach, CA 90802

Thursday, June 26 • 7:00 pm–7:30 pm (Gallery Viewing); 7:30 pm–9:00 pm (Dinner)

Sponsored by: A&WMA West Coast Section

Price: \$90 per person this includes exhibit exploration and sit-down dinner.

Enjoy a one-of-a-kind dinner under the sea at the Aquarium of the Pacific. Prior to dinner in the Great Hall, guests will have the opportunity to explore the Blue Cavern, Ocean Exploration, and Southern California Baja Galleries. Seating is limited. Register today to reserve your spot! Ticket required.



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GET INVOLVED WITH A&WMA

At A&WMA we depend on our volunteers to provide the foundation and expertise that sets us apart from other environmental associations. In order to continue to offer conferences, programs and webinars that cover the latest topics, we rely on our members to take an active role in the Association by:

- Sitting on the Board or becoming a Section or Chapter officer locally
- Writing and presenting a paper at the Annual Conference & Exhibition
- Contributing to a specialty conference
- Developing a Webinar or being a panelist
- Teaching a professional development course
- Submitting a technical paper for the *Journal*, or an article for *EM*
- Participating in a council or committee

Volunteers can serve on each of our four councils: Technical, Education, Sections & Chapters, or Young Professionals Advisory. Attend a council meeting on-site at the Annual Conference or e-mail info@awma.org to learn more!

Technical Council

Monday, June 23 • 8:30 am–5:00 pm
Seaview A (Hyatt, 1st Floor)

Friday, June 27 • 7:00 am–8:00 am
104A (LBCC, 1st Floor)

The Technical Council provides the technical expertise to determine and produce the technical programs at annual meetings and specialty conferences; report on state-of-the-art technology and on environmental issues, peer-review articles and publications. The Council is divided into four groups: Air Group; Environmental Management Group; Sustainability, Climate Change, Resource Conservation and Waste Management Group; and Industrial, Government, and Public Sectors Group. These groups are comprised of 10 divisions; the divisions are further divided into technical coordinating committees (TCCs). Stop by the Technical Program Booth in the Main Lobby of the Long Beach Convention Center to learn more about opportunities to participate.

Education Council

Tuesday, June 24 • 8:00 am–10:30 am; 1:30 pm–3:00 pm
HarborABC (Hyatt, 1st Floor)

The Education Council provides input into the development of products and services offered to A&WMA members such as professional development educational needs. The Education Council is made up of three divisions: Professional Development, Higher Education and Public Education. Professional

Development is responsible for continuing education programs and services related to electronic learning. Higher Education is responsible for university education, student development, and student membership. Public Education is responsible for developing programs on environmental issues for the members to become more actively involved in environmental education efforts.

Sections & Chapters Council

Monday, June 23 • 8:30 am–5:00 pm
SeaviewC (Hyatt, 1st Floor)

The Sections and Chapters Council enables, encourages, and ensures strong sections and chapters to fulfill the core purpose of the Association at the local level while communicating closely with Association leadership. It is comprised of a Chair, Vice Chair, six Committee Chairs, several advisors, and one representative from each Section and Chapter of the Association.

Young Professionals Advisory Council

Monday, June 23 • 8:30 am–5:00 pm
SeaviewB (Hyatt, 1st Floor)

The Young Professional Advisory Council strives to recruit, retain, and engage YPs as well as advise other councils and the board on services and activities to attract YPs. This Council also facilitates the integration of student members into the Association upon graduation.



COMMITMENT TO THE ENVIRONMENT

As an association of environmental professionals, we strive to make our conferences as environmentally friendly as possible. The site of the 2014 Annual Conference & Exhibition, the Long Beach Convention Center, is committed to sustainable practices and reducing its carbon impact on the environment.

Here are a few of the Long Beach Convention Center's Green Efforts:

- Exhibit Halls, Terrace Theater and Center Theater all have “cool roofs” on them. These roofs act as insulation when outside temperatures are cool and also retard heat during warm sunny days.
- Solar panels were installed on the roof of the Exhibit Halls in September 2006 and to date they have produced enough energy to provide power to 21,500 homes for a single day. The energy that has been provided by these solar panels has also resulted in the elimination of the pollution that an average passenger vehicle emits over a period of 49,000 days.
- Attempts to decrease energy consumption are also made through the participation in a special program with Southern California Edison called the Demand Bidding Program. Under this program, the facility agrees to reduce energy consumption by a specific amount during certain high demand or shortage periods and in twenty (22) days of participation in 2007, the equivalent of power to 2,840 homes for a single day was provided as well as eliminating the pollution for an average passenger vehicle for the equivalent of 6,460 days.
- Fifty (50) waste containers that are specifically identified for recyclable materials are located within the facility.
- Paper products that are made of 100% renewable fiber are utilized.
- Housekeeping cleaning products that are considered to be environmentally friendly are utilized.
- A majority of the lighting fixtures around the facility have been retrofitted to accept high efficiency bulbs.
- Motion sensors control all lighting in the meeting rooms of the facility.
- Lighting in the Exhibition Halls is reduced by fifty percent (50%) during move-in and move-out periods of events.
- Rubber wood chips, made out of recycled tires, have been used to complement our indoor/outdoor landscaping. The use of this product has resulted in the materials from approximately 600 20 lb. automobile tires not being placed in a landfill



THANK YOU!

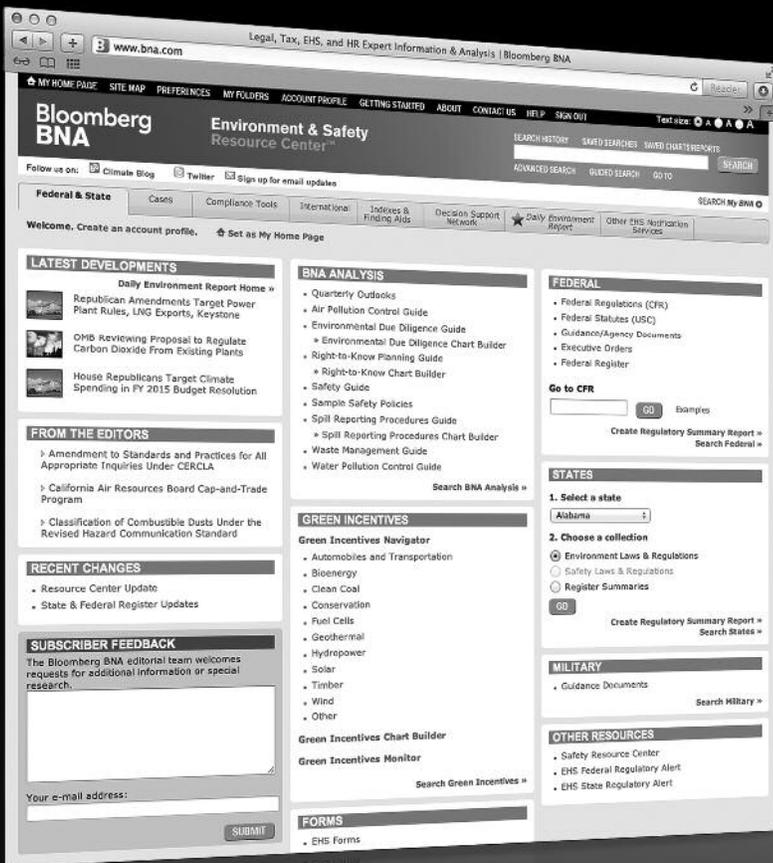
To Our Organizational Members for Your Support and Participation

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ADEC Division Of Air Quality
AECOM
AET Environmental
Air Quality Services, LLC
Air Resource Specialists, Inc.
Akron Regional AQMD
Alberta Environment
ALL4 Inc.
Allegheny County Health Department
AMEC
American Airlines
American Engineering Testing, Inc
American Petroleum Institute (API)
ARCADIS US, Inc.
Archer Daniels Midland Company
Ash Grove Cement Company
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Barr Engineering Company
Battelle
Bingham McHale LLP
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Genzyme Corporation
Georgia-Pacific LLC
Golder Associates Inc.
Gopher Resource
Hennepin County
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H-Gac
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IDEM
Intrinsic Environmental Sciences Inc.
IPR - EMS
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KEY Environmental, Inc.
KS Dept. of Health & Environment
Lake Michigan Air Director's Consortium
Lakes Environmental Software
Lane Regional Air Protection Agency
LEHDER Environmental Services
Locke Lord LLP
Los Angeles County Sanitation District
Louisiana DEQ
Maricopa County - Air Quality Department
Maryland Dept. of the Environment
Mecklenburg County Air Quality
Meteorological Solutions Inc.
Methanex
Metro Vancouver
Michael Baker Corporation
Midwest Generation
Millennium EMS Solutions Ltd.
Minnesota Pollution Control Agency
Mississippi Dept. of Environmental Quality
Mojave Desert AQMD
Montrose Environmental Corporation
Navistar, Inc.
NCDENR - Division Of Air Quality
Nebraska DEQ
Nelson Environmental Remediation, Ltd.
Nevada DEP
North Coast Unified AQMD
Northwest Clean Air Agency
Novel Geo-Environmental, LLC
NRG Energy
NSCAPCD
Nucor Steel Jackson, Inc.
NV Energy
NY State Dept. Of Env. Conservation
Oklahoma Dept. of Environmental Quality

Olympic Region Clean Air Agency
ORTECH Environmental
PA DEP / Bureau of Air Quality
Palm Beach County Public Hlth.
Pinellas County Solid Waste
PPG Industries, Inc.
PPM Consultants, Inc.
PROVIDENCE
Regional Air Pollution Control Agency
(RAPCA)
Research Triangle Institute
RTP Environmental Associates
RWDI Air Inc.
SA Recycling
SCAQMD
Schreiber, Yonley & Associates
SCS Engineers
Sierra Research, Inc.
SLR International Corp
Sonoma Technology, Inc.
Southern Company
Southern Environmental, Inc
Stanley Consultants, Inc.
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Texas Transportation Institute
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EXHIBITION

WHAT'S HAPPENING ON THE EXHIBIT FLOOR

The exhibit hall is located in the Exhibit Hall A (LBCC, Exhibit Floor)

	Tuesday	Wednesday	Thursday
EXHIBIT HALL HOURS	10:30 am–5:30 pm	9:30 am–6:30 pm	9:30 am–12:00 pm
REFRESHMENT BREAKS	10:30 am–11:30 am 3:00 pm–4:00 pm	9:40 am–10:10 am 3:00 pm–3:40 pm	9:40 am–10:10 am
NETWORKING RECEPTION		5:00 pm–6:30 pm	
A&WMA BOOKSTORE	10:30 am–5:30 pm	9:30 am–6:30 pm	9:30 am–12:00 pm



Exhibit Hall Grand Opening

Tuesday, June 24 • 10:30 am

Sponsored by: Los Angeles Department of Water & Power
Exhibit Hall A (LBCC, Exhibit Floor)



Join your fellow attendees and presenters for the Grand Opening of the Exhibit Hall following the Keynote. It's the perfect opportunity to meet with leading environmental professionals showcasing their latest products and services, providing inspiration and ideas to take away. The first 100 people in attendance will receive a gift!

Exhibitor Networking Reception

Wednesday, June 25 • 5:00 pm–6:30 pm

Sponsored by: Chevron Products Company
Exhibit Hall A (LBCC, Exhibit Floor)



Join more than 100 exhibitors and hundreds of attendees for food, cocktails, and networking! Each attendee receives a complimentary drink!

Exhibit Hall Highlights:



The Hub

Sponsored by: AES Southland

The Hub provides a casual environment to meet up with your colleagues, continue conversations between sessions or check in with the office.



WIFI

Sponsored by: Southern California Gas Company

A&WMA is proud to announce that WIFI will now be available to all attendees and exhibitors in the exhibit hall.



Attendee Prize Giveaway

Sponsored by: Environmental Compliance Solutions, Inc.

Visit the exhibit hall during the Annual Conference & Exhibition and you could win up to \$300 in prize money!



ECi Competition

Sponsored by: A&WMA Sections & Chapters and URS Corporation

The Environmental Challenge International student team competition will not only have poster presentations in the exhibit hall, but will also interact with select exhibitors and technical sessions to ensure students participate in the full spectrum of Annual Conference activities.



Student Poster Competition

Sponsored by: The Boeing Company

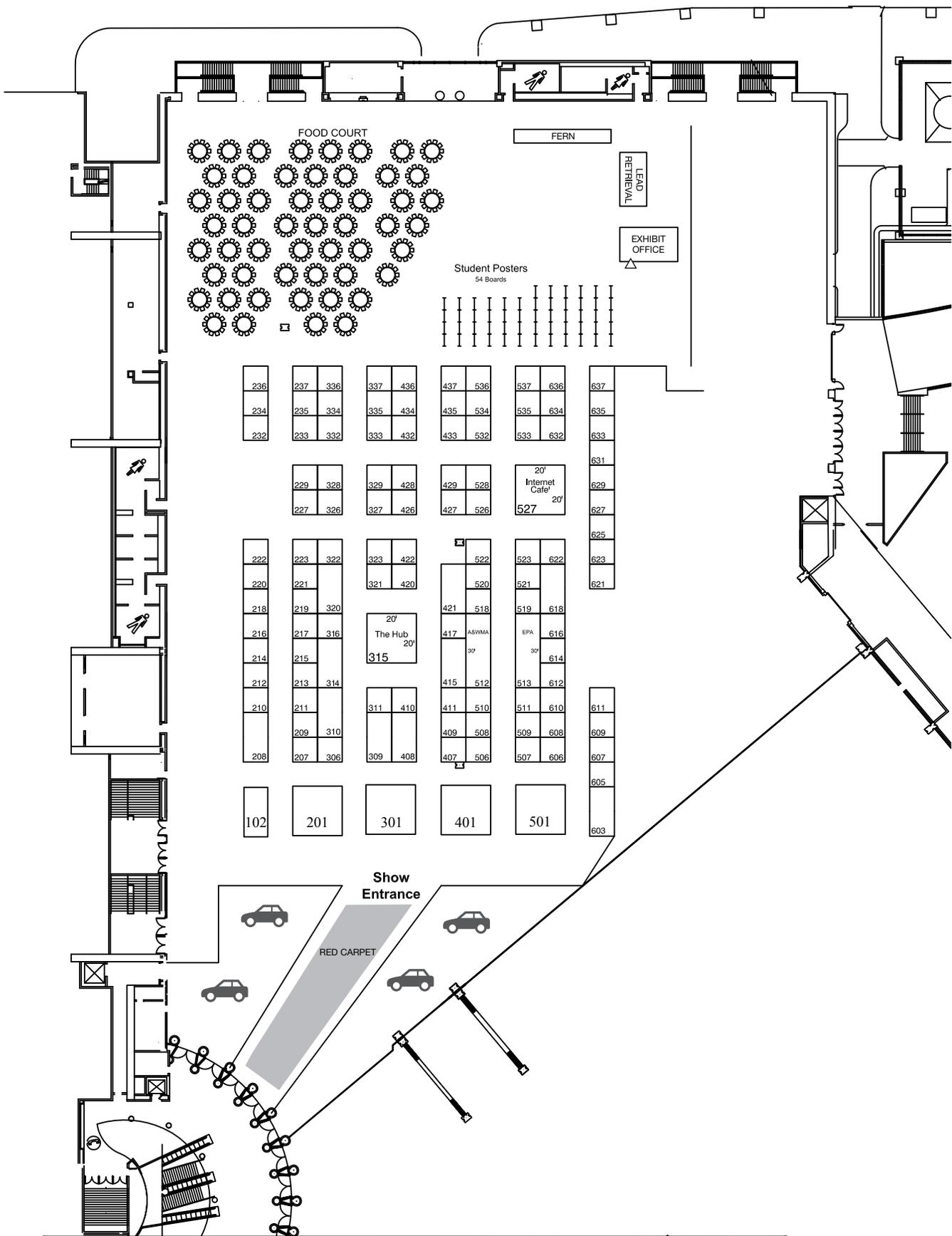
The Student Poster Competition recognizes student posters to be the best among those considered in the undergraduate, masters and doctoral categories.



Clean Vehicle Technology Display by SCAQMD

Explore the latest alternative fuel and clean vehicle technologies such as hydrogen fuel cell, battery electric, and plug-in hybrid. SCAQMD will display several vehicles from their demonstration fleet, and provide information about incentives and resources to help you compare options.

EXHIBIT HALL FLOOR PLAN



Exhibition

EXHIBITORS BY COMPANY

2B Technologies	610	EUEC 2015	236	Northgate Environmental Management, Inc.	219
ABUTECH Industries, Inc.	534	Entech Instruments	520	NovaLynx Corporation.....	234
ADWEST TECHNOLOGIES, INC. , A CECO Environmental Company.....	314	Environics Inc.....	420	Ormantine USA Ltd., Inc.	605
AECOM.....	415	Environmental Protection Agency Alumni Association	513	Pace Analytical Services, Inc.	507
Aereon	428	Environmental Resources Management (ERM).....	320	Perma Pure LLC	237
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AirMetrics.....	326	FLIR Systems	535	Providence/Oris, LLC	510
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AMS Analitica S.R.L.....	210	Groundwater & Environmental Services, Inc. (GES)	328	SCS Engineers.....	213
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Fax: 512-419-6561
Email: airquality@urscorp.com
www.urscorp.com**

URS is a leading global provider of engineering, environmental, and technical services. The Company offers a full range of program management; planning, systems engineering and technical assistance; operations and maintenance; and information technology services. URS provides services for federal, oil and gas, infrastructure, power, and industrial projects and programs.

VICI Metronics536

**26295 Twelve Trees
Poulsbo, WA 98370
Phone: 360-697-9199
Email: metronics@vici.com
www.vicimetronics.com**

VICI Metronics manufactures Dynacal and G-Cal permeation tubes and Dynacalibrator calibration gas generators; devices used to generate calibration gas standards. Our array of siloxanes, sulfurs, VOCs and mercury permeation tubes are used for calibrating air quality monitoring equipment. Other products include ValcoBond, ValcoPLOT columns, and high performance gas specific purifiers.

EXHIBITOR PRODUCT CATAGORIES

Alternative Energy/Clean Tech

SERVICES

Pollution Engineering Magazine 235

TECHNOLOGIES

Fuel Tech, Inc 622

INO 217

Perma Pure LLC 237

Pollution Engineering Magazine 235

Computer Software

CEMS

DR DAS LTD 334

DATABASE

Dakota Software Corporation 410

DR DAS LTD 334

DISPERSION MODELING

CH2M HILL 408

DR DAS LTD 334

RTP Environmental Associates Inc . . 401

EH&S SOFTWARE

CH2M HILL 408

Dakota Software Corporation 410

ENVIRONMENTAL COMPLIANCE

Dakota Software Corporation 410

DR DAS LTD 334

HAZARDOUS WASTE TRACKING

Dakota Software Corporation 410

OTHER

American Ecotech 417

Dakota Software Corporation 410

DR DAS LTD 334

Esri 335

Consultants

ARCHITECTURE & ENGINEERING

AMEC Environment &

Infrastructure, Inc 327

AIR MANAGEMENT

AECOM 415

CH2M HILL 408

Environmental Resources

Management (ERM) 320

GaiaTech, Inc 218

Golder Associates 310

MeteoStar & Sabio Instruments

A Division of Sutron 523

Northgate Environmental

Management, Inc 219

SWCA Environmental Consultants . . 435

Tetra Tech 229

Trinity Consultants 207

URS Corporation 102

ARCHITECTURE & ENGINEERING

URS Corporation 102

BROWNFIELDS

AECOM 415

AMEC Environment &

Infrastructure, Inc 327

SCS Engineers 213

CLIMATE CHANGE/

GREENHOUSE GAS

AECOM 415

CH2M HILL 408

Environmental Resources

Management (ERM) 320

Golder Associates 310

RTP Environmental Associates Inc . . 401

SCS Engineers 213

SWCA Environmental Consultants . . 435

Trinity Consultants 207

URS Corporation 102

EMISSIONS TESTING SERVICES

RTP Environmental Associates Inc . . 401

Tetra Tech 229

URS Corporation 102

ENVIRONMENTAL CONSULTING

AECOM 415

AMEC Environment &

Infrastructure, Inc 327

Andersen Environmental 436

CH2M HILL 408

Environmental Resources

Management (ERM) 320

GaiaTech, Inc 218

Golder Associates 310

Groundwater & Environmental

Services, Inc. (GES) 328

MP Environmental Services, Inc . . . 329

Natural Resource Group 533

Northgate Environmental

Management, Inc 219

RTP Environmental Associates Inc . . 401

SCS Engineers 213

SWCA Environmental Consultants . . 435

Tetra Tech 229

Trinity Consultants 207

URS Corporation 102

ENVIRONMENTAL ENGINEERING

AMEC Environment &

Infrastructure, Inc 327

Andersen Environmental 436

Environmental Resources

Management (ERM) 320

Fuel Tech, Inc 622

GaiaTech, Inc 218

Golder Associates 310

Groundwater & Environmental

Services, Inc. (GES) 328

MeteoStar & Sabio Instruments

A Division of Sutron 523

Northgate Environmental

Management, Inc 219

Tetra Tech 229

EXHIBITOR PRODUCT CATEGORIES

GEOPHYSICAL CONSULTING

AMEC Environment & Infrastructure, Inc 327
Andersen Environmental 436

INDUSTRIAL HYGIENE SERVICES

Andersen Environmental 436
GaiaTech, Inc 218
SCS Engineers 213

ISO 14000

GaiaTech, Inc 218

SURFACE WATER & GROUNDWATER

Andersen Environmental 436
MeteoStar & Sabio Instruments
A Division of Sutron 523
Northgate Environmental
Management, Inc 219
RTP Environmental Associates Inc . . 401
SWCA Environmental Consultants . . 435

TRAINING & EDUCATION

MeteoStar & Sabio Instruments
A Division of Sutron 523
SWCA Environmental Consultants . . 435
Trinity Consultants 207

WASTE MANAGEMENT

AECOM. 415
Golder Associates 310
MP Environmental Services, Inc . . . 329
Northgate Environmental
Management, Inc 219
SCS Engineers 213
Tetra Tech 229

Control Equipment

CATALYTIC SYSTEMS

Fuel Tech, Inc 622
Johnson Matthey Stationary
Emissions Control 332
Mitsubishi Hitachi Power
Systems Americas, Inc. 311

CLEANING SYSTEMS & ACCESSORIES

Tri-Mer Corporation 101

FABRIC FILTERS

ADWEST TECHNOLOGIES, INC.
A CECO Environmental Company . . . 314

GAS HANDLING EQUIPMENT

Munters Corporation 316
Perma Pure LLC 237

GENERAL SUPPLIERS

Campbell Scientific, Inc 411
Munters Corporation 316

INCINERATION

Munters Corporation 316
Process Combustion Corporation . . 528

NOx

Fuel Tech, Inc 622
Johnson Matthey Stationary
Emissions Control 332
Mitsubishi Hitachi Power
Systems Americas, Inc. 311
Perma Pure LLC 237
Process Combustion Corporation . . 528
Tri-Mer Corporation 101

ODOR CONTROL

Tri-Mer Corporation 101

OTHER EQUIPMENT & ACCESSORIES

Fuel Tech, Inc 622
Munters Corporation 316
Perma Pure LLC 237
Shelter One, Inc 337

RTO

ADWEST TECHNOLOGIES, INC.
A CECO Environmental Company . . . 314

SCRUBBERS, TOWERS & GAS CLEANUP

ADWEST TECHNOLOGIES, INC.
A CECO Environmental Company . . . 314
Mitsubishi Hitachi Power
Systems Americas, Inc. 311
Tri-Mer Corporation 101

VOC CONTROL

ADWEST TECHNOLOGIES, INC.
A CECO Environmental Company . . . 314
Johnson Matthey Stationary
Emissions Control 332
Mitsubishi Hitachi Power
Systems Americas, Inc. 311
Munters Corporation 316
Process Combustion Corporation . . 528

H₂-Treatment

BIOTREATMENT

Process Combustion Corporation . . 528

GROUNDWATER

Bentonite Performance
Minerals, LLC 212

LANDFILL & TANK LINERS

Bentonite Performance
Minerals, LLC 212

OTHER

Bentonite Performance Minerals, LLC 212
Lafarge North America Inc 128

REMIEDIATION SERVICES

Bentonite Performance Minerals, LLC 212
Lafarge North America Inc 128

SOILS

Bentonite Performance Minerals, LLC 212
Lafarge North America Inc 128

EXHIBITOR PRODUCT CATEGORIES

Incineration

FLAMELESS THERMAL OXIDIZER

ADWEST TECHNOLOGIES, INC.
A CECO Environmental Company . . . 314

GENERAL SUPPLIER

Process Combustion Corporation . . . 528

Instrumentation & Testing Services

AIR

2B Technologies, Inc 610
AirMetrics 326
ALS Environmental 110
American Ecotech 417
Baseline-MOCON, Inc 518
Clayborn Lab 232
Entech Instruments, Inc 520
Envionics Inc 420
Gasmot Technologies, Inc 522
Landtec North America, Inc 220
Met One Instruments, Inc. 306
MeteoStar & Sabio Instruments
A Division of Sutron 523
Ormantine USA Ltd., Inc 605
Sigma Space 437
Teledyne Advanced Pollution
Instrumentation. 336

AMMONIA ANALYZERS

ECO PHYSICS, INC 221
URG Corporation 519

ANALYTICAL TESTING

ALS Environmental 110
Baseline-MOCON, Inc 518
Envionics Inc 420

AUTOMOTIVE EXHAUST

California Analytical Instruments, Inc. 107
ECO PHYSICS, INC 221

CALIBRATION STANDARDS

BGI Instruments Inc 508
Envionics Inc 420

CEM

California Analytical
Instruments, Inc 107
Clayborn Lab 232
Cooper Environmental
Services, LLC 632
ECO PHYSICS, INC 221
EKTO Manufacturing Corporation . . . 322
Envionics Inc 420

Gasmot Technologies, Inc 522
HORIBA Instruments, Inc. 216
MKS Instruments 608

COMBUSTION GASES

California Analytical
Instruments, Inc 107
Gasmot Technologies, Inc 522
HORIBA Instruments, Inc. 216
MKS Instruments 608

METEOROLOGICAL

Met One Instruments, Inc. 306
R.M. Young Company 506
Sigma Space 437

NO_x

2B Technologies, Inc 610
American Ecotech 417
California Analytical
Instruments, Inc 107
ECO PHYSICS, INC 221
HORIBA Instruments, Inc. 216
Landtec North America, Inc 220
MKS Instruments 608
Ormantine USA Ltd., Inc 605
Teledyne Advanced
Pollution Instrumentation 336

OXYGEN

California Analytical
Instruments, Inc 107
ECO PHYSICS, INC 221
HORIBA Instruments, Inc. 216
Landtec North America, Inc. 220

OTHER

Baseline-MOCON, Inc 518
Campbell Scientific, Inc 411
Cooper Environmental Services, LLC 632
Sigma Space 437

OZONE

2B Technologies, Inc 610
Envionics Inc 420
Landtec North America, Inc. 220
MKS Instruments 608
Teledyne Advanced Pollution
Instrumentation. 337

PARTICULATES

AirMetrics 326
American Ecotech 417
AMS Analitica S.R.L. 210
BGI Instruments Inc 508
Met One Instruments, Inc. 306
Teledyne Advanced
Pollution Instrumentation 336
URG Corporation 519

PERSONAL MONITORS

AMS Analitica S.R.L. 210
BGI Instruments Inc 508
Entech Instruments, Inc 520
Ormantine USA Ltd., Inc 605
URG Corporation 519

PM_{2.5}

AirMetrics 326
AMS Analitica S.R.L. 210
BGI Instruments Inc 508
Cooper Environmental
Services, LLC 632
Met One Instruments, Inc. 306

EXHIBITOR PRODUCT CATEGORIES

Sigma Space 437
 TISCH Environmental 301
 URG Corporation 519

PM₁₀

AirMetrics 326
 AMS Analytica S.R.L. 210
 BGI Instruments Inc 508
 Met One Instruments, Inc. 306
 TISCH Environmental 301
 URG Corporation 519

**SAMPLING ACCESSORIES
 (PUMPS, BAGS, ETC.)**

AMS Analytica S.R.L. 210
 Campbell Scientific, Inc 411
 Clayborn Lab 232
 Entech Instruments, Inc 520
 Nextteq LLC 429

SHELTERS

EKTO Manufacturing Corporation . . . 322
 TISCH Environmental 301

SO₂

Landtec North America, Inc 220
 Ormantine USA Ltd., Inc 605
 Teledyne Advanced Pollution
 Instrumentation. 336
 TISCH Environmental 301

SOURCE

Clayborn Lab 232
 Cooper Environmental Services, LLC 632

STACK TESTING

ALS Environmental 110
 Clayborn Lab 232
 Cooper Environmental
 Services, LLC 632
 Entech Instruments, Inc 520
 Gasmert Technologies, Inc 522
 MKS Instruments 608
 Sigma Space 437

VANS, ENCLOSURES

EKTO Manufacturing Corporation . . . 322

VOC/ORGANICS

ALS Environmental 110
 Baseline-MOCON, Inc 518
 Entech Instruments, Inc 520
 Ormantine USA Ltd., Inc 605

WATER

Baseline-MOCON, Inc 518
 HORIBA Instruments, Inc 216

Laboratory

EQUIPMENT

American Ecotech 417
 Nextteq LLC 429
 NovaLynx Corporation 234
 Perma Pure LLC 237

MOBILE LABORATORIES

Shelter One, Inc 337
 TISCH Environmental 301

SERVICES

ALS Environmental 110
 Atmospheric Analysis and
 Consulting, Inc 111
 Eurofins Air Toxics, Inc 215
 Pace Analytical Services, Inc 507

Publications

BOOKS

Taylor & Francis 607

DATABASES

Bloomberg BNA 421
 Taylor & Francis 607

ENVIRONMENTAL CONTROL

Bloomberg BNA 421
 Pollution Engineering Magazine 235

PERIODICALS

Pollution Engineering Magazine 235
 Taylor & Francis 607

PUBLISHER

Bloomberg BNA 421
 Taylor & Francis 607

REGULATORY COMPLIANCE

Bloomberg BNA 421

WEBSITE

Bloomberg BNA 421
 Pollution Engineering Magazine 235
 Trinity Consultants 207

TECHNICAL SESSIONS

LETTER FROM TECHNICAL PROGRAM CHAIR AND VICE CHAIR

Members of the A&WMA's West Coast Section and the Technical Council of the International A&WMA have developed an outstanding technical program for the 107th A&WMA Annual Conference and Exhibition in Long Beach, California. The theme of this year's meeting is "Navigating Environmental Crossroads" which will bring to the forefront the concept of maintaining responsible environmental stewardship within a growing and healthy economic future. If you are looking for an opportunity to keep up to date on the latest regulations, latest technologies and activities associated with air modeling, air measurement, greenhouse gases, sustainability, waste, environmental and risk management, and many other environmental hot topics, this year's Annual Conference is the place to find it, with platform, poster, and panel sessions beginning Tuesday afternoon and running through Friday morning. This year's Technical Program includes tracks related to Goods Movements and Ports, Transportation Issues, Nanomaterials, Sustainability and Health. We are especially excited to offer a multi-session Mini-Symposium consisting of a series of platform and panel sessions dealing with Goods Movement, Ports and Transportation which will discuss how we can balance environmental policies, maintain a growing economy and still protect public health. Take time to visit the Exhibition and connect with the businesses that bring the latest technologies, innovative equipment and expert services to bear on today's challenges.

In keeping with our mission to serve as a forum for science, policy and business interests we will have keynote presentations by four eminent leaders representing the business, environmental and regulatory communities. We will host three keynote speakers on Tuesday and one speaker on Wednesday prior to the Critical Review. Tuesday's Keynote Program will open with Janet McCabe, the Acting Assistant Administrator for the Office of Air and Radiation, who previously served as the Office of Air and Radiation's Principal Deputy to the Assistant Administrator. Steve Shestak, the Director of Enterprise Remediation for The Boeing Company, one of the world's leading companies that maintains a strong position on environmental responsibility, then will discuss environmental issues providing his perspective within Boeing's Environment, Health and Safety organization, where he is responsible for the development and implementation of an integrated strategy for completion of environmental remediation activities. Dennis Arriola, President of the Southern California Gas Company, the nation's largest natural gas distribution utility, will round out Tuesday's Keynote addresses and present his perspectives on our energy future and our environment.

The A&WMA's Critical Review, a featured session at each Annual Conference will begin on Wednesday morning with a keynote presentation by Dr. Barry Wallerstein, the Executive Director of the South Coast Air Quality Management District. This year's Critical Review will be presented by Thomas Grahame on the topic of "Public Health and Components of Particulate Matter: The Changing Assessment of Black Carbon". He will be joined by Richard Schlesinger, Ph.D. and Rebecca Klemm, Ph.D. for this presentation.

Attendees from around the world attend the A&WMA's Annual Conference and Exhibition to check out new products and technologies in the exhibit hall, meet and interact with experts from the business, scientific and regulatory communities. This year will be no exception! What better place to showcase the A&WMA than Southern California, with some of the world's largest transportation, business and commerce centers in the midst of a tropics-like environment. The West Coast Section's Local Host Committee has worked long and hard to make this meeting not only technically sound, but an enjoyable and memorable experience for you and your families. After enriching your mind with the latest technical information, take advantage of the variety of Technical tours offered this year and take time to relax and enjoy our beaches, the Aquarium, some of Southern California's fantastic restaurants and other exciting activities within blocks of your hotel. Or, take in some of the many cultural opportunities the city has to offer—museums, the Griffith Planetarium, music concerts at the Hollywood Bowl, blues and jazz in local clubs, Disneyland—and much, much, more. You will find that this year's A&WMA's 107th Annual Conference and Exhibition will be an unforgettable experience—come join us at the Long Beach Convention Center and be prepared for an exciting and productive week.



Pat Brush
2014 Technical Program Chair
VP, HSE, Security, Quality,
and Risk Management
Air Liquide E&C World
Business Unit



Michael Kleinman
2014 Technical Program Vice Chair
Professor, Department of Medicine
University of California, Irvine

TECHNICAL SESSIONS

Tuesday, June 24, 2014

Industry Focus	Session ID	Session Title	TCC(s)	Session Format
Starting at 8:00 am				
Keynote Presentations				
Starting at 10:30 am				
Exhibit Hall Open				
1:20 pm- 3:00 pm				
	YOUN/EDUC-TuesPM1	ACE 101: Conference Introductory Panel for Young Professionals	YP	Panel
	ENER/AIRS-TuesPM1	Air Emission Issues in the Biofuels Industry	WMB/AAE	Panel
	AIRS-TuesPM1	Air Emissions Surveys I	AAE	Platform
	H&EE-TuesPM1	Air Pollution Exposure Studies	HEE	Platform
	FEDS/REGU-TuesPM1	Compliance at Federal Facilities - Part 1	FED	Platform
	O&GS-TuesPM1	California's Regulation of Hydraulic Fracturing and Other Well-Stimulating Technologies	LHC	Panel
	MINI/H&EE-TuesPM1	Mini-Symposium Platform: Emissions from the Transportation Sector at the Long Beach and Los Angeles Ports	PLU	Platform
	CLIM/SUST-TuesPM1	GHG Data and Reporting	CCP/SUS	Platform
	REGU-TuesPM1	NSR Reform—Recent Developments and Issues	REG	Panel
	AIRS-TuesPM1	Panel Discussion on Tools for Characterizing Single-Source Contributions to Ozone and Total PM _{2.5}	AAE	Panel
	SUST/ENER-TuesPM1	Resource Conservation and Renewable Energy	SRC	Platform
	REGU-TuesPM1	State and Local Agency Issues with Air Permitting	REG	Panel
	AIRS-TuesPM1	Visibility Studies	APV	Platform
3:00 pm- 4:00 pm				
Session Break				
4:00 pm- 5:40 pm				
	AIRS-TuesPM2	Air Emissions Surveys II	AAE	Platform
	AIRS-TuesPM2	Atmospheric Chemistry/Deposition	APC	Platform
	YOUN/EDUC-TuesPM2	A&WMA Environmental Education Resource Guides (EERG): Train the Trainer	EDC	Panel
	CLIM/SUST-TuesPM2	CO ₂ Control Technologies and Strategies	AAC	Platform
	FEDS/REGU-TuesPM2	Compliance at Federal Facilities - Part 2	FED	Platform
	MINI-TuesPM2	Mini-Symposium Platform: Emissions from Transportation Hubs and Ports	PLU	Platform
	AIRS-TuesPM2	Fugitive Dust	APP	Platform
	REGU-TuesPM2	Implementing the PM _{2.5} New Source Review (NSR) Program	REG	Panel
	TRAN/H&EE-TuesPM2	Noise Emerging Issues	CNV	Platform
	AIRS/REGU-TuesPM2	Photochemical Modeling Issues	APM	Platform
	H&EE-TuesPM2	Toxic and Indoor Air Pollution Exposure	HEE	Platform
	SUST/WAST-TuesPM2	Zero Waste Approaches and Practices	SRC	Platform

Program Key			Program Key		
Track ID	Industry/Environmental Focus		Track ID	Industry/Environmental Focus	
	AIRS	Air-Measurements and Basic Science		SUST	Sustainability
	EDUC	Education		TRAN	Transportation
	ENER	Renewable Energy		WAST	Waste Management
	FEDS	Federal		LOCA	Local Topic
	H&EE	Health & Environmental Effects		YOUN	Young Professionals
	INDU	Heavy Industry and General Manufacturing		POWR	Power Generation
	MINI	Mini-Symposium on Transportation Hubs & Ports		NANO	Nanoparticles
	O&GS	Oil & Gas		CLIM	Climate Change
	REGU	Regulatory			

TECHNICAL SESSIONS

Tuesday, June 24, 2014

ACE 101: Conference Introductory Panel for Young Professionals

YOUN/EDUC-TuesPM1
Room: CC 203C

6/24/2014 1:20 PM

Panel

TCC: YPC

Chair: Christina Akly, CH2M Hill

Vice Chair: Monica Sandoval, Williams Energy

Attending a professional conference such as the Air & Waste Management Association (A&WMA) Annual Conference and Exhibition (ACE) 2014 can be a daunting experience for first-time attendees. This is especially true for young professionals (YPs) – although by no means limited to that age group. A common statement by YPs (and other first-time ACE attendees) – especially those who attend alone – is that the variety of topics and events hosted by the ACE conference can be overwhelming. First-time attendees' feedback regarding their experience at the conference usually note how difficult it can be to decide among the sessions, events and activities to attend during the conference to get the most out of it, given the numerous options available on the same time periods. Many can be left with the feeling that they missed out on many of the events and sessions they chose not to attend over other activities happening concurrently. Furthermore, networking can be harder when attending alone for the first time. This panel is intended to provide insight from YPs with a few years of ACE experience regarding each of the following:

- Ways to meet new people and find others with similar interests
- An introduction to the technical councils, technical sessions, and the A&WMA organizational structure
- Tips to finding a mentor within the organization
- An introduction to the YP program and YPAC
- Ideas on maximizing the ACE experience
- Other helpful hints.

The panel will be comprised of a variety of A&WMA members, mostly YP Advisory Council (YPAC) members, who have attended at least one previous ACE, and thus are familiar with the conference proceedings.

Panelists:

- *Christina Akly, CH2M HILL*
- *Laura Cremer, Praxair*
- *Monica Sandoval, Williams Energy*
- *Joshua Marteny, Dixon Environmental*
- *Jen Moore, 3M*
- *Nancy Meilahn Fowler, URS*

Air Emission Issues in the Biofuels Industry

ENER/AIRS-TuesPM1

Room: CC 203A

6/24/2014 1:20 PM

Panel

TCC: WMB/AEE

Chair: Howard Gebhart, Air Resource Specialists, Inc

Vice Chair: Iona Branscum, POET

Programs are in place in the United States and other countries to ensure that transportation fuels sold contain a minimum volume of renewable fuel. In recent years many manufacturing sites have been built to produce ethanol and other fuels to meet these goals. As the regulations require higher percentages of renewable fuels, the renewable fuels industry continues to grow and to expand beyond conventional biofuels into advanced biofuels, such as cellulosic ethanol and biobutanol. This panel will review current air emission and air permitting topics in the biofuels industry. Topics will be finalized in the spring, as it is too early at this point to know what the hot issues in the industry will be at that time. Last year's panel included the following topics: The Bridge to Advanced Biofuels—Challenges and Opportunities – A look at the current corn-to-ethanol industry and description of how the industry is moving toward the development of advanced biofuels and cellulosic biofuels in order to meet the mandates of the Renewable Fuel Standard. Life Cycle Air Pollutant Emission and Impact Accounting for Biofuels—Both biofuels and conventional fuels have complex supply chains that extend over space and time. A report on the spatially and temporally explicit methods for tracking life cycle air pollutant emissions and their impacts with case studies of gasoline, corn grain ethanol, and corn stover cellulosic ethanol. The Impact of GHG Regulations on Biorefineries – In 2010 EPA promulgated the “tailoring” rule to create new permitting thresholds for Greenhouse Gases (GHG). Step 1 of GHG permitting began in January 2011 for sources that triggered permitting due to pollutants other than GHG. Step 2 began in July 2011 and added sources that trigger applicability due to GHG emissions. EPA just recently proposed Step 3, which streamlines GHG permitting for some situations. In July 2011, EPA also deferred the permitting of biogenic GHG sources for three years. Since that time EPA has been preparing a framework to account for biogenic GHG emissions, presumably to incorporate them into permitting rules once the deferral has ended. This presentation will provide information on the accounting framework and speculate on the future impact of GHG regulation on biorefinery sources.

Panelists:

- *Howard Gebhart, Air Resource Specialists, Inc*
- *Mae Thomas, Eastern Research Group, Inc.*
- *Rafe Christopherson, POET*
- *Jim Toolen*

TECHNICAL SESSIONS

Air Emissions Surveys I

AIRS-TuesPM1

Room: CC 101B

6/24/2014 1:20 PM

Platform

TCC: AAE

Chair: Chun Yi Wu, Minnesota Pollution Control Agency

Vice Chair: Paul Siebert, Weston Solutions, Inc.

1:20 PM

Activity-based Sampling Activities at the Libby Asbestos Superfund Site, Libby, Montana

Paper#: 32991

A. Tanimoto¹, R. Alexander²; ¹CDM Smith, Sacramento, CA,

²CDM Smith, Helena, MT

1:40 PM

Lessons Learned from the Residential Wood Combustion Surveys

Paper#: 33154

C. Wu, L. Herschberger, D. Bael, M. Fenske, K. Palmer;

Minnesota Pollution Control Agency, St. Paul, MN

2:00 PM

Unaccounted Breathing Losses from Heated Tanks

Paper#: 33294

R. L. Ferry¹, R. Andries²; ¹TGB Partnership, Hillsborough, NC,

²Sage Environmental Consulting, Houston, TX

2:20 PM

On the Relative Importance of PM_{2.5}, Characterized by Lidar and Their Chemical Composition, of a Large Integrated Steelworks in a Semi-industrial Environment

Paper#: 33249

B. Guinot¹, B. Gonzalez², S. Kedia³, J. Perim De Faria; ¹CNRS

LABORATOIRE D'AEROLOGIE LEOSPHERE SAS, Theys,

France, ²ArcelorMittal Global R&D, Aviles, Spain, ³Centre for

Development of Advanced Computing, Pune, India

2:40 PM

PM_{2.5} Emissions from Crushers, Screens, and Conveyor Transfer Points

Paper#: 33524

J. R. Richards¹, T. Brozell¹, E. Coyner², S. Whitt³; ¹Air Control

Techniques, P.C., Cary, NC, ²National Stone Sand & Gravel

Association, Alexandria, VA, ³Martin Marietta Aggregates, Inc.,

Raleigh, NC

Air Pollution Exposure Studies

H&EE-TuesPM1

Room: CC 102B

6/24/2014 1:20 PM

Platform

TCC: HEE

Chair: Jim Morrow, J.W. Morrow

Vice Chair: Suresh Santanam, Syracuse Center of Excellence

1:20 PM

Characterization of Spatiotemporal Air Quality Metrics Developed for Georgia for Use in Health Studies

Paper#: 32829

M. D. Friberg, H. Holmes, A. Russell, Y. Hu, J. Mulholland,

S. Sororian; Georgia Institute of Technology, Atlanta, GA

1:40 PM

Bike-path Users Exposure to PM_{2.5} and Soot in Bogota: Impact of Traffic

Paper#: 33146

J. F. Segura Contreras¹, W. G. Soto², J. F. Franco³; ¹Research

Group on Environmental Management, School of Engineering,

Universidad EAN, Bogotá, Columbia, ²Research Group on

Environmental Management, Bogotá, Columbia, ³Research

Group on Environmental Management, School of Engineering,

Universidad EAN, Bogotá, Columbia

2:00 PM

Proposed Reductions in Ozone NAAQS - Good Science or Perpetuation of Dogma on Health Consequences of Low-level Air Pollution?

Paper#: 33259

L. H. Fraiser, C. Cros; Zephyr Environmental Corporation,

Austin, TX

Compliance at Federal Facilities - Part 1

FEDS/REGU-TuesPM1

Room: CC 103B

6/24/2014 1:20 PM

Platform

TCC: FED

Chair: Francisco Castaneda, Air Force Civil Engineer Center

Vice Chair: David Kumar, USAF

1:20 PM

Using APIMS for Stage I and II Inspections

Paper#: 33453

D. W. Hansell¹, J. Chapman²; ¹Cardno EM-Assist, Layton, UT,

²Hill Air Force Base, UT, Hill AFB, UT

1:40 PM

The Air Force's Solution to CAA 118(d) Compliance

Paper#: 30811

B. Allred¹, J. Smith², F. Castaneda³; ¹Northrop Grumman

Information Systems, Clearfield, UT, ²Air Force Civil Engineer

Center (AFCEC), Lackland AFB, TX, ³Air Force Civil Engineer

Center, San Antonio, TX

TECHNICAL SESSIONS

2:00 PM

Aerospace NESHAP Update and Effect on the U.S. Air Force

Paper#: 33260

H. Saxion¹, F. Castaneda², C. Akly³, J. Ryckman⁴; ¹CH2M HILL, Eugene, OR, ²Air Force Civil Engineer Center, San Antonio, TX, ³CH2M HILL, Oklahoma City, OK, ⁴U.S. Air Force AFMC AFLCMC/WNVV, Wright-Patterson AFB, OH

2:20 PM

Air Force Environmental Impact Analysis Process for Air Quality

Paper#: 33405

F. Castaneda¹, J. R. McClain², J. E. McClain²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²Solutio Environmental, Inc., San Antonio, TX

2:40 PM

Clean Air Act Section 608 Compliance Within the Air Force

Paper#: 33642

F. Castaneda¹, W. L. Rottgering²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²Northrop Grumman Information Systems, San Antonio, TX

California's Regulation of Hydraulic Fracturing and Other Well-Stimulating Technologies

O&GS-TuesPM1

Room: CC 103C

6/24/2014 1:20 PM

Panel

TCC: LHC

Chair: Paul Singarella, Latham & Watkins LLP

Vice Chair: Laki Tisopoulos, South Coast Air Quality Management District



There's a historic transition occurring in California with regard to unconventional well-stimulation technologies, including hydraulic fracturing. Hydraulic fracturing is transitioning from a lightly regulated activity to a more heavily regulated activity. Driven in part by new legislation, the transition will move rapidly and will affect numerous agencies. Within a few years, there will be a robust permitting and regulatory scheme governing hydraulic fracturing in California. This regulatory program is unprecedented, in California and across the country, and it may serve as a bellwether for programs elsewhere. Unconventional well-stimulation, such as hydraulic fracturing, is expected to play a significant role in the development of the Monterey Shale formation and the Los Angeles Basin. Whether these oil and gas reserves can be safely and economically accessed depends upon the operators' knowledge of and ability to comply with these new regulations and standards.

The above issues will be discussed in greater detail by the panelists from various stakeholder interests, including NGOs, regulators, and industry representatives.

Panelists:

- Damon Nagami, Natural Resources Defense Council
- Jason Marshall, California's Department of Conservation
- Susan Nakamura, South Coast Air Quality Management District
- Mark Nechodom, California's Department of Conservation
- Susan Paulsen, Flow Science
- Catherine Reheis-Boyd, Western States Petroleum Association

GHG Data and Reporting

CLIM/SUST-TuesPM1

Room: CC 202A

6/24/2014 1:20 PM

Platform

TCC: CC/SUS

Chair: Harish Rao, Rao Consulting Services

Vice Chair: Miriam Lev-On, The LEVON Group, LLC

1:20 PM

The Greenhouse Gas Mandatory Reporting Rule (GHG MRR) – Lessons Learned, Data Trends and Continued Compliance Challenges

Paper#: 33569

B. Bass¹, R. Narasimhan¹, J. H. Lowe²; ¹Environmental Resources Management (ERM), Metairie, LA, ²Chevron Products Company, Pascagoula, MS

1:40 PM

Redundancy and Inconsistency in Voluntary, State, and Federal Greenhouse Gas Reporting for Landfills

Paper#: 33050

J. Henkelman¹, R. Huff², P. Sullivan¹; ¹SCS Engineers, Sacramento, CA, ²SCS Engineers, Long Beach, CA

2:00 PM

Establishing GHG Inventories of Local Government for Effective GHG Emissions Reduction

Paper#: 33208

Y. Kim, E. Kim S. Moon, D. Hong, P. Choi; Korea Environment Coporation, Incheon, South Korea

2:20 PM

Building a Sustainable Data Management Program in the Upstream Oil and Gas Industry

Paper#: 33268

R. Narasimhan, N. Sullivan, J. Quinn; Environmental Resources Management (ERM), Metairie, LA

TECHNICAL SESSIONS

Mini-Symposium Platform: Emissions from the Transportation Sector at the Long Beach and Los Angeles Ports

MINI/H&EE-TuesPM1

Room: CC 101A

6/24/2014 1:20 PM

Platform

TCC: OMS

Chair: Michael Claggett, U.S. Department of Transportation, Federal Highway Administration

Vice Chair: Heidi Rous, PCR Services Corp

1:20 PM

Overview of the Mini-Symposium on Impacts of Transportation Hubs & Ports

M. Claggett; U.S. Department of Transportation, Federal Highway Administration, Santa Fe, NM

1:40 PM

PM_{2.5} and Elemental Carbon Study at the Ports of Long Beach and Los Angeles

Paper#: 32272

J. C. Torcolini¹, G. Bertolin², H. Tomley³, J. Watanabe³, L. Wunder⁴, R. Spencer⁴; ¹Leidos, Inc., San Diego, CA, ²Leidos, Inc, San Diego, CA, ³Port of Long Beach, Long Beach, CA, ⁴Port of Los Angeles, San Pedro, CA

2:00 PM

Ship Emissions from Bunker Oil and Other Port Activities in the Los Angeles Port Area and Implications for Health Impacts

Paper#: 32970

T. A. Cahill¹, D. E. Barnes², K. Boberg³; ¹DELTA Group, Chem.Eng./MS, University of California, Davis, CA, ²DELTA Group, University of California, Davis, Davis, CA, ³CA Department of Toxic Substances Control, Sacramento, Sacramento, CA

2:20 PM

Effects of Transportation Emissions on Air Quality and Health in Southeast Los Angeles County

Paper#: 33147

S. Hartley¹, A. Rosenbaum², E. Carr³, J. Ang-Olson⁴; ¹ICF International, San Francisco, CA, ²ICF International, Rohnert Park, CA, ³ICF International, San Rafael, CA, ⁴ICF International, Sacramento, CA

NSR Reform—Recent Developments and Issues

REGU-TuesPM1

Room: CC 202BC

6/24/2014 1:20 PM

Panel

TCC: REG

Chair: Gary McCutchen, RTP Environmental Associates, Inc.

Vice Chair: Laki Tisopulos, South Coast Air Quality Management District

This panel, similar to well-attended presentations at the 2012 and 2013 conferences, would discuss significant NSR rule developments in 2013 and early 2014 and explain how these developments affect applicants and agencies. NSR permitting will be affected by EPA policy regarding greenhouse gases and implementation policy on a number of issues, including the PM_{2.5} National Ambient Air Quality Standard; the aggregation rule and other issues. The Panel will discuss major developments in NSR, point out ways that facility operations could be affected by these developments, and identify issues that remain unsettled. Judicial decisions, which have become more and more of a factor in the New Source Review/Prevention of Significant Deterioration programs, will also be addressed. The many issues include: the Chevron deference test; the definition of an emissions unit as affected by the Rochester and Westvaco decisions; the definition of a stationary source as affected by the 6th Circuit decision that “adjacent” is purely physical distance and EPA’s policy limiting application of that decision to the 6th Circuit; the EPA policy concept of “common control” being established by contract rather than ownership; policy and court decisions on the definition of fugitive emissions, and EPA rulemaking on that topic; EPA’s nascent policy of requiring a 40 CFR 52.21(b)(21) “actual emissions” definition, defaulting to an actual-to-potential to emit test, for contemporaneous emissions increases (even if the original project emissions increase was determined using a baseline actual to projected actual test) when an application is calculating the net emissions increase for a project; the continuing tension between States and EPA over the latitude States have to determine BACT; whether requiring that carbon capture and sequestration (CCS) be considered “available” in a BACT determination is a waste of time and resources; and how EPA has managed to exclude GHG from PSD impact analysis when the Clean Air Act mandates such analyses for all PSD permits.

Panelists:

- Gary Mccutchen, RTP Environmental Associates, Inc.
- Bill Wehrum, Hunton & Williams LLP
- Raj Rao, EPA
- Ken Weiss, ERM

TECHNICAL SESSIONS

Panel Discussion on Tools for Characterizing Single-Source Contributions to Ozone and Total PM_{2.5}

AIRS-TuesPM1

Room: CC 201

6/24/2014 1:20 PM

Panel

TCC: APM

Chair: Eladio Knipping, EPRI

Vice Chair: Pete Catizone, TRC Environmental Corporation

In January 2012, EPA granted a petition submitted by the Sierra Club. In the petition grant, EPA committed to evaluate updates to regulatory air quality modeling and incorporate as appropriate new analytical techniques or models for ozone and secondary PM_{2.5} for new and modified sources. As a result, the air quality modeling community is currently evaluating several modeling tools for determining the contribution from single sources to these pollutants. Depending on the nature of the technique, some methods are better suited as “screening tools” whereas others can be used for detailed source contribution analyses. All these methods have different strengths and span different ranges of complexity, computational requirement and user training. On the more complex end of the spectrum, photochemical grid models have been used for many years to simulate the formation of ozone and PM_{2.5} in the atmosphere. Some models also include the capability of representing the transport and chemistry within source plumes discretely in order to more faithfully represent the evolution of emissions from particular sources. Air dispersion models with chemistry on the other hand focus primarily on the simulation of plume transport and chemistry but require for background concentrations to be predetermined for the simulation; these advanced air dispersion models are less complex and computationally demanding than the photochemical grid models. The least complex of the suite of tools being evaluated are reduced form models. These techniques use photochemical model results to develop simplified, localized frameworks and include methods such as response surface models, parametric models, interpollutant trading ratios, among others. This panel discussion will provide an overview of the different tools under development or available to the air quality modeling community and discuss how these could be applied in order to satisfy current and future air modeling requirements.

Panelists:

- *Eladio Knipping, EPRI*
- *James Boylan, Georgia Environmental Protection Division*
- *Ralph Morris, ENVIRON International Corporation*
- *Alexander Cohan, Lake Michigan Air Director's Consortium Organization*

Resource Conservation and Renewable Energy

SUST/ENER-TuesPM1

Room: CC 102C

6/24/2014 1:20 PM

Platform

TCC: SRC

Chair: Sam Vigil, California Polytechnic State University

1:20 PM

Applied Rain Harvesting Engineering for Environmental Education

Paper#: 31510

M. Franchetti; The University of Toledo, Toledo, OH

1:40 PM

Data Management Within Unconventional Gas Well Landowner Sampling Workflows

Paper#: 32314

R. Bannister, D. Cleland; Groundwater & Environmental Services, Inc. (GES), Blacksburg, VA

2:00 PM

Introducing the Green Power House: A Truly Sustainable, Profitable Solution for Reformatting Waste Biomass to Produce Energy, Sequester Carbon, Rebuild Soils, Reclaim Water and Grow Food in a World at the Crossroads of Climate Change

Paper#: 31786

A. de Yong, R. Kelson, M. Smith, E. Sugden; Algae Aqua-Culture Technology, Inc., Whitefish, MT

2:20 PM

Offshore Windpower: The Next Big Thing

Paper#: 33130

J. Sherwell; Maryland Power Plant Research Program, Annapolia, MD

2:40 PM

The Feasibility of Using Wind and Solar Energy on College and University Campuses'

Paper#: 33369

A. LaFavers; University of Texas at Arlington Texas, Grand Prairie, TX

TECHNICAL SESSIONS

State and Local Agency Issues with Air Permitting

REGU-TuesPM1
Room: CC 102A

6/24/2014 1:20 PM

Panel

TCC: REG

Chair: Rahul Thaker, NC Division of Air Quality

Vice Chair: Clara Poffenberger, Bingham McCutchen

This session will include presentations on challenges and issues facing various states and local agencies, and state-specific solutions in air permitting. It will encompass all permitting programs; Title V, New Source Review (NSR), and minor NSR, and is expected to cover wide spectrum of industries. Some of the issues which may be discussed are:

(i) Creative solutions to address permitting workload and reduced staffing levels, and complex regulations and applications.
(ii) Permitting process between States and EPA, specifically, where EPA issues one type of permit (e.g., GHG permits) and State issues another type of permit (e.g., non-GHG permits).
(iii) Challenges in implementing EPA GHG regulations and policies.
(iv) State flexibility and autonomy under PSD and minor NSR programs. The panel is assembled precisely to discuss these critical issues and challenges, and provide answers to better manage air permitting. The panel members are experts in air permitting, having many years of experience in Title V and NSR permitting. They have professional affiliation with major state and local air permitting agencies and attorney general offices. It is the objective of this panel to better inform the attendees about these permitting issues and provide answers to them. The panel session has been designed such that any professional with permitting background can benefit from attending it. Finally, it is the panel's sincere hope that attendees' permitting work may improve upon gaining information from this panel session.

Panelists:

- *John Evans, NC Division of Air Quality*
- *Steven Hagood, Assistant Director, TX Commission on Environmental Quality*
- *Keith Baugues, Assistant Commissioner, IN Dept of Environmental Management*
- *Mohsen Nazemi, Deputy Executive Officer, SCAQMD*

Visibility Studies

AIRS-TuesPM1
Room: CC 103A

6/24/2014 1:20 PM

Platform

TCC: APV

Chair: Kip Carrico, AECOM

Vice Chair: Carrie MacDougall, CH2M HILL

1:20 PM

Nephelometers in Use in Roadside Ambient Air Monitoring Applications

Paper#: 33324

J. S. Carney, J. Strain, M. Phelps; American Ecotech, Warren, RI

1:40 PM

Characteristics and Causes of an Autumn Heavy Haze Episode in the Yangtze River Delta, China

Paper#: 33370

Y. Hua, S. Wang, Z. Cheng; School of Environment, and State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, Beijing, China

2:00 PM

Prediction of Historical Ambient PM_{2.5} Levels Through Existing Visibility Measurements over Xi'an in Northwest China

Paper#: 33379

J. Cao¹, Z. Shen, S. Liu², C. Zhu; ¹Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China, ²Key Laboratory of Aerosol, SKLLQG, Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China

2:20 PM

Impact on Visibility and Air Quality from Bushfire Smog in Northern Thailand

Paper#: 33393

W. Jinsart, P. Pungkhom, R. Ngeabprasert, D. Arbmanee; Chulalongkorn University, Bangkok, Thailand

TECHNICAL SESSIONS

A&WMA Environmental Education Resource Guides (EERGs): Train the Trainer Panel Session

YOUN/EDUC-TuesPM2
Room: CC 203C

6/24/2014 4:00 PM

Panel

TCC: EDC

Chair: Joann Held, Air Toxics Analysis Services

Vice Chair: Richard Watson, SCAQMD

This session will introduce attendees to the wealth of environmental education materials available from A&WMA, with a focus on the Environmental Education Resource Guides (EERGs). This series of Guides, which began in 1991, was originally written and tested by teachers with A&WMA members lending their expertise on the technical issues related to Air Quality and Nonpoint Source Water Pollution. The EERGs offer lessons for almost any situation, from a simple Earth Day classroom visit by an individual to a full workshop for multiple teachers who can then take the materials back to their own classrooms to be used year after year. Each lesson includes background material for teachers, creative classroom activities, and extensions that can be used for independent student projects.

Panelists:

- Joann Held, Air Toxics Analysis Services
- Violette Roberts, Mojave Desert Air Quality Management District
- Christie Robinson, Mojave Desert Air Quality Management District
- Richard Watson, South Coast Air Quality Management District

Air Emissions Surveys II

AIRS-TuesPM2
Room: CC 101B

6/24/2014 4:00 PM

Platform

TCC: AAE

Chair: Paul Siebert, Weston Solutions, Inc.

Vice Chair: Chun Yi Wu, Minnesota Pollution Control Agency

4:00 PM

Volatile Organic Compound Emissions from Surface Coating Facilities: Characterization of Facilities, Estimation of Emission Rates, and Dispersion Modeling of Off-site Impacts

Paper#: 32278

Y. Weatheron¹, M. L. Sattler², A. Athappan³, S. Sumitsawan⁴, R. H. Gangupomu⁵, K. Kositkanawuth⁵; ¹Dept. of Civil Engineering, University of Texas at Arlington, Arlington, TX, ²Civil Engineering, University of Texas at Arlington, Arlington, TX, ³Providence Engineering, Irving, TX, ⁴School of Energy and Environment, Phayao, ⁵University of Texas at Arlington, Arlington, TX

4:20 PM

Estimations of Mercury Emissions in Mexico: Case Coal-fired Power Plants

Paper#: 33585

R. Sos, H. Bravo, P. Sanchez, G. Fuentes, S. Rosas; Universidad Nacional Autonoma de Mexico, Mexico

4:40 PM

Black Carbon over the Arctic: Role of Russian Emissions and Numerical Simulation

Paper#: 33034

K. Huang, J. Fu, X. Dong; The University of Tennessee, Knoxville, Knoxville, TN

5:00 PM

Temporal and Spatial Variations of Particulate Emissions on Major Highways: Lagrangian Approach Using Mobile Monitoring System

Paper#: 32914

M. L. Grady¹, H. Jung², L. T. Pham³; ¹University of California, Riverside, Riverside, CA, ²CE-CERT, University of California, Riverside, Riverside, CA, ³University of California, Riverside, Garden Grove, CA

Atmospheric Chemistry/Deposition

AIRS-TuesPM2
Room: CC 103A

6/24/2014 4:00 PM

Platform

TCC: APC

Chair: Luis Alonso Diaz-Robles, PDVSA Intevep

Vice Chair: Barbara Zielinska, Desert Research Institute

4:00 PM

Air Pollution and Precipitation Chemistry in Cubatao, Brazil Industrial Area

Paper#: 33576

M. Vieira-Filho¹, A. Fornaro², C. Lehmann¹; ¹Illinois State Water Survey, Champaign, IL, ²University of São Paulo, São Paulo, Brazil

4:20 PM

Analysis of Organic Tracers in Atmospheric PM_{2.5}

Paper#: 33828

V. Samburova, A. Murray, X. Yang, D. Campbell, A. Hallar, B. Zielinska; Desert Research Institute, Reno, NV

4:40 PM

Deposition of Polycyclic Aromatic Hydrocarbons in Soil and Litter

Paper#: 33348

B. Zielinska, D. Obrist; Desert Research Institute, Reno, NV

TECHNICAL SESSIONS

CO₂ Control Technologies and Strategies

CLIM/SUST-TuesPM2

Room: CC 102A

6/24/2014 4:00 PM

Platform

TCC: ACC

Chair: Sharon Sjostrom, ADA-ES, Inc.

4:00 PM

Impact of Sustainable Best Management Practices on CO₂ Emissions

Paper#: 33299

M. Javaherian¹, S. Morrell², D. Neal², R. Thron²; ¹Endpoint Consulting, Inc., Burlingame, CA, ²Walden University, Minneapolis, MN

4:20 PM

Activation and Dissociation of Carbon Dioxide on a Novel Titania-Carbon Composite: Implications for Renewable Energy

Paper#: 33390

S. F. Rollins¹, J. M. Andino²; ¹Mesa, AZ, ²Arizona State University, Tempe, AZ

4:40 PM

CO₂ Adsorption and Fixation Pilot Plants with TVSA Process and Microalgae System

Paper#: 33617

F. Su, C. Lu; National Chung Hsing University, Taichung, Taiwan

5:00 PM

Cost Effective Amine Loaded Zeolites Prepared from Spend Quartz Sand for Carbon Dioxide Capture Under High Temperature

Paper#: 31818

S. YiTeng, C. Chang, G. Hong; National Ilan University, Ilan, Taiwan

5:20 PM

Enhancement of CO₂ Adsorption on Activated Carbon Fibers Grafted with Nitrogen-doped Carbon Nanotubes

Paper#: 33616

Y. Chiang¹, W. Hsu², S. Lin³; ¹Department of Mechanical Engineering, Yuan Ze University, Chungli, Taoyuan, Taiwan, ²Yuan Ze University, Taoyuan, Taiwan, ³Department of Mechanical Engineering, Hwa Hsia Institute of Technology, Taipei, Taiwan

Compliance at Federal Facilities - Part 2

FEDS/REGU-TuesPM2

Room: CC 103C

6/24/2014 4:00 PM

Platform

TCC: FED

Chair: Francisco Castaneda, Air Force Civil Engineer Center

Vice Chair: David Kumar, Air Force Civil Engineer Center

4:00 PM

Overview of Boiler MACT

Paper#: 32315

D. J. Van Schaack¹, F. Castaneda²; ¹Department of Defense - Air Force, Wright-Patterson AFB, OH, ²Air Force Civil Engineer Center, San Antonio, TX

4:20 PM

Boiler and Process Heater Rule Impacts on Hill AFB

Paper#: 33445

D. W. Hansell¹, J. Chapman²; ¹Cardno EM-Assist, Layton, UT, ²Hill Air Force Base, UT, Hill AFB, UT

4:40 PM

Harmonized Engine Rules: Implementation and Compliance for the United States Air Force

Paper#: 33089

F. Castaneda¹, D. Kinard²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²CH2M HILL, Oklahoma City, OK

Fugitive Dust

AIRS-TuesPM2

Room: CC 103B

6/24/2014 4:00 PM

Platform

TCC: APP

Chair: Richard Countess, Countess Environmental

Vice Chair: Rob Farber, Atmospheric Clarity

4:00 PM

Extinguishing the Dust Flares from Solar Farms in the Western Mohave Desert

Paper#: 33180

R. Farber, Atmospheric Clarity, West Covina, CA

4:20 PM

Modeling and Measurement of Fugitive Dust Emissions Using SWEEP (Single-event Wind Erosion Evaluation Program) and PI-SWERL (Portable In-Situ Wind Erosion Lab) on Owens Lake, California

Paper#: 33326

M. Schreuder, M. Schaaf, M. Schroeder; Air Sciences Inc., Portland, OR

TECHNICAL SESSIONS

4:40 PM

Wind Dust Emission Inventory for the International Border Region of Southern NM

Paper#: 33478

Y. Zhao, D. W. Dubois, M. P. Bleiweiss, R. Bates, V. Etyemezian; Las Cruces, NM

5:00 PM

Assessment of PM_{2.5} Air Quality Impacts and Potential Health Risks Posed by a Large Urban Building Construction Project

Paper#: 33469

C. M. Long; Gradient, Cambridge, MA

5:20 PM

Experimental Estimation of PM₁₀ Emission Factors from Surface Mining Operations

Paper#: 33081

P. A. Catizone¹, S. E. Zell², M. B. Newman², R. A. Southwick³; ¹TRC Environmental Corp., Windsor, CT, ²TRC, Windsor, CT, ³Great Northern Project Development, Townsend, MT

Implementing the PM_{2.5} New Source Review (NSR) Program

REGU-TuesPM2

Room: CC 202BC

6/24/2014 4:00 PM

Panel

TCC: REG

Chair: Gary McCutchen, RTP Environmental Associates, Inc.

Although the first PM_{2.5} NAAQS was promulgated more than a decade ago, EPA had, until 2009, allowed use of PM₁₀ as a surrogate for PM_{2.5} in conducting the analyses required for PSD and nonattainment area permits. Although EPA, in the 2009 rulemaking, deemed the technical and administrative problems of implementing a PM_{2.5} NSR program resolved, numerous questions and concerns remain. The rulemaking itself was extremely unusual: two different rulemakings, resulting in the requirement to implement a PM_{2.5} permitting program before the SIL and SMC values were available; this forced States to establish their own values for these important parameters. Among the remaining concerns: how to model the impacts of precursors on PM_{2.5} ambient concentrations; whether a significant increase in a precursor (such as NO_x or SO₂) would trigger a BACT analysis requirement for PM_{2.5} direct emissions, even if the PM_{2.5} direct emissions were not significant; the implications of requiring LAER instead of BACT for precursors SO₂ and NO_x in PM_{2.5} nonattainment areas; the effect of the new major source baseline date (and subsequent minor source baseline dates) for PM_{2.5} on the availability of PSD increment; the difficulty of demonstrating compliance with the NAAQS due to high background levels of PM_{2.5}; the difficulty of finding SO₂ and NO_x offsets in PM_{2.5} nonattainment areas; the increased stringency of the PM_{2.5} significance levels and increments (compared to PM and PM₁₀ levels); the

continuing problems with quantifying the condensable portion of PM_{2.5} direct emissions, despite the modification of the Method 202 reference test method; and the effect of the D.C. Circuit court decision on the need for impact analyses for PM_{2.5} due to the vacatur of the Significant Impact Levels (SIL) and Significant Monitoring Concentrations (SMC). The panel will discuss the problems and progress associated with implementing the program.

Panelists:

- Gary McCutchen, RTP Environmental Associates, Inc.
- Raj Rao, EPA
- Bill Wehrum, Hunton & Williams LLP

Mini-Symposium Platform: Emissions from Transportation Hubs and Ports

MINI-TuesPM2

Room: CC 101A

6/24/2014 4:00 PM

Platform

TCC: OMS

Chair: Shauna Hallmark, Iowa State University

Vice Chair: Guido Schatteneck, Parsons Brinckerhoff

4:00 PM

GIS-Based Calculators for Evaluation of Vessel Voyage Emission Reduction Measures

Paper#: 33610

T. Stoeckenius, C. Lindhjem, J. Florey, T. Bartlett, T. Shah, T. Sturtz, D. Kim, L. Chan; ENVIRON International Corp., Novato, CA

4:20 PM

Ocean Going Vessel Air Emission Management

Paper#: 33143

C. T. Atkins, T. Pisano; City of Los Angeles – Harbor Department, San Pedro, CA

4:40 PM

Emissions Reductions from At-berth Ocean-going Vessels Using an Advanced Emissions Control System (AMECS)

Paper#: 33605

V. Jayaram¹, H. Dalvi¹, J. Hower², R. Sharp³; ¹ENVIRON International Corporation, Irvine, CA, ²ENVIRON International Corporation, Los Angeles, CA, ³Advanced Cleanup Technologies Inc., Carson, CA

5:00 PM

Meeting the Demands of Port Drayage with Clean Trucks and Clean Technologies

Paper#: 33266

R. Siengsubcharti; Port of Long Beach, Long Beach, CA

TECHNICAL SESSIONS

Noise Emerging Issues

TRAN/H&EE-TuesPM2

Room: CC 203A

6/24/2014 4:00 PM

Platform

TCC: CNV

Chair: Roger Wayson, US Department of Transportation – Volpe Center

Vice Chair: Robert Mentzer, Harris Miller Miller & Hanson Inc.

4:00 PM

Community Noise Measurement and Prediction – What We Don't Know, i.e. Uncertainty

Paper#: 33144

R. J. Peppin; Engineers for Change, Inc., Rockville, MD

4:20 PM

Calibration of Acoustical Instruments

Paper#: 33145

R. J. Peppin; Engineers for Change, Inc., Rockville, MD

4:40 PM

Evaluating Noise and Emissions for Performance Based Navigation Procedures at Airports

Paper#: 33630

R. C. Mentzer; Harris Miller Miller & Hanson Inc., Burlington, MA

5:00 PM

Numerical Aerodynamic Noise Characteristics of NREL Phase VI Wind Blade Using CFD

Paper#: 33561

K. Lee¹, S. Roy², Z. Huque², X. Shen², R. R. Kommalapati²;
¹Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ²Prairie View A&M University, Prairie View, TX

5:20 PM

Using On-Board Sound Intensity (OBSI) for Other Purposes

Paper#: 32764

R. L. Wayson¹, J. MacDonald²;
¹US Department of Transportation – Volpe Center, Cottonwood Shores, TX, ²Acoustic Consultant, Winter Park, FL

Photochemical Modeling Issues

AIRS/REGU-TuesPM2

Room: CC 201

6/24/2014 4:00 PM

Platform

TCC: APM

Chair: Ralph Morris, ENVIRON International Corporation

Vice Chair: Abhishek Bhat, Trinity Consultants

4:00 PM

Regional Photochemical Modeling 101 – Obstacle and Challenges

Paper#: 33594

A. Bhat¹, C. Haman², T. Gardner³;
¹Trinity Consultants, Dallas, TX, ²Trinity Consultants, Baton Rouge, LA, ³BREEZE Software and Data, Dallas, TX

4:20 PM

Assessment of the Role of Regional Ozone and Particulate Matter Transport in the Western United States

Paper#: 31779

R. E. Morris¹, B. Koo¹, T. Sakulyanontvittaya¹, T. Moore²;
¹ENVIRON International Corporation, Novato, CA, ²Western Regional Air Partnership, Fort Collins, CO

4:40 PM

Evaluation of Single-source Air Quality Modeling Techniques for Addressing Long Range Transport Air Quality and Air Quality Related Value Issues

Paper#: 31770

R. E. Morris, L. Parker, P. Karamchandani; ENVIRON International Corporation, Novato, CA

5:00 PM

Impact Assessment of Individual Power Plant Emission Reduction on Regional Air Quality

Paper#: 33036

X. Dong, J. Fu; University of Tennessee, Knoxville, Knoxville, TN

5:20 PM

Development of a Principal Component Regression Model for Predicting Ozone Exceedance

Paper#: 33625

W. Li, H. Yang, V. Valenzuela; University of Texas at El Paso, El Paso, TX

TECHNICAL SESSIONS

5:40 PM

Evaluating the Impact of Emission Changes on Observed and Simulated Ozone Concentrations: Learning from the past to Predict the Future

Paper#: 33041

C. Hogrefe¹, S. Roselle¹, P. Porter², S. Rao³, R. Mathur⁴, J. Xing⁵, C. Wei⁵; ¹EPA, Research Triangle Park, NC, ²Porter-Gego, Idaho Falls, ID, ³North Carolina State University, Raleigh, NC, ⁴EPA, Durham, NC, ⁵EPA

Toxic and Indoor Air Pollution Exposure

H&EE-TuesPM2

Room: CC 102B

6/24/2014 4:00 PM

Platform

TCC: HEE

Chair: Suresh Santanam, Syracuse Center of Excellence

Vice Chair: Jim Morrow, J.W. Morrow

4:00 PM

Evaluation of Exposure to Airborne Contaminants During the Deepwater Horizon Oil Spill

Paper#: 33666

S. Zemba, R. Lester, L. Green; CDM Smith, Cambridge, MA

4:20 PM

Aerosol Inhalation Exposure from Nanotechnology-based Consumer Sprays: A Quantitative Assessment

Paper#: 33447

Y. Nazarenko¹, P. J. Lioy², G. Mainelis³; ¹McGill University, Montreal, QC², ¹Rutgers Environmental and Occupational Health Sciences Institute; ²Department of Environmental and Occupational Medicine, RBHS-Robert Wood Johnson Medical School, Piscataway, NJ, ³Rutgers University, Department of Environmental Sciences, New Brunswick, NJ

4:40 PM

PCBs: An Indoor Air Hazard in Older Buildings?

Paper#: 33607

S. Zemba, L. Green, E. Crouch, M. Salvetti, P. Muniz, B. Tomicic; CDM Smith, Cambridge, MA

5:00 PM

An Investigation of the Trends of Particulate Pollution (PM₁₀, PM_{2.5} and PM_{1.0}) in Indoor Air of Urban Homes of Lucknow City

Paper#: 33963

A. Lawrence, N. Fatima; Isabella Thoburn College, Lucknow, India

Zero Waste Approaches and Practices

SUST/WAST-TuesPM2

Room: CC 102C

6/24/2014 4:00 PM

Platform

TCC: SRC

Chair: Chih C. Chao, WRC International

Vice Chair: Sam Virgil, Cal Poly State University

4:00 PM

Photo Reduction of CO₂ to Fuel with Waste Pencil Lead Prepared Materials Under Visible Light

Paper#: 31884

Q. Zhang¹, C. Chang², C. Lin³; ¹Graduate Institute of Environmental Engineering, National Taiwan University, Ilan, Taiwan, ²National Ilan University, Ilan, Taiwan, ³Graduate Institute of Environmental Engineering, National Taiwan University, Taipei, Taiwan

4:20 PM

Evaluating Sustainability and Life-cycle Impacts of Waste Tire Management Alternatives

Paper#: 33541

S. Fagnen¹, R. Penalillo², A. Acuna², D. Tanzil³; ¹Golder Associates, Montreal, QC, ²Golder Associates, Santiago, ³Golder Associates, Houston, TX

4:40 PM

Eliminating Waste One Student at a Time – a Roadmap for Zero Waste Schools

Paper#: 33665

J. P. Sanders; Plastics Solutions Inc. / EcoSafe® Zero Waste, Venice, CA

5:00 PM

Converting Wastes Generated on Campus into Renewable Energies- a Case Study for University of Cincinnati

Paper#: 32943

Q. Tu¹, C. Zhu², M. Lu², D. McAvoy³; ¹University of Cincinnati, Newport, KY, ²University of Cincinnati, Cincinnati, OH, ³University of Cincinnati

TECHNICAL SESSIONS

Wednesday, June 25, 2014

Industry Focus	Session ID	Session Title	TCC(s)	Session Format
Starting at 9:00 am				
Critical Review				
10:10am- 11:50 am				
	FEDS/REGU-WedAM2	Air Quality Data Mgmt at Federal Facilities	FED	Platform
	CLIM-WedAM2	Climate Change Mitigation Strategies	CCP	Platform
	MINI-WedAM2	Mini-Symposium Platform: Diesel Emission Updates – Multiple Transportation Modes	OMS	Platform
	O&GS/INDU-WedAM2	Environmental Science Issues in the Chemical & Refining Industries	CHP	Platform
	AIRS-WedAM2	Innovative Modeling Techniques – Part 1	APM	Platform
	AIRS-WedAM2	Particulate Matter Measurements and Emissions	APP	Platform
	H&EE-WedAM2	Risk Assessment Modeling Tools and Techniques, Part 1	RAM	Platform
	TRAN-WedAM2	Transportation and Air Quality – New Case Studies and Methods	OMS	Platform
	INDU-WedAM2	VOC Control Technologies and Strategies I	AAC	Platform
	WAST/SUST-WedAM2	Waste Characterization, Treatment and Beneficial Use I	WMR	Platform
	SUST/WAST-WedAM2	Zero Waste Systems: Economics, Funding and Payback	SRC	Panel
1:20 pm- 3:00 pm				
	AIRS-WedPM1	Analysis of Ambient Particulate Matter Data	APP	Platform
	AIRS-WedPM1	Atmospheric Chemistry, Part 1	APC	Platform
	YOUN/EDUC-WedPM1	Challenges in Environmental Education, Training, and Outreach	EDC	Panel
	REGU-WedPM1	EPA Regulatory Priorities for 2014–2015	REG	Panel
	MINI/CLIM-WedPM1	Mini-Symposium Platform: Greenhouse Gas Issues Related to Freight and Intermodal Facilities	PLU	Platform
	AIRS-WedPM1	Innovative Modeling Techniques – Part 2	APM	Platform
	AIRS-WedPM1	PM Measurements & Control I	APP	Platform
	SUST/WAST-WedPM1	Resource Sustainability: Programs and Practices I	SUS	Platform
	H&EE-WedPM1	Risk Assessment Modeling Tools and Techniques, Part 2	RAM	Platform
	LOCA-WedPM1	The Twin Challenge of Air Districts – Community & Education Outreach	LHC	Panel
	TRAN/H&EE-WedPM1	Transportation Land-Use and Exposure	PLU	Platform
	INDU-WedPM1	VOC Control Technologies and Strategies II	AAC	Platform
	WAST/SUST-WedPM1	Waste Characterization, Treatment and Beneficial Use II	WMR	Platform
3:00 pm- 3:40 pm				
Session Break				
3:40 pm- 5:20 pm				
Technical Poster Session				

Program Key			Program Key		
Track ID	Industry/Environmental Focus		Track ID	Industry/Environmental Focus	
	AIRS	Air-Measurements and Basic Science		SUST	Sustainability
	EDUC	Education		TRAN	Transportation
	ENER	Renewable Energy		WAST	Waste Management
	FEDS	Federal		LOCA	Local Topic
	H&EE	Health & Environmental Effects		YOUN	Young Professionals
	INDU	Heavy Industry and General Manufacturing		POWR	Power Generation
	MINI	Mini-Symposium on Transportation Hubs & Ports		NANO	Nanoparticles
	O&GS	Oil & Gas		CLIM	Climate Change
	REGU	Regulatory			

TECHNICAL SESSIONS

Wednesday, June 25, 2014

Air Quality Data Management at Federal Facilities

FEDS/REGU-WedAM2
Room: CC 203C

6/25/2014 10:10 AM

Platform
TCC: FED

Chair: Brent Allred, Northrop Grumman Information Systems
Vice Chair: Francisco Castaneda, Air Force Civil Engineer Center

10:10 AM

Diversified Data Management: a Case Study in Air Quality Data Management Through Shop Personnel Involvement at Fort Hood

Paper#: 33609

R. Kennedy¹, S. Wallace²; ¹U.S. Army, Fort Hood, TX, ²Northrop Grumman, Clearfield, UT

10:30 AM

Air Force General Conformity Automation

Paper#: 33410

F. Castaneda¹, J. R. McClain², J. E. McClain²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²Solutio Environmental, Inc., San Antonio, TX

10:50 AM

Creating & Managing a Comprehensive Emission Methodology Data Set for an Enterprise as Large as the U.S. Air Force

Paper#: 33631

F. Castaneda¹, S. Wallace²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²Northrop Grumman, Clearfield, UT

11:10 AM

Enterprise Level Data Management and Reporting Across the Air Force

Paper#: 33420

F. Castaneda¹, W. L. Rottgering²; ¹Air Force Civil Engineer Center, San Antonio, TX, ²Northrop Grumman Information Systems, San Antonio, TX

11:30 AM

Permit Decomposition & Compliance Checklist Standardization to Allow for Risk Management in Large Enterprises

Paper#: 33618

S. Wallace; Northrop Grumman, Clearfield, UT

Climate Change Mitigation Strategies

CLIM-WedAM2
Room: CC 202A

6/25/2014 10:10 AM

Platform
TCC: CCP

Chair: Miriam Lev-On, The LEVON Group, LLC
Vice Chair: Stan Hayes, ENVIRON International Corp.

10:10 AM

Greenhouse Gases - From a Global Perspective to Personal Responsibility

Paper#: 33049

S. Dawson; Matrix Solutions Inc., Calgary, AB

10:30 AM

Risks of Carbon Credit Invalidation Under California's Cap N Trade Program

Paper#: 33457

R. Kapahi; BC Environmental Insurance, Inc., Wilton, CA

10:50 AM

Life-cycle Assessment for the Production of Bioethanol in Colombia by Using Openlca

Paper#: 33001

R. Buitrago-Tello¹, L. Belalcazar²; ¹Master student, Bogotá, Colombia, ²Universidad Nacional de Colombia Facultad Ingeniería, Departamento Ingeniería Química y Ambiental, Bogotá, Colombia

11:10 AM

The MATS Conundrum- How Does the GHG NSPS Impact Old Smokey Power?

Paper#: 33659

P. T. Belmonte; Environmental Resources Management (ERM), Houston, TX

Environmental Science Issues in the Chemical & Refining Industries

O&GS/INDU-WedAM2
Room: CC 103A

6/25/2014 10:10 AM

Platform
TCC: CHP

Chair: Ed Fiesinger, Zephyr Environmental Corp.
Vice Chair: Gary Elliott, Lafarge North America

10:10 AM

Measurement of Gaseous Impurities in Hydrogen Fuel

Paper#: 32841

R. Bramston-Cook¹, E. Bramston-Cook¹, D. Blekhan²; ¹Lotus Consulting, Long Beach, CA, ²California State University Los Angeles, Los Angeles, CA

TECHNICAL SESSIONS

10:30 AM

Nanotechnology – Little Things, Big Issues

Paper#: 33247

W. C. Looney; AECOM, Milwaukee, WI

10:50 AM

CFD Simulations of H₂S-Rich Plumes from Oil/Gas Well Blowouts

Paper#: 33608

S. Zemba¹, R. N. Saikaly², C. S. Hibbard³, T. Maksoudian, K. Molloy, J. Welch; ¹CDM Smith, Cambridge, MA, ²CDM Smith, Pittsburgh, PA, ³CDM Smith Inc., Cambridge, MA

11:10 AM

Comparison of Multi-state Air Permitting Processes

Paper#: 33006

G. E. Mesing; QSEM Solutions, Inc., Beaver, PA

11:30 AM

Air Permitting and Licensing Issues at LNG Bi-directional Facility, Federal and State Requirements

Paper#: 33367

D. G. Caniparoli, L. A. Brown, PE; CH2M HILL, Portland, OR

11:50 AM

Planning for Compliance in a Changing Regulatory Landscape: Tips for a Successful Third-party Compliance Audit

Paper#: 33415

M. Mills; CDM Smith, Houston, TX

Innovative Modeling Techniques - Part 1

AIRS-WedAM2

Room: CC 201

6/25/2014 10:10 AM

Platform

TCC: APM

Chair: Piotr Staniaszek, Millennium EMS Solutions Ltd.

Vice Chair: Geoff Scott, Golder Associates, Inc.

10:10 AM

Black Box: On the Education of Air Dispersion Modelers

Paper#: 33527

M. T. Hammer; Lakes Environmental Software, Allen, TX

10:30 AM

Characterization of Background Concentrations for Dispersion Modeling Assessments

Paper#: 33401

B. Cosic, M. F. Jammer, R. Singh; ENVIRON EC, Inc., Mississauga, ON

10:50 AM

Validation and Application of CFD for Urban City Microenvironment

Paper#: 33548

K. Lee¹, Z. Huque², X. Shen², R. R. Kommalapati², S. Han³, J. Cho⁴; ¹Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ²Prairie View A&M University, Prairie View, TX, ³Inha University, Incheon, South Korea, ⁴HYUNDAI Engineering & Construction

11:10 AM

Evaluation of New Wind Tunnel, AERMOD and CFD Methodologies to Determine EBD in Light of the 2011 EPA Memorandum

Paper#: 33263

R. L. Petersen, A. Kolesnikov, A. Beyer-Lout; CPP, Inc., Fort Collins, CO

Mini-Symposium Platform: Diesel Emission Updates - Multiple Transportation Modes

MINI-WedAM2

Room: CC 101A

6/25/2014 10:10 AM

Platform

TCC: OMS

Chair: H. Christopher Frey, North Carolina State University

Vice Chair: David Cooper, University of Central Florida

10:10 AM

Roseville Rail Yard Air Monitoring Project

Paper#: 33501

D. Campbell¹, E. Fujita¹, R. Countess², G. Rubenstein³, R. Ireson⁴, Y. Chang, T. Christofk; ¹Desert Research Institute, Reno, NV, ²Countess Environmental, Westlake Village, CA, ³Sierra Research, Sacramento, CA, ⁴AQM Consulting, Greenbrae, CA

10:30 AM

Comparison of Real-world Emission Rates of a Locomotive Engine Operating on Diesel and Biodiesel

Paper#: 33106

B. M. Graver¹, J. Hu¹, H. Frey²; ¹North Carolina State University, Raleigh, NC, ²Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC

10:50 AM

A Drive-through On-Road, Heavy-duty, Emissions Measurement System (OHMS) to Integrate Pollutant Emissions.

Paper#: 32022

D. H. Stedman¹, G. Bishop¹, R. Hottorr-Raguindin¹, C. Misra²; ¹University of Denver, Denver, CO, ²California Air Resources Board, Sacramento, CA

TECHNICAL SESSIONS

11:10 AM

Lessons from the Mid-Atlantic Dray Truck Replacement Program

Paper#: 32935

J. S. Wierman¹, D. L. Thomas¹, M. S. Burian²; ¹Mid-Atlantic Regional Air Management Association, Inc. (MARAMA), Towson, MD, ²University of Maryland Environmental Finance Center, College Park, MD

11:30 AM

Calculating Ship and Harbor Craft Emissions at Maritime Ports for Evaluation of Future Year Operations

Paper#: 33061

J. Koehler¹, L. Browning²; ¹Environmental Resources Management (ERM), Walnut Creek, CA, ²ICF International, Aptos, CA

Particulate Matter Measurements and Emissions

AIRS-WedAM2

Room: CC 103B

6/25/2014 10:10 AM

Platform

TCC: APP

Chair: Michael Meyer, BGI Incorporated

Vice Chair: David Gobeli, Met One Instruments Inc.

10:10 AM

The Importance of Accurate PM_{2.5} Emission Estimates

Paper#: 33346

C. MacDougall; CH2M HILL, Henderson, NV

10:30 AM

Comparison of the Concentration of Radioisotopes in PM₁₀ in Air and Silt in Soil in Aldama City

Paper#: 33450

M. Y. Montelongo¹, E. F. Herrera Peraza²; ¹Ninguna, Chihuahua, Mexico, ²Centro de Investigacion en Materiales Avanzados (CIMA), Chihuahua, Mexico

10:50 AM

Monitoring of PM₁₀, PM_{2.5} and Black Carbon Concentrations at Urban Environments in Bangladesh

Paper#: 33647

B. A. Begum¹, G. Saroar², P. Hopke³; ¹Chemistry Division, Atomic Energy Centre, Bangladesh Atomic Energy Commission, Dhaka, Bangladesh, ²Department of Environment, Dhaka, Bangladesh, ³Clarkson University, NY, Postdam, NY

11:10 AM

Evaluation of a Method for Quantifying Low Level pm Emissions Using a Composite Filter and Real-time Black Carbon Measurement

Paper#: 32052

M. A. Kamboures, S. Sardar, S. Zhang, O. M.-C. Chang, P. L. Rieger, A. Ayala, D. Huo, I. Dzhema, D. Lee, H. Toutoundjian, M. Cruz, H. Khou, B. Frodin; California Air Resources Board (Southern Laboratory Branch), Lake Forest, CA

11:30 AM

In Situ Measurement of Black Carbon Emission from Gasoline Powered Vehicles

Paper#: 32564

K. Du¹, Y. Wang², Z. Xing³; ¹University of Calgary, Calgary, AB, ²Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China, ³Institute of Urban Environment, Chinese Academy of Sciences, Xiamen, China

Risk Assessment Modeling Tools and Techniques - Part 1

H&EE-WedAM2

Room: CC 102B

6/25/2014 10:10 AM

Platform

TCC: RAM

Chair: Scott Weaver, ERM

Vice Chair: Heidi Rous, PCR Services Corp

10:10 AM

Health Risk Assessment: Simplified Box Model vs. Detailed Dispersion Modeling

Paper#: 33176

E. Yan¹, H. Rous², A. Sako²; ¹PCR Services Corp, Santa Monica, CA, ²PCR Services Corp, Pasadena, CA

10:30 AM

Combined Use of AERMOD, ArcGIS, and Risk Analyst for Human Health Risk Assessment

Paper#: 33578

A. Bhat¹, T. Gardner², A. R. Jones¹; ¹Trinity Consultants, Dallas, TX, ²BREEZE Software and Data, Dallas, TX

10:50 AM

How Did the Largest Oil Operation Organization in the World Develop Its EMS?

Paper#: 32137

M. H. Al-Dajani¹, E. M. El-ayoubi²; ¹Saudi Aramco, Udhailiyah, Saudi Arabia ²Saudi Aramco - Abqaiq Plants, Abqaiq, Saudi Arabia

TECHNICAL SESSIONS

11:10 AM

Air Quality Monitoring at Front Range Community College: Environmental Education Efforts at the Community College Level

Paper#: 33354

C. M. Carrico¹, C. Mozer², W. Bailey²; ¹AECOM, Fort Collins, CO, ²Front Range Community College, Fort Collins, CO

Transportation and Air Quality - New Case Studies and Methods

TRAN-WedAM2

Room: CC 203A

6/25/2014 10:10 AM

Platform

TCC: OMS

Chair: Guido Schattaneck, Parsons Brickerhoff Inc.

Vice Chair: Gurdas Sandhu, North Carolina State University

10:10 AM

Impact of Current and Future Transportation on Air Quality in Houston

Paper#: 33431

X. Shen¹, S. Sarker², K. Lee³, Y. Yan⁴, Z. Liang³, Z. Huque¹, R. R. Kommalapati¹; ¹Prairie View A&M University, Prairie View, TX, ²Department of Civil and Environmental Engineering, Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ³Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ⁴Department of Computer Science, Prairie View A&M University, Prairie View, TX

10:30 AM

Implications of Using MOBILE6.2 versus MOVES for Transportation Air Quality Assessments

Paper#: 33512

R. S. Mahabir, H. Liu, K. Patmore, J. Ahluwalia, A. Lanigan; Dillon Consulting Limited, Oakville, ON

10:50 AM

Estimation and Mitigation of the Air Quality Levels near Tunnel Exit Portals

Paper#: 33495

H. Ginzburg, G. G. Schattaneck; Parsons Brinckerhoff, New York, NY

11:10 AM

Findings of near Road Nitrogen Oxides 30 Month Monitoring Program at Dewey Square Tunnel in Boston, MA

Paper#: 30877

G. G. Schattaneck¹, H. Ginzburg¹, S. Tarantino², D. R. Murray³, D. Gill³, D. Lowes-Hobson³; ¹Parsons Brinckerhoff, New York, NY, ²MassDOT, Boston, MA, ³TRC, Windsor, CT

11:30 AM

Mechanism Study of Heavy Air Pollution in the Gap Town Ürümqi in Northern Tianshan Mountain from Climatological Aspect

Paper#: 33221

X. Li¹, X. Xia², L. Wang³, R. Cai⁴, L. Zhao⁵, Z. Feng⁶, Q. Ren⁷, K. Zhao⁸; ¹Institute of Desert and Meteorology, China Meteorological Administration, Ürümqi, China, ²LAGEO, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, ³Ürümqi Meteorological Bureau, Ürümqi, China, ⁴Ürümqi Meteorological Bureau, Ürümqi, China, ⁵Institute of Desert and Meteorology, China Meteorological Administration, Ürümqi, China, ⁶Xinjiang Climatic Center, Ürümqi, China, ⁷Ürümqi Meteorological Bureau, Ürümqi, China, ⁸Xinjiang Meteorological Observatory, Ürümqi, China

VOC Control Technologies and Strategies I

INDU-WedAM2

Room: CC 102A

6/25/2014 10:10 AM

Platform

TCC: AAC

Chair: Rakesh Govind, University of Cincinnati

10:10 AM

Study on the Treatment of Volatile Organic Compounds with Mesoporous Materials Prepared from Calcium Fluoride Sludge

Paper#: 33425

T. H. Hsin, M. Chih-Ming, H. Cui-Bing; Student Masters, Ilan, Taiwan

10:30 AM

Methodologies and Uncertainties for Measuring Black Carbon and NOx from Lab-scale and in Situ Upstream Oil and Gas Flares

Paper#: 33580

D. J. Corbin, M. R. Johnson; Carleton University, Ottawa, ON

10:50 AM

Effect of Physical Adsorption on the Electrical Resistivity of Activated Carbon Fiber Cloth with Select Physical and Chemical Properties

Paper#: 32326

D. L. Johnsen¹, Z. Zhang², H. Emamipour¹, Z. Yan³, M. J. Rood⁴; ¹University of Illinois at Urbana-Champaign, Urbana, IL, ²State Key Laboratory of Heavy Oil Processing, Key Laboratory of Catalysis CNPC, China University of Petroleum, Qingdao, China, ³State Key Laboratory of Heavy Oil Processing, Key Laboratory of Catalysis, CNPC, China University of Petroleum, Qingdao, China, ⁴Department of Civil and Environmental Engineering, University of Illinois, Urbana, IL

TECHNICAL SESSIONS

11:10 AM

Reactivation of Spent Beaded Activated Carbon for Decreasing Irreversible Adsorption

Paper#: 33031

J. D. Atkinson¹, M. Jahandar Lashaki², Z. Hashisho², J. H. Phillips³, J. E. Anderson⁴, M. Nichols⁴; ¹University of Alberta, Edmonton, AB, ²Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ³Ford Motor Company, Environmental Quality Office, Dearborn, MI, ⁴Ford Motor Company, Research and Advanced Engineering, Dearborn, MI

Waste Characterization, Treatment and Beneficial Use I

WAST/SUST-WedAM2

Room: CC 103C

6/25/2014 10:10 AM

Platform

TCC: WMR

Chair: Jaclyn Karam, USAF-Rome Research Site

Vice Chair: Harish Rao, Rao Consulting Services

10:10 AM

Study on the Treatment of Methyl Blue by Mesoporous Materials Made from Rice Husk Ash

Paper#: 32145

N. Nguyen¹, S. Chen², C. Chang³; Ilan, Taiwan, ²National Taipei University of Technology, Ilan, Taiwan, ³National Ilan University, Ilan, Taiwan

10:30 AM

The Effect of Solubility and Structure on Dye Wastewater Treatment with Electrochemical Process

Paper#: 31794

L. Chen¹, C. Yang²; ¹Tamkang University, New Taipei, Taiwan, ²Advanced Technology and Manufacture Research Center, University of Massachusetts, Dartmouth, Fall River, MA

10:50 AM

Determination of the Toxicity of Spent Fracturing Water from Energy Exploration

Paper#: 32001

E. F. Askew; Askew Scientific Consulting, Muscatine, IA

11:10 AM

Framework for Integrating Sustainability Principles in the Selection of a Remediation Option: Case Study in Gas Distribution

Paper#: 33530

B. Bourque¹, G. Carle¹, S. Hains², D. Tanzil³; ¹Golder Associates, Montreal, QC, ²Golder Associates, Quebec City, QC, ³Golder Associates, Houston, TX

Zero Waste Systems: Economics, Funding, and Payback

SUST/WAST-WedAM2

Room: CC 102C

6/25/2014 10:10 AM

Panel

TCC: SRC

Chair: Maggie Clarke, Maggie Clarke Environmental

Vice Chair: Chih C. Chao, WRC International

Waste-To-Energy and landfills represent technologies that one can visualize and execute calculations on financial returns, making it easier to attract investments. A city might want to undertake zero waste, but a WTE company has complete information on cost for each year and how much of the waste stream they can take. Zero waste, on the other hand, is a concept and policy approach, which requires a mixture of legislative, billing, programmatic, and technological measures including legislative prevention initiatives (bans, design for environment, EPR), improved billing (e.g., Pay-as-you-throw), reuse (centers, exchanges, etc), recycling and composting (collection, processing), involving public-private partnerships, advanced education, mandates, enforcement, etc. to make it happen. There is no zero waste company or any calculation of costs and because participation is a wild card, the amount and type of discards taken by each program, legislative initiative, is also uncertain. In order to know when a breakeven would take place for any particular town is very important information. In the absence of compelling mandates with fines, and without information on return on investment, most towns might not risk undertaking zero waste. This panel will discuss respective viewpoints, experiences and proposals for a mechanism to make it easier to visualize costs and benefits of zero waste over time, calculate return on investment, compare with disposal alternatives, etc.

Panelists:

- Maggie Clarke, Maggie Clarke Environmental
- Chih C. Chao, WRC International
- William Merry, Monterey Regional Waste Management District
- Richard Anthony, Richard Anthony Associates

TECHNICAL SESSIONS

Analysis of Ambient Particulate Matter Data

AIRS-WedPM1

Room: CC 103B

6/25/2014 1:20 PM

Platform

TCC: APP

Chair: Prakash Doraiswamy, RTI International

Vice Chair: Chuck McDade, University of California, Davis

1:20 PM

Spatial and Temporal Trends in Sulfur/Sulfate Ratio

Paper#: 33118

P. Doraiswamy, A. Khlystov, T. Dombek, J. Rkm, E. Hardison; RTI International, Research Triangle Park, NC

1:40 PM

Measurement of Aerosol Components from Agricultural Emissions

Paper#: 33537

P. Silva; USDA-ARS, Bowling Green, KY

2:00 PM

A Quick Approach to Estimate the Impact of Secondary Organic Aerosol Mass in PM_{2.5} for Compliance Demonstration

Paper#: 33403

T. Chen, B. McCann, S. Mohammad; Golder Associates, Gainesville, FL

2:20 PM

Air Quality Monitoring During Former Oakland Army Base Redevelopment: Achieving City, Port, District, and Developer Objectives and Transparency with the Community Through Web Portal Public Data Access

Paper#: 33634

M. Smith, D. Calkins, D. Chambers; Northgate Environmental Management, Inc., Oakland, CA

2:40 PM

Evaluation of Relative Impact of Local and Regional Source Regions on Pollution Levels in New Delhi, India

Paper#: 33628

S. Ghosh¹, J. Biswas², S. Guttikunda³, S. Roychowdhury⁴, M. Nayak⁵; ¹Ohio University, Athens, OH, ²IISWBM, Kolkata, India, ³Desert Research Institute, Reno, NV, ⁴Indian Institute of Social Welfare and Business Management, Kolkata, India, ⁵Ansal Institute of Technology, Gurgaon, Haryana, India

3:00 PM

PM_{2.5} Chemical Speciation in Southwest Ohio

Paper#: 33298

K. Li, M. Lu, A. Kelley; University of Cincinnati, Cincinnati, OH

Atmospheric Chemistry - Part 1

AIRS-WedPM1

Room: CC 103A

6/25/2014 1:20 PM

Platform

TCC: APC

Chair: Vera Samburova, Desert Research Institute

Vice Chair: Luis Alonso Diaz Robles, PDVSA Intevep

1:20 PM

The Influence of Ozone from Outside States: Towards Cleaner Air in Minnesota

Paper#: 33368

Y. Luan¹, L. Hu², K. Wells¹; ¹University of Minnesota, Saint Paul, MN, ²University of Minnesota, St. Paul, MN

1:40 PM

Meteorological Effects on the Ozone Formation and Concentration in the City of Caracas, Venezuela

Paper#: 33514

A. Sena D Anna, L. Diaz; PDVSA Intevep, Los Teques, Venezuela

2:00 PM

Improving the Reliability of Model Speciation Profiles for Vocs Emissions from Architecture Coating in Korea

Paper#: 33069

Y. Sunwoo, S. Kim, Y. Ma, D. Han, J. Kim; Konkuk University, Seoul, South Korea

2:20 PM

Land Use Regression Models for Predicting PM_{2.5} and UFP Concentrations in the City of Houston, Texas

Paper#: 32842

Y. Yuan¹, T. Khan², D. Ramirez³, H. Li³; ¹Texas Commission on Environmental Quality, Austin, TX, ²Michigan Technological University, Houghton, MI, ³Texas A&M University Kingsville, Kingsville, TX

Challenges in Environmental Education, Training, and Outreach

YOUN/EDUC-WedPM1

Room: CC 203C

6/25/2014 1:20 PM

Panel

TCC: EDC

Chair: Ashok Kumar, University of Toledo

This panel session will cover a variety of topics related to challenges in delivering environmental education, training, and outreach related to topics of environmental education accreditation, distance learning, sustainability, ethics, entrepreneurship, and engineering curriculum. Different case histories will be presented by the speakers to explain the current and future efforts in these areas. For example, sustainability is

TECHNICAL SESSIONS

driving major shifts in the business world, changing the landscape for all companies, and leading to innovative business models, strategies and product design. Environmental professionals who understand these trends are finding new business opportunities. Another area is ethics. The unprecedented size and speed of global transactions, the world is poised for potential problems in many areas. Extreme greed, whether for money or nature's resources, has disastrous consequences. Corporate governance and the significance of building ethical cultures in organization in the context of the new business ambiance and social contract make effective ethics training crucial to overcome our inherent selfishness. Difficulties faced by educators in preparing information for the ABET accreditation is important. The issue of changes to current courses is also important to educators. A critical component of web-site development for different must include planning for sustained updating and development. The person handling website should have a thorough knowledge about the technology and software for updating the website. The session members will present the following:

- One of the speakers will discuss the use of new information to revise current courses.
- Second speaker will speak on business opportunity in a green economy.
- Dr. Ashok Kumar will discuss the challenges in preparing the ABET Self-Study.
- Fourth speaker will talk about ethics and associated challenges in training.
- Fifth speaker will examine the challenges in maintaining an environmental web sites.

Panelists:

- *William Stockwell, Howard University, Department of Chemistry and HU Atmospheric Science Program*
- *Ashok Kumar, University of Toledo*
- *Ram Ramanan, IIT Stuart School of Business, Chicago*
- *Hal Taback, Hal Taback Company*
- *Michael Kleinman, Department of Medicine, UC Irvine*

EPA Regulatory Priorities for 2014–2015

REGU-WedPM1

Room: CC 104A

6/25/2014 1:20 PM

Panel

TCC: REG

Chair: David Jordan, ERM

EPA is continuing its work on a number of important regulatory initiatives under the Clean Air Act. Congressional oversight and budget pressures are causing questions to be raised as to whether EPA has the resources to successfully move forward with these initiatives in a timely fashion. New regulatory initiatives include the development of GHG emission standards in New Source Performance Standards (NSPS) for new and existing electric utility units. EPA is continuing its regular review of National Ambient Air Quality Standards (NAAQS), and is expected to be considering the adequacy of current standards for lead and for ozone over the next two years.

Recently revised NAAQS for PM_{2.5} and SO₂ are leading to the need for improved modeling guidance. As a part of the overall State Implementation Plan (SIP) process, EPA is developing guidance for State/local regulatory agencies to follow in preparing SIPs for SO₂. Recent court decisions related to New Source Review (NSR) are also receiving attention from agency staff. The number of regulatory initiatives under consideration cause challenges for State and local air regulators as they work to incorporate these requirements into State/local statutes. Budget pressures on a State/local basis have resulted in hiring freezes for many agencies, leading to an inability to adequately implement and enforce new regulations. The regulated community faces the challenge of keeping up with regulatory rule changes that in some cases may be overlapping. EPA headquarters staff will discuss regulatory and policy priorities over the coming year and outline the anticipated timeframe for key regulatory milestones. This will include discussion of anticipated new regulations and compliance/enforcement priorities. Comments on EPA priorities will be provided by a representative of the regulated community and a representative of state/local air agencies.

Panelists:

- *Janet McCabe, EPA*
- *Barry Wallerstein, South Coast Air Quality Management District*
- *Michael J. Carroll, Latham & Watkins LLP*

Innovative Modeling Techniques – Part 2

AIRS-WedPM1

Room: CC 201

6/25/2014 1:20 PM

Platform

TCC: APM

Chair: Piotr Stanciaszek, Millennium EMS Solutions Ltd.

Vice Chair: Geoff Scott, Golder Associates, Inc.

1:20 PM

An Application of Radar-based Stage IV Hourly Precipitation Data in a CALPUFF Wet Deposition Analysis

Paper#: 33322

M. B. Newman¹, M. Jones², P. A. Catizone³, ¹TRC, Windsor, CT, ²TRC, Lowell, MA, ³TRC Environmental Corp., Windsor, CT

1:40 PM

Methods of Coupling CALMET with WRF-NMM Fine Resolution Meso-scale Model

Paper#: 33136

Z. Radonjic¹, D. Chambers², B. Telenta³, B. Lawrence⁴, J. Kirkaldy; ¹Senior Environmental Meteorologist, North York, ON, ²Principal, Richmond Hill, ON, ³Senior Weather Modelling Specialist, Richmond Hill, ON, ⁴Senior Environmental Scientist, St. Johns, NL

TECHNICAL SESSIONS

2:00 PM

A Monte Carlo Approach to Estimating Impacts from Highly Intermittent Sources on Short Term Standards

Paper#: 31385

C. Bowman, R. Dhammapala; State of Washington, Department of Ecology, Olympia, WA

2:20 PM

Modeling Sulfur Dioxide Flare Emissions from Well Sites

Paper#: 33347

R. N. Saikaly¹, S. Zemba²; ¹CDM Smith, Pittsburgh, PA, ²CDM Smith, Cambridge, MA

Mini-Symposium Platform: Greenhouse Gas Issues Related to Freight and Intermodal Facilities

MINI/CLIM-WedPM1

Room: CC 101A

6/25/2014 1:20 PM

Platform

TCC: OMS

Chair: Harold Brazil, Metropolitan Transportation Commission

Vice Chair: Miriam Lev-On, The LEVON Group, LLC

1:20 PM

Case Studies in Applying EPA's TEAM Approach to Assess Transportation Demand Management Project Impacts on Regional Air Quality

Paper#: 33151

S. Hartley¹, F. Gallivan¹, B. Bowen², M. Simons³; ¹ICF International, San Francisco, CA, ²ICF International, Garner, NC, ³EPA Office of Transportation and Air Quality, Ann Arbor, MI

1:40 PM

Assessment of Construction and Maintenance Greenhouse Gas Emissions from Transportation Infrastructure

Paper#: 33107

J. Houk¹, J. Davies², F. Gallivan³; ¹Federal Highway Administration Resource Center, Lakewood, CO, ²Federal Highway Administration, Washington, DC, ³ICF International, San Francisco, CA

2:00 PM

Assessing Emissions from Commercial Motor Vehicle Safety Inspections at Weigh Stations and Port of Entry Facilities

Paper#: 33629

G. J. Noel; US Department of Transportation – Volpe Center, Chelmsford, MA

2:20 PM

Green Port in Mexico: Development of Combustion Emission Inventory in the Port of Veracruz, Mexico

Paper#: 33596

H. Bravo, R. Sosa, P. Sanchez, G. Fuentes, L. Tami; Universidad Nacional Autonoma de México, Mexico

PM Measurements & Control I

AIRS-WedPM1

Room: CC 101B

6/25/2014 1:20 PM

Platform

TCC: AAC

Chair: Michael Meyer, BGI Incorporated

1:20 PM

Innovative Wet Scrubber for Collecting Particles and Contaminated Gases

Paper#: 33296

I. Ubaldo Espinosa, G. Devi Singh, E. Lopez Galvan, T. Pichardo Esquivel; Faculty of Technology, Greater Georgetown, Guyana

1:40 PM

Filtration of Carbon Nanoparticles with Granulat Activated Carbon

Paper#: 33320

R. N. Sucky, D. Ramirez; Texas A&M University Kingsville, Kingsville, TX

2:00 PM

Capture of Submicrometer Particles from Air-fired and Oxy-coal Combustions by a Soft X-ray Enhanced Electrostatic Precipitator

Paper#: 32941

H. Jing, X. Wang, W. Wang, P. Biswas; Washington University in St. Louis, Saint Louis, MO

2:20 PM

CFD Modeling of Electrostatic Precipitation of Particulate Matter for Optimization of an ESP Design for Poultry Facilities

Paper#: 33497

R. R. Manuzon¹, L. Zhao²; ¹The Ohio State University, St. Louis, MO, ²The Ohio State University, Columbus, OH

2:40 PM

An Improved Failure Rate Model

Paper#: 32932

R. R. Dupont¹, F. Ricci², L. Theodore³; ¹Utah Water Research Laboratory, Utah State University, Smithfield, UT, ²Princeton University, Princeton, NJ, ³Theodore Tutorials, East Williston, NY

TECHNICAL SESSIONS

3:00 PM

Understanding Deposition Pattern and Growth of Dendritic Structure on Fibers Using Lattice-Boltzmann Simulation

Paper#: 33353

H. Zhao, K. Wang, C. Zheng; State Key Laboratory of Coal Combustion, Huazhong University of Science and Technology, Wuhan City, Hubei, China

Resource Sustainability: Programs and Practices I

SUST/WAST-WedPM1

Room: CC 102C

6/25/2014 1:20 PM

Platform

TCC: SUS

Chair: Chih C. Chao, WRC International

Vice Chair: Flint Webb, Leidos

1:20 PM

Measuring, Managing and Improving Global Sustainability Metrics

Paper#: 32387

M. Corcoran¹, A. Davidson²; ¹PPG Industries, Allison Park, PA, ²Dakota Software Corp., Cleveland, OH

1:40 PM

Comparative Sustainability Analysis of Bioreactor Landfills: Aerobic Bioreactor Landfill vs. Anaerobic Bioreactor Landfill

Paper#: 33382

R. Broun¹, M. L. Sattler²; ¹University of Texas at Arlington, Arlington, TX, ²Civil Engineering, University of Texas at Arlington, Arlington, TX

2:00 PM

Promoting Sustainability Through Energy Management – A Case Study of an Iron Foundry

Paper#: 33529

R. Lis¹, K. Kwok²; ¹MWH Global, Inc., Chicago, IL, ²E2 ManageTech, Chicago, IL

2:20 PM

Economic Feasibility Analysis of a Municipal Food Waste Collection and Energy Generation Model

Paper#: 32568

M. Franchetti, A. Dellinger; The University of Toledo, Toledo, OH

2:40 PM

Sustaining Success by Actively Caring Together

Paper#: 33286

V. L. Young¹, P. A. Brush²; ¹Air Liquide Global E&C Solutions, Houston, TX, ²Air Liquide Global E&C Solutions, Bad Homburg v.d. Hohe, Germany

Risk Assessment Modeling Tools and Techniques – Part 2

H&EE-WedPM1

Room: CC 102B

6/25/2014 1:20 PM

Platform

TCC: RAM

Chair: Scott Weaver, ERM

Vice Chair: Heidi Rous, PCR Services Corp

1:20 PM

RiCHES Tool for Risk Assessment of Industrial Sectors in Abu Dhabi Emirate

Paper#: 33493

J. M. Lloyd¹, A. H. Mokhtari², S. Beaulieu¹, E. Money¹, M. B. Turner¹, S. Ak³, K. Gelle⁴, A. Al Muhairi⁴, K. Al Hajeri⁴, A. Al Qudah⁴; ¹RTI International, Research Triangle Park, NC, ²RTI International, Washington, DC, ³RTI International, Abu Dhabi, United Arab Emirates ⁴Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

1:40 PM

The Environment Agency-Abu Dhabi's Integrated, Sector-Based Environmental Management System

Paper#: 33515

K. E. Bronstein¹, J. Baskir¹, E. Money¹, J. M. Lloyd¹, S. Ak², A. Rady², A. Al Qudah³, F. Al Hammadi³, A. Al Hashmi³; ¹RTI International, Research Triangle Park, NC, ²RTI International, Abu Dhabi, United Arab Emirates, ³Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

2:00 PM

An Improved Method for Measuring and Characterizing Phthalate Emissions from Building Materials and Its Application to Exposure Assessment

Paper#: 33551

Y. Xu, Y. Liang; The University of Texas at Austin, Austin, TX

The Twin Challenge of Air Districts – Community & Education Outreach

LOCA-WedPM1

Room: CC 202A

6/25/2014 1:20 PM

Panel

TCC: LHC

Chair: Lisha Smith, South Coast Air Quality Management District

The business of air quality is highly scientific; we often speak in acronyms like AQMP, NAAQS, and PM or terminology from the periodic table. However, in order to improve air quality and to protect public health, as we are mandated to do, we need to translate these obscure terms and communicate the information in ways that are meaningful to the people we

TECHNICAL SESSIONS

serve, and will direct them to action. Air quality management districts throughout California are engaging in innovative community and education outreach programs ranging from incentive programs for local businesses to informational events for environmental justice communities to hands-on learning projects for our youth. How our agencies address the twin challenges—community and education outreach—will have a strong impact on how Californians view their level of involvement in environmental sustainability and air quality issues.

Panelists:

- *Lisa Tanaka O'Malley, South Coast AQMD*
- *Sam Atwood, South Coast AQMD*
- *Violette Roberts, Mojave Desert AQMD*
- *Lisha Smith, South Coast AQMD*
- *Lisa Fasano, Bay Area AQMD*

Transportation Land-Use and Exposure

TRAN/H&EE-WedPM1

Room: CC 203A

6/25/2014 1:20 PM

Platform

TCC: OMS/RAM

Chair: Helen Ginzburg, Parsons Brinckerhoff

Vice Chair: Heidi Rous, PCR Services Corp

1:20 PM

Regional Long Range Transportation Plan Air Quality and Exposure Analysis Using AERMOD

Paper#: 33602

G. Rowangould; Department of Civil Engineering, University of New Mexico, Albuquerque, NM

1:40 PM

Using Activity Based Travel Data to Quantify Emissions-to-Population Exposure Relationship from Transportation Sources

Paper#: 33575

S. Vallamsundar, J. Lin; Department of Civil and Materials Engineering, Chicago, IL

2:00 PM

Integration of Traffic MOVES CAL3QHCR and Health Risk Analyses

Paper#: 32266

X. Liu¹, A. Lovegrove², E. Tadross²; ¹Parsons Brinckerhoff, New York, NY, ²Parsons Brinckerhoff Inc., New York, NY

2:20 PM

Methods for Assessing Human Exposures to Traffic Emissions in Impact Assessments for New Projects

Paper#: 33158

S. J. Quiring¹, P. Kok²; ¹ERM, Seattle, WA, ²ERM, Houston, TX

2:40 PM

Reducing Exposure to Traffic Emissions in British Columbia's Lower Fraser Valley

Paper#: 33646

D. Bates-Frymel; Metro Vancouver, Burnaby, BC

3:00 PM

The Role of Health Impact Assessment in Influencing Transportation Infrastructure Design: Where Do We Start?

Paper#: 32494

M. M. Lobnitz; Pika Environmental, LLC, Sherman Oaks, CA

VOC Control Technologies and Strategies II

INDU-WedPM1

Room: CC 102A

6/25/2014 1:20 PM

Platform

TCC: AAC

Chair: Rakesh Govind, University of Cincinnati

1:20 PM

Effect of Surface Oxygen Groups on the Irreversible Adsorption of Organic Vapors

Paper#: 33534

M. Jahandar Lashaki¹, J. D. Atkinson², Z. Hashisho¹, J. H. Philips³, J. E. Anderson⁴, M. Nichols⁴; ¹Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ²University of Alberta, Edmonton, AB, ³Ford Motor Company, Environmental Quality Office, Dearborn, MI, ⁴Ford Motor Company, Research and Advanced Engineering, Dearborn, MI

1:40 PM

Effect of Microwave Heating on Regeneration of Beaded Activated Carbon and a Polymeric Adsorbent

Paper#: 33589

M. Fayaz¹, P. Shariaty¹, Z. Hashisho¹, J. H. Philips², J. E. Anderson³, M. Nichols³, J. D. Atkinson⁴; ¹Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ²Ford Motor Company, Environmental Quality Office, Dearborn, MI, ³Ford Motor Company, Research and Advanced Engineering, Dearborn, MI, ⁴Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB

2:00 PM

Effect of Pore Size Distribution of Activated Carbon Fiber Cloth on Irreversible Adsorption of a Volatile Organic Vapor

Paper#: 33597

S. Niknaddaf¹, M. Jahandar Lashaki¹, P. Shariaty¹, Z. Hashisho¹, J. H. Philips², J. E. Anderson³, M. Nichols³, J. D. Atkinson⁴; ¹Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ²Environmental Quality Office, Ford Motor Company, Dearborn, MI, ³Research and Advanced Engineering, Ford Motor Company, Dearborn, MI, ⁴University of Alberta, Edmonton, AB

TECHNICAL SESSIONS

2:20 PM

Modeling of Multi-component Volatile Organic Compounds Adsorption in a Fixed-bed Reactor

Paper#: 33472

D. T. Tefera¹, Z. Hashisho¹, J. H. Philips², J. E. Anderson³, M. Nichols⁵; ¹Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ²Environmental Quality Office, Ford Motor Company, Dearborn, MI, ³Ford Motor Company, Research and Advanced Engineering, Dearborn, MI

Waste Characterization, Treatment and Beneficial Use II

WAST/SUST-WedPM1

Room: CC 103C

6/25/2014 1:20 PM

Platform

TCC: WMR

Chair: Radha Krishnan, The Shaw Group, Inc.

Vice Chair: Gary Elliott, Lafarge North America

1:20 PM

Restructuring of Waste Polystyrene as Ion Exchange Filters for Heavy Metal Removal

Paper#: 33015

C. Ho¹, C. Yang², I. Uluturk³; ¹Dahan Institute of Technology, Hualien, Taiwan, ²Advanced Technology and Manufacture Research Center, University of Massachusetts Dartmouth, Fall River, MA, ³Department of Bioengineering, University of Massachusetts Dartmouth, North Dartmouth, MA

1:40 PM

Accreditation and Credential Management Practices for Hazardous Materials/Dangerous Goods Professionals

Paper#: 32071

J. H. Greenwald; Professional Engineer in Virginia, Certified Association Executive, Rockville, VA

2:00 PM

Identification of Aroclors in Environmental Samples by Pattern Matching

Paper#: 33178

R. Bramston-Cook¹, E. Bramston-Cook¹, M. Scesny²; ¹Lotus Consulting, Long Beach, CA, ²M Solutions, Terrell, TX

AIR QUALITY MODELING AND CHEMISTRY

Comparative Analysis of SCAQMD and ASOS Meteorological Sites in Southern California Using AERMOD

Paper#: 33175

J. Baker, S. Lee; South Coast Air Quality Management District, Diamond Bar, CA

Constructing AERMOD-Ready Meteorological Input Using Climatological WRF Output and Its Impact on Regulatory AERMOD Applications

Paper#: 33494

S. Lee, J. Baker; South Coast Air Quality Management District, Diamond Bar, CA

Estimating Air Pollution Retention Across Different Spatial Scales

Paper#: 33519

B. Young¹, J. Richmond-Bryant²; ¹Oak Ridge Institute for Science and Education, Research Triangle Park, NC, ²EPA, Research Triangle Park, NC

Impact of Mobile Source Emissions on Air Quality of East-Texas Using Emission Processing System (EPS3) and CAMx Simulations

Paper#: 33571

S. Sarker¹, Z. Liang², X. Shen³, Z. Huque³, R. R. Kommalapati³; ¹Department of Civil and Environmental Engineering, Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ²Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ³Prairie View A&M University, Prairie View, TX

AMBIENT MONITORING/MEASUREMENTS

A Gridding Algorithm to Improve Satellite Data on a Regional Model Grid

Paper#: 33373

Y. Lam¹, G. Kuhlmann²; ¹City University of Hong Kong, Kowloon Tong, Hong Kong, ²City University of Hong Kong, Hong Kong

Development, Validation, and Initial Application of a Thermal Optical Carbon Analyzer-Quadrupole Mass Spectrometer for Quantitative Determination of Aerosol

Paper #12345

G. Riggio, M. Johnson, X. Yang, L.-W. Chen, X. Wang, J. Chow, J. Watson, R.L.N. Yatavelli; Desert Research Institute, Reno, NV

Filter- and Denuder-Based Organic Carbon Correction for Positive Sampling Artifacts

Paper#: 32506

I. Hwang¹, K. Na²; ¹Daegu University, Gyeongbuk, South Korea, ²California Air Resources Board, El Monte, CA

Measurements of Black Carbon Mass Size Distributions Using A Size-segregated Method at a Traffic Site in Taipei Urban Area

Paper#: 33350

C. Liao¹, Y. Cheng²; ¹Department of Safety, Health and Environmental Engineering, Ming Chi University of Technology, New Taipei City, Taipei, Taiwan, ²Department of Safety, Health and Environmental Engineering, Ming Chi University of Technology, New Taipei City, Taipei, Taiwan

Source Apportionment of Volatile Organic Compounds Measured in Downtown Calgary, Alberta

Paper#: 33133

Y. Aklilu¹, R. A. Ladha², D. Lyder³; ¹Alberta Environment and Sustainable Resource Development, Edmonton, AB, ²Government of Alberta, Edmonton, AB, ³Government of Alberta, Edmonton, AB

The Hourly Variation of Ambient Bioaerosol Concentrations in Hsinchu City in Taiwan

Paper#: 33245

H. Hung, C. Chang, Y. Yang, M. Lin; Yuanpei University, Hsinchu, Taiwan

BIOENERGY AND WASTE-TO-ENERGY

Biodiesel Properties for Different Blends and Feedstock: Cloud Point, Kinematic Viscosity and Flash Point

Paper#: 33261

S. Kuppili¹, A. Kumar², D. Kim³; ¹University Of Toledo, Toledo, OH, ²The University of Toledo, Toledo, Ohio, Toledo, OH, ³University of Toledo, Toledo, OH

Determination of Gas-Liquid Partition Coefficients of Volatile Methyl Siloxanes by Vapor Phase Calibration Method

Paper#: 33070

D. Kim¹, W. Kang², S. Lee²; ¹Department of Environmental Engineering, Seoul National University of Science & Technology, Seoul, South Korea, ²Seoul National University of Science and Technology, Seoul, South Korea

Recycling of Alkaline Solution for Producing Bioenergy from Rice Husk Waste

Paper#: 33126

C. Tsai¹, W. Zeng², H. Bai³; ¹Institute of Environmental Engineering, National Chiao Tung University, Hsinchu City, Taiwan ²Institute of Environmental Engineering, National Chiao Tung University, Hsinchu, Taiwan, ³Institute of Environmental Engineering, National Chiao Tung University, Hsinchu City, Taiwan

CLIMATE CHANGE IMPACTS AND REGULATION

Mandatory and Voluntary GHG Reporting Programs and Lessons Learned

Paper#: 33359

Y. Sultana, K. Madry; ERM, Bakersfield, CA

EMISSIONS MEASUREMENTS, MODELING, AND CONTROL

Characterization of Dustfall in the Neighbourhoods of Ilha Do Boi, Vila Velha, and Cidade Continental Which Are Part of the Greater Vitoria Area - Brazil

Paper#: 33468

L. D. Abreu¹, J. G. da Costa¹, G. C. Abreu¹, T. Morimoto²; ¹ArcelorMittal Tubarão, Espírito Santo, Brazil, ²Aquamontana, Serra, Espírito Santo, Brazil

Characterization of Volatile Organic Pollutant

Emissions from Smoldering Mosquito Coils

Paper#: 33218

T. Yang, C. Tseng; Department of Environmental Engineering and Health, Yuanpei University, Hsinchu, Taiwan

Evaluations of Enhanced Removal of Stripped Trihalomethanes by Biotrickling Filter

Paper#: 33500

B. Mezgebe¹, G. Sorial, PhD², A. Aly Hassan, PhD³, E. Sahle-Demessie, PhD⁴; ¹University of Cincinnati, Cincinnati, OH, ²University of Cincinnati, Cincinnati, OH, ³University of Cincinnati, Cincinnati, OH, ⁴EPA, Cincinnati, OH

Evaluation of the Environmental Permitting System at the Environment Agency – Abu Dhabi

Paper#: 33538

A. Sajwani¹, A. Rady¹, M. Al Ashram¹, F. Al Hammad², A. Al Waheeb², I. Al Ali², A. Al Hashemi²; ¹RTI International, Abu Dhabi, United Arab Emirates, ²Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

Experimental Evaluation of Biodiesel Combustion Using a Laboratory Reactor

Paper#: 31867

H. Omidvarborna, A. Kumar, D. Kim; University of Toledo, Toledo, OH

Study on VOCs Removal with TPF and TPNF Prepared by Electrospinning

Paper#: 33427

Y. Chuang¹, C. Chang², C. Ma³; ¹National Ilan University, Yilan, Taiwan, ²National Ilan University, Ilan, Taiwan, ³St. Mary's Medicine Nursing and Management College, Sanhsing, Taiwan

Tentative, Subject to Departmental Approval: Source Elimination of Mercury-containing Materials -Purchasing Program Implementation to Improve Wastewater Quality

Paper#: 33506

D. Fitzsimmons¹, T. Smith², J. OConnell¹; ¹Sage Environmental Consulting, ²Sage Environmental Consulting, Chicago, IL

Utilizing Dual-Template Surfactant to Synthesize Mesoporous Silica for Enhancing CO₂ Capture

Paper#: 32369

Y. Lin¹, Y. Huang², L. Lin², H. Bai²; ¹Department of Environmental Engineering and Health, Yuanpei University, Hsinchu, Taiwan, ²Institute of Environmental Engineering, National Chiao Tung University, Hsinchu, Taiwan

HEALTH AND ECOLOGICAL EFFECTS

Benzene Exposure Estimated by Urinary T,T MA for Motorcycle Mechanics

Paper#: 33226

Y. Hsieh, T. Lin, C. Yang; Department of Safety, Health and Environmental Engineering, National United University, Miaoli, Taiwan

Chemical Spill Model Applied to a River with a Dam

Paper#: 31729

D. McCready, J. Williams; The Dow Chemical Company, South Charleston, WV

Oxidative Stress Estimated by Urinary 8-OHdG for Workers Exposed to Low Level Benzene

Paper#: 33398

C. Yang, Y. Hsieh, T. Lin; Department of Safety, Health and Environmental Engineering, National United University, Miaoli, Taiwan

Potential DNA Damage Caused by Caprolactam

Paper#: 33182

T. Chan¹, T. Lin¹, P. Lin²; ¹Department of Safety, Health and Environmental Engineering, National United University, Miaoli, Taiwan, ²Department of Safety, Health and Environmental Engineering, National United University, Miaoli, Taiwan

Seasonal Distribution Characteristics of Odorous Compounds Concentration According to the Pigsty Type of Korea

Paper#: 33005

K. Kim¹, D. Kim²; ¹Department of Industrial Health, Catholic University of Pusan, Busan, South Korea, ²Department of Environmental Engineering, Seoul National University of Science & Technology, Seoul, South Korea

TRANSPORTATION EMISSIONS AND IMPACTS

GREET Model Simulations of Criteria Air Pollutant Emissions from Hybrid Electric Vehicles Using Alternative Fuels

Paper#: 32467

Z. Liang¹, S. Sheikh², Z. Huque², R. R. Kommalapati²; ¹Center for Energy & Environmental Sustainability, Prairie View A&M University, Prairie View, TX, ²Prairie View A&M University, Prairie View, TX

WASTE TREATMENT

Effects of Alkaline-thermal Pre-treatment on Sludge Dewaterability and Drying Performance

Paper#: 31714

Y. Li, Y. Jin, Y. Zhou; Tsinghua University, Beijing, China

The Effect of Soil Organic Matter and the Presence of Soil on Black Carbon-mediated Reduction of Nitroaromatics in Subsurface Environment

Paper#: 33214

S. Oh, Y. Seo, H. Yoon; University of Ulsan, Ulsan, South Korea

Sterilization of Microbial Vegetative Cells and Spores by Cold Plasma and Ozone

Paper#: 33345

H. Hung, C. Chang, B. Ni, M. Lin; Yuanpei University, Hsinchu, Taiwan

TECHNICAL SESSIONS

Thursday, June 26, 2014				
Industry Focus	Session ID	Session Title	TCC(s)	Session Format
Starting at 9:00 am				
	POWR-ThurAM1	Advancements in the Natural Gas Fired Combustion Turbine Systems to Meet the Emerging Environmental Challenges	AAC	Panel
	YOUN/EDUC-ThurAM1	Air Pollution Control 101A – Acid Gases, Nitrogen Oxides, and Volatile Organic Compounds	AAC	Panel
	CLIM-ThurAM1	Climate Change Impacts	CCI	Platform
	REGU-ThurAM1	EPA Regulatory Update	REG/PUB	Platform
	MINI-ThurAM1	Mini-Symposium Panel: Goods Movement and Ports: Balancing Environment, Economics and Policy	PLU	Panel
	REGU-ThurAM1	Greenhouse Gas Permitting	CCP/REG	Panel
	H&EE-ThurAM1	Odor Issues and Solutions	ODR	Platform
	AIRS-ThurAM1	PM Measurements and Controls II	AAC	Platform
	REGU-ThurAM1	Problems with Air Permit Conditions	REG	Panel
	SUST-ThurAM1	Resource Sustainability: Programs and Practices II	SUS	Platform
	AIRS-ThurAM1	Short Term Modeling Issues and Guidance	APM	Platform
	ENER/WAST-ThurAM1	Solid Waste Conversion Technologies: Waste to Electricity and Fuel	WMB	Panel
9:40 am- 10:10 am				
10:10 am- 11:50 am				
	CLIM-ThurAM2	Addressing Climate Change: The Intersection of Science, Government & Industry	CCP	Panel
	YOUN/EDUC-ThurAM2	Air Pollution Control 101 B: Particulate and Mercury Control	AAC	Panel
	ENER/WAST-ThurAM2	Biogas: Generation, Collection, and Utilization: Anaerobic Digestion Case Studies	WMB	Panel
	AIRS-ThurAM2	Carbonaceous Particulate Matter	APP	Platform
	REGU-ThurAM2	Clean Air Act Enforcement – New Source Review, Other Priorities, and Current Issues	REG	Panel
	AIRS-ThurAM2	Emissions Monitoring	AAE	Platform
	AIRS-ThurAM2	Emissions Surveys: Ammonia	AAE	Platform
	AIRS/REGU-ThurAM2	Guideline on Air Quality Models – A Continuing Dialogue on the Path Forward	APM	Panel
	MINI-ThurAM2	Mini-Symposium Panel: Los Angeles International Airport Air Quality and Source Apportionment Study	OMS	Panel
	NANO/REGU-ThurAM2	Nanotechnology Safety and Regulation	NAN	Panel
	REGU-ThurAM2	Regulatory and Program Updates from the Pacific Coast	REG	Platform
	TRAN-ThurAM2	Toward Sustainable Transportation	PLU	Platform
2:00 pm- 3:40 pm				
	MINI/H&EE-ThurPM1	Mini-Symposium Panel: Health and Community Impacts Related to Air Pollution from Ports, International Trade Activities	PLU	Panel
	H&EE-ThurPM1	Health Effects of Inhaled Contaminants in Indoor and Outdoor Environments	HEE	Platform
	O&GS/INDU-ThurPM1	International Environmental Issues in the Chemical & Refining Industries	CHP	Platform
	TRAN-ThurPM1	Latest Findings in Vehicle Emissions Modeling and Measurement (Part 1)	OMS	Platform
	POWR-ThurPM1	Mercury Control Technologies and Strategies I	AAC	Platform
	AIRS-ThurPM1	Modeling Studies and Results	APM	Platform
	INDU-ThurPM1	NOx Control Technologies and Strategies I	AAC	Platform
	CLIM-ThurPM1	Building Engagement Efforts to Connect NASA and NOAA's Climate and Environmental Data and Satellite Measurements to Decision-Makers	CCP	Panel
	NANO/H&EE-ThurPM1	Prevention Through Design (PtD) Aspects of Nanomaterials	NAN	Panel
	H&EE/WAST-ThurPM1	Recent Experience / Remediation Sites	RAM	Platform
	CLIM-ThurPM1	Regional Approaches to Comprehensive Climate Action Planning	CCP	Panel
	ENER/WAST-ThurPM1	Waste-to-Energy Topics and Landfill Gas Issues	WMB	Platform
3:40 pm- 4:00 pm				
4:00 pm- 5:40 pm				
	AIRS/REGU-ThurPM2	AERMOD Modeling Issues	APM	Platform
	AIRS-ThurPM2	Atmospheric Chemistry, Part 2	APC	Platform
	CLIM-ThurPM2	Climate Change Adaptation Strategies	CCI	Platform
	O&GS/AIRS-ThurPM2	Emissions and Impacts from Oil and Gas Exploration and Production	AAE	Platform
	TRAN-ThurPM2	Latest Findings in Vehicle Emissions Modeling and Measurement (Part 2)	OMS	Platform
	NANO/INDU-ThurPM2	Managing Corporate Liability in Nanoscale Manufacturing	NAN	Panel
	POWR-ThurPM2	Mercury Control Technologies and Strategies II	AAC	Platform
	INDU/O&GS-ThurPM2	NOx Control Technologies and Strategies II	AAC	Platform
	REGU-ThurPM2	Recent Developments in Implementing BACT	REG	Panel
	MINI-ThurPM2	Mini-Symposium Panel: Review of Mini-Symposium Sessions – Impacts of Transportation Hubs & Ports	PLU	Panel
	AIRS-ThurPM2	Topics in Visibility Monitoring	APV	Platform
	WAST/ENER-ThurPM2	Waste Digestion and Composting	WMB	Platform

TECHNICAL SESSIONS

Program Key			Program Key		
Track ID	Industry/Environmental Focus		Track ID	Industry/Environmental Focus	
 AIRS	Air-Measurements and Basic Science		 SUST	Sustainability	
 EDUC	Education		 TRAN	Transportation	
 ENER	Renewable Energy		 WAST	Waste Management	
 FEDS	Federal		 LOCA	Local Topic	
 H&EE	Health & Environmental Effects		 YOUN	Young Professionals	
 INDU	Heavy Industry and General Manufacturing		 POWR	Power Generation	
 MINI	Mini-Symposium on Transportation Hubs & Ports		 NANO	Nanoparticles	
 O&GS	Oil & Gas		 CLIM	Climate Change	
 REGU	Regulatory				

TECHNICAL SESSIONS

Thursday, June 26, 2014

Advancements in the Natural Gas Fired Combustion Turbine Systems to meet the Emerging Environmental Challenges

POWR-ThurAM1

Room: CC 102A

6/26/2014 8:00 AM

Panel

TCC: AAC

Chair: Krishna Nand, Environmental Management Professionals, LLC

Vice Chair: Stephen O'Kane, Levelton Consultants Ltd

In the last five years there have been significant changes in the environmental regulations and additional changes are expected in the coming years. Some of these regulations relate to: (1) establishment of 1-hr NO₂ ambient air quality standard and associated 1-hr average Significant Impact Level analysis for sources subject to the Prevention of Significant Deterioration Analysis, (2) greenhouse gas emission standards, (3) PM_{2.5} emission offsets for major sources in non-attainment areas, (4) emission offset requirements for criteria pollutants in non-attainment areas, and (5) plume visibility analysis requirements in Class II areas. The proposed new natural gas fired power plants as well as the plants proposed for modification will be required to meet the emerging environmental challenges during the air permitting process. Many of these power plants will also be required to integrate with the intermittent renewable power resources. In addition, NO₂/NO_x ratios, specific to the proposed power generating system will be required for NO₂ dispersion modeling analysis when using the OLM or PVMRM option in the AERMOD dispersion model. Power generation equipment manufacturers have made significant advances in the design of the combustion turbines and associated equipment to meet the current and anticipated environmental challenges, which include significant reduction in the startup time and emissions, high efficiency and lower pollutant emitting combustion turbines, and fast response of the power generating system to load changes. Advancement in the design of power generation equipment is a continuous process and new developments are announced by the power generation equipment vendors regularly. In this panel, existing as well as the upcoming critical environmental regulations affecting the power generation industry will be discussed. This will be followed by discussions on advancements in the natural gas fired power generating systems to meet the existing and emerging environmental challenges. Data sets for NO₂/NO_x ratios developed by various power generation equipment manufacturers will also be presented and discussed.

Panelists:

- Krishna Nand, Environmental Management Professionals, LLC
- Amol Mody, GE Power & Water
- Andrew Dicke, GE Power & Water
- Jordan Haywood, Siemens
- Mark Sedlacek, Los Angeles Department of Water & Power
- Mohsen Nazemi, South Coast Air Quality Management District
- Stephen O'Kane, AES Southland

Air Pollution Control 101A: Acid Gases, Nitrogen Oxides, and Volatile Organic Compounds

YOUN/EDUC-ThurAM1

Room: CC 203C

6/26/2014 8:00 AM

Panel

TCC: ACC

Chair: Minh Pham, South Coast Air Quality Management District

Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) establishes national ambient air quality standards (NAAQS) for six common air pollutants including carbon monoxide (CO), ground level ozone (O₃), lead, nitrogen oxides (NO_x), sulfur dioxide (SO₂), and particulate matter (PM, PM₁₀ and PM_{2.5}) to protect public health and the environment. In parallel with this effort, the EPA, states, and local air pollution agencies have developed and set increasingly stringent emission standards to reduce the emissions of primary air pollutants NO_x, SO_x, PM, PM₁₀, PM_{2.5}, as well as volatile organic compound (VOC), a precursor of ozone, and other types of acid gases from numerous types of industrial, commercial and residential sources. The industries are asked to install and operate myriad of air pollution control devices (APCD), air pollution control methods and tactics to reduce harmful air pollutants and achieve cleaner air. As a result, the air quality in the U.S. has improved significantly since 1980. The emissions have dropped more than 50% between 1980 and 2011 despite the increase in gross domestic products, vehicle miles traveled and the U.S. population. In this section, the panel will discuss the emission sources of acid gases, NO_x, and VOC, the regulatory requirements, the fundamentals of control technologies of acid gases, NO_x, and VOC including but not limited to thermal and catalytic oxidizers, fuel gas treatment, flue gas desulfurization, wet and dry gas scrubbers, selective catalytic reduction, non selective catalytic reduction, and selective non catalytic reduction. Examples of the real world performance levels and issues at the refineries, power plants, chemical and industrial plants will be discussed. Useful guidance on how to conduct a research for control technologies and performance standards and navigate through a complex channel of regulatory requirements will be provided. This section will serve well as an introduction course or a refresher course for environmental professionals at all levels.

Panelists:

- Minh Pham, South Coast Air Quality Management District
- Arijit Pakrasi, Environmental Resource Management
- Rod Gravley, Tri-Mer Corporation
- Tom Turner, Turner EnviroLogic

TECHNICAL SESSIONS

Climate Change Impacts

CLIM-ThurAM1

Room: CC 202A

6/26/2014 8:00 AM

Platform

TCC: CCI

Chair: Flint Webb, Leidos

Vice Chair: Joshua Fu, University of Tennessee, Knoxville

8:00 AM

Study of Regional Extreme Climate and Its Impact on Air Quality and Health in US

Paper#: 33248

J. Fu¹, Y. Gao², J. Drake¹, Y. Zhou³, Y. Liu³; ¹University of Tennessee, Knoxville, TN, ²Pacific Northwest National Laboratory, Richland, WA, ³Emory University, Atlanta, GA

8:20 AM

Incorporating Climate Change Impacts into Environmental Assessments

Paper#: 33455

S. Capstick, J. Kelly, A. Barrett; Golder Associates Ltd., Mississauga, ON

8:40 AM

Soil Carbon Sequestration from Repeated Biosolids Application

Paper#: 33480

W. Zhai, D. Moschandreas, K. Noll; Civil, Architecture and Environmental Engineering, Illinois Institute of Technology, Chicago, IL

9:00 AM

Black Carbon from Anthropogenic Combustion Sources

Paper#: 33437

K. Johnson; CE-CERT, University of California, Riverside, Riverside, CA

EPA Regulatory Update

REGU-ThurAM1

Room: CC 103B

6/26/2014 8:00 AM

Platform

TCC: REG

Chair: Ryan Gesser, ERM

Vice Chair: Lee Hoffman, Pullman & Comley, LLC

8:00 AM

Lessons Learned from the Voluntary Disclosure of Clean Air Act Noncompliance Through the EPA Audit Policy

Paper#: 33549

C. B. Ng¹, A. Johnston¹, S. Thedinger², S. Reisch²; ¹ENVIRON International Corporation, Arlington, VA, ²Hogan Lovells US LLP, Denver, CO

8:20 AM

To Use, or Not to Use: Backsliding on Coal-fired SCR Operations

Paper#: 30655

T. McNevin; New Jersey Department of Environmental Protection, Division of Air Quality, Trenton, NJ

8:40 AM

Why the Evolution of the Power Market Will Require Changes in How Gas Turbine Generation Is Regulated Under the Clean Air Act

Paper#: 33216

M. S. Weaver¹, K. Fickerson²; ¹ERM, Pasadena, CA, ²ERM, Carpinteria, CA

9:00 AM

Non-Hazardous Secondary Material Regulation Updates: Overview of Rule and EPA Findings

Paper#: 33546

D. Zernickow; Trinity Consultants, Oakland, CA

9:20 AM

Providing Representative Meteorological Data to AERMOD for the Liberty Borough Sulfur Dioxide One-hour National Ambient Air Quality Standard State Implementation Plan

Paper#: 31804

A. J. Sadar¹, D. McNally², J. Maranche¹; ¹Allegheny County Health Department, Pittsburgh, PA, ²Alpine Geophysics, LLC, Arvada, CO

Greenhouse Gas Permitting

REGU-ThurAM1

Room: CC 203A

6/26/2014 8:00 AM

Panel

TCC: CCP/REG

Chair: Peter Keller, RTP Environmental Associates, Inc.

Vice Chair: Raj Rao, EPA

This panel will address the implementation of GHG permitting requirements, including Prevention of Significant Deterioration (PSD) and Major Source Operating Permit (Title V) requirements for Greenhouse Gas (GHG) emissions. The panel will discuss recent regulatory, legal and technical developments related to the GHG permitting programs. PSD and Title V requirements for Greenhouse Gas (GHG) emissions have been in place for nearly 4 years and through 3 "steps" of the EPA GHG Tailoring Rule phase-in. There have been a number of legal, regulatory and policy developments in recent months and the body of issued permits with associated state, EPA and environmental group comments and challenges continues to grow. This panel will explore these topics, including the following: GHG Tailoring Rule – current status and path forward; EPA GHG permitting streamlining efforts; Status of Federal Implementation Plans (FIPs) and State Implementation Plans (SIPs) with

TECHNICAL SESSIONS

respect to GHG permitting; status of Biogenic CO₂ Deferral Rule (Court Vactatur and path forward); Update on legal challenges to GHG permitting programs; Important themes in EPA and environmental group GHG permit comment letters; GHG Best Available Control Technology (BACT), including the availability and technical feasibility of carbon capture and sequestration (CCS) for industrial sources and impact of Electric Utility New Source Performance Standards (NSPS) for GHGs; GHG BACT cost-effectiveness thresholds – practical experience, environmental group comments, EPA “Social Cost of Carbon;” GHG BACT requirements for carbon capture and off site disposition (e.g., enhanced oil recovery (EOR), third party commercial sale; Monitoring approaches for GHG BACT conditions; GHG fugitive emissions accounting for applicability purposes; non-Clean Air Act (CAA) statutory requirements for EPA and delegated state-issued PSD permits, e.g., Endangered Species Act (ESA); Interrelationship of California GHG cap and trade program (AB 32) to permitting programs; Industry-specific issues, e.g., underground coal mines, oil and gas, petroleum refineries; and Title V program GHG permitting updates and experiences.

Panelists:

- Peter Keller, RTP Environmental Associates, Inc.
- Raj Rao, EPA
- Mohsen Nazemi, AQMD

Mini-Symposium Panel: Goods Movement and Ports: Balancing Environment, Economies and Policy

MINI-ThurAM1
Room: CC 101A

6/26/2014 8:00 AM

Panel
TCC: PLU

Chair: Damian Breen, Bay Area Air Quality Management District
Vice Chair: Matt Miyasato, South Coast Air Quality Management District

The combined Ports of LA and Long Beach and the Port of Oakland represent the largest and fifth largest container ports in the United States respectively. These “gateways to California” provide main routes for goods movement into and out of America’s most populous state – a staggering 13 million twenty foot equivalent unit (TEU) containers annually. While these ports provide a huge economic benefit for the state, the diesel equipment used to power them has also resulted in some of the highest health risk from air pollution in the communities that surround them. In April 2006, the California Air Resources Board released its “Emissions Reductions Plan for Ports and Goods Movement in California,” targeting an 85% reduction in diesel particulate matter health risk statewide by the year 2020. That plan’s implementation has necessitated significant

policy, regulatory, outreach and education, monitoring, compliance and incentives efforts by California’s ports, the goods movement industry, local air districts and governments. It has also required an extensive partnership with nongovernmental and community-based organizations. As part of this panel, co-chairs from the Bay Area and South Coast Air Quality Management Districts will lead a discussion that provides a view from the “front-lines” on how the effort to reduce emissions at Ports is progressing. Hear opinions from the Ports of Oakland, Los Angeles and Long Beach, goods movement industry representatives and community based groups, on:

- Current and historical port emissions
- Successful emissions reduction strategies, policies and initiatives
- The costs of compliance and how compliance affected the goods movement industry
- Impacted community’s perspectives on efforts to clean up the goods movement industry
- Challenges facing the goods movement industry and how can those challenges be balanced with the need to for to reduce emissions in the future

Panelists:

- Damian Breen, Bay Area Air Quality Management District
- Matt Miyasato, South Coast Air Quality Management District
- T.L. Garrett, Pacific Maritime Shipping Association
- Christopher Cannon, Port of Los Angeles
- Rick Cameron, Port of Long Beach

Odor Issues and Solutions

H&EE-ThurAM1
Room: CC 103C

6/26/2014 8:00 AM

Platform
TCC: ODR

Chair: Steven Trabue, USDA-Agriculture Research Service
Vice Chair: Raymond Porter, Porter Odor Science

8:00 AM

Static Verses Dynamic Odor Modeling

Paper#: 33523

R. C. Porter; Porter Odor Science, Reading, MA

8:20 AM

Speciation of Volatile Organic Compounds Sorbed to pm from Animal Feeding Operations

Paper#: 33461

S. Trabue¹, K. Scoggin¹, R. Maghirang², R. Peiffer¹; ¹USDA-Agriculture Research Service, Ames, IA, ²Kansas State University, Manhattan, KS

8:40 AM

Horizontal Flow Bioreactor for Odor and VOC Control

Paper#: 32070

H. Husain; Biorem Technologies, Inc, Guelph, ON

TECHNICAL SESSIONS

9:00 AM

Quantifying Industrial Waste Odor Exposure with Two Practical Approaches: Odor Plume Measurement Using Trained Field Human Assessors, and Dispersion Modelling Using AERMOD and CALPUFF

Paper#: 31973

Z. Gao¹, H. Guo², D. Huang³, A. Ghuman¹; ¹Environmental Engineering, University of Saskatchewan, Saskatoon, SK, ²Mechanical Engineering, University of Saskatchewan, Saskatoon, SK, ³Chemical & Biological Engineering, University of Saskatchewan, Saskatoon, SK

PM Measurements & Controls II

ThAIRS-ThurAM1

Room: CC 101B

6/26/2014 8:00 AM

Platform

TCC: AAC

Chair: Hardik Shah, Southern Environmental, Inc.

8:00 AM

ASTM D7036 Offers Source Testing Firms a Structured Approach to Quality Management

Paper#: 32855

D. L. Elam; TRC, Chapel Hill, NC

8:20 AM

Standoff Particle Sizing for Particulate Emission Assessment and Studies: A Non-intrusive Approach to Particle Sizing

Paper#: 33540

D. Cantin, O. Pancrati, F. Châteauneuf, B. Debaque; INO, Quebec, QC

8:40 AM

Characterizing Particulate Matter Pollution over a High Altitude City on the Tropical Andes Using Sun Photometry and PM₁₀ Composition Analysis

Paper#: 33662

R. Jimenez¹, L. Hernandez-Gonzalez², J. Schauer³, O. Torres⁴, B. Holben⁴; ¹Air Quality Research Group, Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogotá, DC, Cundinamarca, Colombia, ²Universidad Nacional de Colombia, Bogotá, DC, Cundinamarca, Colombia, ³University of Wisconsin, Madison, WI, ⁴NASA Goddard Space Flight Center, Greenbelt, MD

9:00 AM

Limitations, Uncertainties and Optimization of Measurement Methods for PM, PM₁₀ and PM_{2.5} Emissions from Stationary Sources

Paper#: 33498

K. J. Crosby; Montrose Environmental Group, Inc., Antioch, CA

9:20 AM

Field Test Results for Continuous Beta Gauge Under High Dew Point Conditions

Paper#: 33355

D. A. Gobeli¹, S. Hong², T. Pottberg³; ¹Met One Instruments, Inc., Grants Pass, OR, ²Met One Instruments, Grants Pass, OR, ³Met One Instruments, Grants Pass, OR

Problems with Air Permit Conditions

REGU-ThurAM1

Room: CC 102B

6/26/2014 8:00 AM

Panel

TCC: REG

Chair: Paul Siebert, Weston Solutions, Inc.

Air pollution emission sources are generally required to obtain air quality construction and operating permits from the state or local environmental protection agency, or directly from the U.S. Environmental Protection Agency (EPA) if the local agency has not received delegated authority from EPA for various applicable air quality regulations. On occasion, certain air permit conditions may be quite onerous, unachievable in practice, unnecessarily costly, or have little, if any environmental benefit. Generally, the issuing agency will provide an opportunity for a facility to review and comment on draft permit conditions. Taking advantage of that opportunity is, therefore, essential to ensure the best permit that can be obtained. Nevertheless, the agency may refuse to change or to sufficiently change a problem permit condition so that it is effective and practical. This panel will discuss the types of permit conditions that are prone to problems, as well examples of problem permit conditions. Particular permit conditions that may present problems are inflexible conditions that do not provide for real world variations; emission limitations that cannot be routinely or consistently achieved in practice; monitoring, recordkeeping, and reporting conditions that require excessive effort with minimal environmental impact; and stack testing requirements that are of questionable value or necessity, yet are quite costly. These and other problem permit conditions may take substantial and excessive resources to accomplish, yet produce little, if any, real environmental benefit. Proposed alternative conditions and other remedies for problem permit conditions will also be presented and discussed. Although modification of permit conditions is within the exclusive purview of the permitting agency; however, the facility can often suggest alternative conditions suggested by its practical experience and intimate familiarity with the production processes and the air pollution control equipment. Regrettably permitting agency personnel may have little familiarity with a plant environment or its environmental staff's duties or the difficulty and cost of complying with some permit conditions. Therefore, facility personnel should strive to explain the difficulties and costs inherent in the problem permit conditions. In this way,

TECHNICAL SESSIONS

conditions may be able to be changed when they are in draft or “final” form.

Panelists:

- *Paul Siebert, Weston Solutions, Inc.*
- *Gary McCutchen, RTP Environmental Associates, Inc.*
- *Tiffany Dillow, Dixon Environmental*
- *Timothy Titus, The Boeing Company*

Resource Sustainability: Programs and Practices II

SUST-ThurAM1

Room: CC 102C

6/26/2014 8:00 AM

Platform

TCC: SUS

Chair: Rishi Kanabar, USG Corporation

Vice Chair: Chih C. Chao, WRC International

8:00 AM

Time-of-Use Rate Impact on Solar Power Purchase Agreements

Paper#: 33343

J. Pompa¹, P. Cambiaso², T. Tran³; ¹Inland Empire Utilities Agency, Chino, CA, ²Inland Empire Utilities Agency, ³Inland Empire Utilities Agency, Chino, CA

8:20 AM

Evaluating the Emerging Regional Air Quality and Greenhouse Gas Impacts of U.S. Energy Sectors

Paper#: 33103

M. A. Mac Kinnon, M. Carreras-Sospedra, J. Brouwer, D. Dabdub; Advanced Power and Energy Program, University of California, Irvine, CA

8:40 AM

Power to the People: American Energy Superiority, Private Property Rights, and Environmental Stewardship

Paper#: 33406

R. Brandlin; Largely Green Consulting, Arcadia, CA

9:00 AM

The Sustainability Project and the Project Based Learning Model

Paper#: 33358

T. A. Miller; ZMassociates Environmental Corporation, Irvine, CA

Short Term Modeling Issues and Guidance

AIRS-ThurAM1

Room: CC 201

6/26/2014 8:00 AM

Platform

TCC: APM

Chair: Ashok Kumar, University of Toledo

Vice Chair: George Schewe, Trinity Consultants

8:00 AM

Case Study to Investigate Monitored SO₂ Concentrations near Coal-Fired Power Plants: Stationary Monitor to Model Comparison

Paper#: 33818

M. M. Kaplan¹, B. Paine¹, F. Tringale¹, T. Weissinger²; ¹AECOM, Chelmsford, MA, ²Raven Power, Baltimore, MD

8:20 AM

Analysis of Ambient Monitoring Network Data for Use in Air Quality Modeling

Paper#: 33528

D. J. Long; American Electric Power Service Corporation, Columbus, OH

8:40 AM

Comparison of AERMOD and CALPUFF Modeling of an SO₂ Nonattainment Area in Northeast Ohio

Paper#: 33552

G. J. Schewe¹, A. Bhat²; ¹Trinity Consultants, Covington, KY, ²Trinity Consultants, Dallas, TX

9:00 AM

Cardinal Plant Unit 3 – Initial Modeling Results and Comparisons to Ambient Data

Paper#: 33545

D. J. Long; American Electric Power Service Corporation, Columbus, OH

TECHNICAL SESSIONS

Solid Waste Conversion Technologies: Waste to Electricity and Fuel

ENER/WAST-ThurAM1
Room: CC 103A

6/26/2014 8:00 AM

Panel

TCC: WMB

Chair: Coby Skye, Los Angeles County Dept. of Public Works
Vice Chair: David Minott, Arc5 Environmental Consulting, LLC

This session will include timely presentations from leading project developers in the field of solid waste conversion technology. Conversion technologies refer to facilities employing state-of-the-art processes, capable of converting post-recycled, residual solid waste into useful products, green fuels such as ethanol, biodiesel or renewable natural gas, and clean renewable electricity from the organic content of the waste stream. Conversion technologies are non-combustion thermal, chemical, biological and/or mechanical processes and include a diverse array of processes such as gasification, pyrolysis, acid hydrolysis, fermentation, anaerobic digestion, and thermal depolymerization, among others. Such facilities are more commonplace in Europe and Japan, but are starting to emerge in the United States. Each of the panelists will share their real world experiences in developing and operating successful projects, and what the future of solid waste conversion technology looks like in the United States. There are many factors that potentially impact the successful development of solid waste conversion technologies, including financial incentives, regulatory and permitting challenges, community awareness and engagement, political support, availability of suitable feedstock, robustness of the technology, and the capabilities of the project development team. These presentations will provide insight into the way these key challenges interact and how key projects around the world overcame these projects, through the design, permitting, construction and operation phases of the projects. This panel session will be focused on non-combustion thermal and biochemical conversion technologies that generate electricity or produce fuel from solid waste feedstocks. A companion panel session—"Biogas: Generation, Collection, and Utilization"—will focus on anaerobic digestion as a viable conversion technology for managing biodegradable organic waste, including the biodegradable fraction of the solid waste stream. Following the presentations will be a panel discussion, providing an opportunity for audience Q&A.

Panelists:

- *Coby Skye, Los Angeles County Dept. of Public Works*
- *Tim Cesarek, Enerkem*
- *Louis Romo, JFE Engineering America*
- *David Schneider, Anaergia*

Addressing Climate Change: The Intersection of Science, Government & Industry

CLIM-ThurAM2
Room: CC 202A

6/26/2014 10:10 AM

Panel

TCC: CCP

Chair: Howard Balentine, AECOM
Vice Chair: Michael Conrardy, AECOM

The Earth's climate is out of balance. There is an easily observed worldwide increase in the intensity and frequency of severe weather, one of the expected attributes of a changing climate. Recent examples of severe weather include the landfall of Super Typhoon Haiyan in the Philippines in November, 2013; ice, snow, and severe cold in much of the US in the winter of 2013–2014; and simultaneous disastrous flooding in the United Kingdom and drought and extreme high temperatures in Australia. The Intergovernmental Panel on Climate Change (IPCC) has identified GHG emissions as a significant contributor to the observed changes in our climate. In order to avoid the consequences of climate change, government and industry must take part in a coordinated effort to reduce GHG emissions to the level deemed necessary by the best science available. Climate change is the driving force behind several regulations that will dramatically shape urban and economic landscapes over the next decade and beyond. Industries and institutions are currently subject to these regulations requiring them to account for and sometimes lower their GHG emissions. Urban planning will be required to ensure that the intent of the regulations become reality. As public discourse and political agendas have increasingly addressed the issue of climate change mitigation, it is important to reflect on the practical realities of industry and keep an eye toward solutions that address scientific consensus and current realities. Local governments in California and elsewhere are leaders in the preparation of Climate Action Plans. Industry in California is participating in the first US Cap-and-Trade regulation governing greenhouse gases and assessing adaptation and mitigation needs to respond to climate changes. California Universities are leaders in the design of green urban landscapes. Consultants are providing important contributions to both industry and governments in the identification and evaluation of policy options and assistance to both parties in compliance with GHG review under the California Environmental Quality Act. This panel is designed to provide insight into the working processes of government, industry, academia, and other stakeholders as together they adapt to a changing environment.

Panelists:

- *Howard Balentine, AECOM*
- *Dave Van Mullem, Santa Barbara County APCD*
- *Howard Feldman, American Petroleum Institute*
- *Michael Conrardy, AECOM*
- *Dev Vrat, California State University, Northridge*

TECHNICAL SESSIONS

Air Pollution Control 101B: Particulate and Mercury Control

YOUN/EDUC-ThurAM2

Room: CC 203C

6/26/2014 10:10 AM

Panel

TCC: ACC

Chair: John McKenna, ETS, Inc.

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) establishes national ambient air quality standards (NAAQS) for six common air pollutants including carbon monoxide (CO), ground level ozone (O₃), lead, nitrogen oxides (NO_x), sulfur dioxide (SO₂), and particulate matter (PM, PM₁₀ and PM_{2.5}) to protect public health and the environment. In parallel with this effort, the EPA, states, and local air pollution agencies have developed and set increasingly stringent emission standards to reduce the emissions of primary air pollutants NO_x, SO_x, PM, PM₁₀, PM_{2.5}, as well as volatile organic compound (VOC), a precursor of ozone, and other types of acid gases from numerous types of industrial, commercial and residential sources. Under Section 112 of the CAA, EPA must also establish limits on emissions of specific hazardous air pollutants (HAPs) from industrial sources, if there is evidence that HAP emissions from specific sources pose a risk to human health. Mercury, for example, is on the list of HAPs and has been regulated by EPA from a variety of industrial sources, including utility and industrial boilers and cement kilns. The industries are asked to install and operate a myriad of air pollution control devices (APCD), air pollution control methods and tactics to reduce harmful air pollutants and achieve cleaner air. As a result, the air quality in the U.S. has improved significantly since 1980. The emissions of these criteria air pollutants have dropped more than 50% between 1980 and 2011 despite increases in gross domestic products, vehicle miles traveled and the U.S. population. In this section, the panel will discuss the fundamentals of control of particulate matter and mercury in a workshop format. This section will serve well as an introduction course or a refresher course for environmental professionals at all levels.

Panelists:

- *John McKenna, ETS, Inc.*
- *Hardik Shah, Southern Environmental, Inc.*
- *Constance Senior, ADA-ES, Inc.*

Biogas: Generation, Collection, and Utilization: Anaerobic Digestion Case Studies

ENER/WAST-ThurAM2

Room: CC 103A

6/26/2014 10:10 AM

Panel

TCC: WMB

Chair: Mark McDannel, Los Angeles County Sanitation Districts

Vice Chair: Lee Lundberg, Bedrock Enterprises, Inc.

This panel session will include presentations focused on the development of anaerobic digestion projects throughout the world to manage a variety of biodegradable organic waste streams. Anaerobic digestion has been a very well established technology for wastewater treatment throughout the U.S. for many decades. In recent years, there has been an explosion of interest in the use of anaerobic digestion to manage a host of other biodegradable organic waste streams, including agricultural waste and residue, dairy and other farm manure waste, food waste, green waste, and even the biodegradable organic fraction of municipal solid waste. Managing these diverse feedstocks requires innovation in pre-processing and operation of anaerobic digestion facilities to minimize contamination and ensure efficient digestion of the organic feedstock. Municipalities and private companies in the U.S. are looking at models in Europe and many other countries, where hundreds of facilities have been successfully operating and new facilities continue to be installed at a rapid pace. Emerging anaerobic digestion projects employ different approaches, including “high solids” or “dry fermentation” technology, “low solids” technology more similar to wastewater treatment digesters, and even using excess capacity at existing wastewater treatment plants to manage additional biodegradable organic feedstock. This panel session will cover the pros and cons of these and other approaches to developing a successful anaerobic digestion project. In California, the emerging carbon market has created a new incentive to develop digesters as a more sustainable way to manage biodegradable organic wastes. Keeping such wastes from being disposed in a landfill while producing bioenergy provides multiple climate benefits, while providing an opportunity to return organic nutrients to the soil. These and other benefits of anaerobic digestion are why there has been a surge of interest in California in the development of anaerobic digestion projects, with a host of facilities planned or in development throughout the State. Panelists in this session will focus on projects in California while also providing an international perspective from companies with experience developing facilities around the world. This panel session will be focused on anaerobic digestion as a viable conversion technology for managing biodegradable organic waste. A companion panel session—“Solid Waste Conversion Technologies: Waste to Electricity and Fuel”—will focus on non-combustion thermal and biochemical conversion technologies that generate electricity or produce fuel from solid waste feedstocks. Following the presentations will be a panel discussion, providing an opportunity for audience Q&A.

TECHNICAL SESSIONS

Panelists:

- Mark McDannel, Los Angeles County Sanitation Districts
- Eric Herbert, Zero Waste Energy, LLC.
- Paul Sellew, Harvest Power Inc.
- Stephen Zurn, City of Glendale
- Lisa Rothbart, Orange County Sanitation District

Carbonaceous Particulate Matter

AIRS-ThurAM2

Room: CC 103B

6/26/2014 10:10 AM

Platform

TCC: APP

Chair: RKM Jayanty, Research Triangle Institute

Vice Chair: Peter Mueller, TropoChem

10:10 AM

Spatial and Seasonal Patterns in Elemental Carbon Across the United States

Paper#: 33467

J. L. Hand¹, B. Schichtel², W. White³, W. Malm¹; ¹Colorado State University, Fort Collins, CO, ²NPS, Fort Collins, CO, ³Crocker Nuclear Laboratory, Davis, CA

10:30 AM

Multi-level Measurements of Black Carbon Concentrations at a High-rise in San Francisco

Paper#: 33667

H. Wong, K. Kurzenhauser, M. Keinath; ENVIRON, San Francisco, CA

10:50 AM

Fine Carbonaceous Aerosols in Monterrey Mexico: Chemical and Meteorological Relations

Paper#: 33600

Y. Mancilla, A. Mendoza; ITESM, Campus Monterrey, Monterrey, Mexico

11:10 AM

Wet Removal of Organic and Black Carbon Aerosol: A Field Study

Paper#: 33656

A. Torres¹, T. Bond², C. Lehmann³; ¹University of Illinois, Urbana, IL, ²University of Illinois Urbana-Champaign, Urbana, IL, ³Illinois State Water Survey, Champaign, IL

11:30 AM

Source Apportionments for Submicron Organic Aerosol by Positive Matrix Factorization in Southern Taiwan

Paper#: 33392

Y. Wu; Department of Environmental Engineering, National Cheng Kung University, Tainan, Taiwan

Clean Air Act Enforcement - New Source Review, Other Priorities, and Current Issues

REGU-ThurAM2

Room: CC 102B

6/26/2014 10:10 AM

Panel

TCC: REG

Chair: Colin Campbell, RTP Environmental Associates, Inc.

Although EPA's NSR enforcement initiative has now been underway for fifteen years, the major NSR programs (Nonattainment New Source Review and Prevention of Significant Deterioration) remain an enforcement priority. The agency and the administration continue to rely on this initiative as a primary tool for shutting down or reducing emissions from coal-fired power plants, cement manufacturing plants, glass manufacturing plants, and other facilities. The agency continues to apply new litigation strategies and theories, and the case law continues to evolve. In particular, the so-called NSR reform provisions have begun to have a significant influence in enforcement actions and court decisions. The panel members will provide updates regarding recently initiated Clean Air Act enforcement cases and recent settlements and court decisions. They also will present analysis of what those actions and decisions mean for air permitting and compliance strategies for owners and operators of stationary sources, both from technical and legal standpoint. Anticipated topics include the following: • Status of enforcement actions against petroleum refineries, cement plants, and glass plants. • Court decisions regarding the general federal statute of limitations, especially as it pertains to injunctive relief sought in NSR enforcement cases. • The DTE and OG&E cases and the appropriateness of emissions management schemes as a means of complying with preconstruction major NSR program requirements. • The role of climate change considerations in establishing EPA's enforcement priorities, including the emphasis on renewable energy projects as "environmental mitigation" in NSR settlements. • The role of environmental justice considerations in establishing EPA's enforcement priorities. • Status of EPA's enforcement initiative targeting equipment leaks and flare combustion efficiency at petroleum refineries and chemical plants. • Enforcement activities in the upstream oil & gas sector, particularly in shale gas plays.

Panelists:

- Colin Campbell, RTP Environmental Associates, Inc.
- Peter Keller, RTP Environmental Associates, Inc.
- Gurinder Saini, RTP Environmental Associates Inc.
- Bill Underwood

TECHNICAL SESSIONS

Emissions Monitoring

AIRS-ThurAM2
Room: CC 101B

6/26/2014 10:10 AM

Platform
TCC: AAE

Chair: Praveen Srirama, Carlsbad Environmental Monitoring & Research Center

Vice Chair: Asami Tanimoto, CDM Smith

10:10 AM

Development and Application of a Flexible and Computationally Simple Biogenic Emissions Generator

Paper#: 33644

G. Moore¹, L. V. Matamala²; ¹AECOM, Chelmsford, MA, ²Enviromodeling Ltda, Santiago, Chile

10:30 AM

Determining the Causes of Filter Color Variation After IMPROVE_A Carbon Analysis

Paper#: 33577

R. J. Tropp, D. Trimble, J. C. Chow, J. G. Watson; Desert Research Institute, Reno, NV

10:50 AM

Inorganic Analysis of Aerosols from the Waste Isolation Pilot Plant Exhaust Air

Paper#: 33311

P. Srirama, A. Chancellor; Carlsbad Environmental Monitoring & Research Center, Carlsbad, NM

11:10 AM

Unmanned Aircraft Systems and Environmental Monitoring

Paper#: 31513

K. Cowen; Battelle, Columbus, OH

11:30 AM

Ambient Gas Quantification Using Multipoint Optical Detection

Paper#: 33438

S. Schoonbaert, D. Tyner, M. R. Johnson; Carleton University, Ottawa, ON

Emissions Surveys: Ammonia

AIRS-ThurAM2
Room: CC 102A

6/26/2014 10:10 AM

Platform
TCC: AAE

Chair: Sharon Sjostrom, ADA-ES, Inc.

Vice Chair: Srinidhi Balasubramanian, University of Illinois, Urbana-Champaign

10:10 AM

CASTNET's NO_y Monitoring Network

Paper#: 33822

K. Mishoe¹, C. Rogers², H. Howell¹, W. Barnard¹, M. Stewart¹; ¹AMEC, Newberry, FL, ²AMEC, Inc., Jacksonville, FL

10:30 AM

Quality Assurance of Passive Air Samplers for Ambient Measurements

Paper#: 33664

C. Lehmann¹, M. Puchalski², J. Walker³, N. Gartman¹, M. Vieira-Filho¹, S. Anderson¹, M. Rhodes; ¹Illinois State Water Survey, Champaign, IL, ²EPA, Washington, DC, ³EPA, Research Triangle Park, NC

10:50 AM

Modeling Temporal Variability in Gaseous Ammonia Emissions from Chemical Fertilizer Usage in Midwest USA

Paper#: 33187

S. Balasubramanian¹, M. Wang², S. Koloutsou-Vakakis², M. J. Rood³; ¹University of Illinois Urbana-Champaign, Urbana, IL, ²University of Illinois, Urbana, IL, ³Department of Civil and Environmental Engineering, University of Illinois, Urbana, IL

11:10 AM

Summertime Ambient Ammonia and Ammonium Aerosol in Beijing Urban Area, China

Paper#: 33127

Z. Meng¹, W. Lin², R. Zhang³, X. Jia², M. Xue¹; ¹Chinese Academy of Meteorological Sciences, Beijing, China, ²CMA Meteorological Observation Centre, Beijing, China, ³Institute of Atmospheric Physics, Beijing, China

TECHNICAL SESSIONS

Guideline on Air Quality Models - A Continuing Dialogue on the Path Forward

AIRS/REGU-ThurAM2
Room: CC 201

6/26/2014 10:10 AM

Panel

TCC: APM

Chair: Justin Walters, Southern Company

Vice Chair: Ryan Gesser, ERM

10:10 AM

Guideline on Air Quality Models - a Continuing Dialogue on the Path Forward

Paper#: 34554

J. Walters¹, R. Gesser², L. Langworthy, K. Baugues; ¹Southern Company, Birmingham, AL, ²ERM, Atlanta, GA

10:30 AM

Challenges with National Ambient Air Quality Standards Implementation Following Regulatory Air Quality Modeling Guidance and Techniques

Paper#: 33366

R. Gesser; ERM, Atlanta, GA

Mini-Symposium Panel: Los Angeles International Airport Air Quality and Source Apportionment Study

MINI-ThurAM2

Room: CC 101A

6/26/2014 10:10 AM

Panel

TCC: OMS

Chair: Charng-Ching Lin, Tetra Tech, Inc.

Vice Chair: Salar Niku, Tetra Tech, Inc.

Los Angeles International Airport (LAX) is the third busiest airport in the United States and handled approximately a half million flights and moved more than 60 million passengers in 2012. Potential impacts of air emissions from airport operations on ambient air quality in airport-adjacent communities have been a concern for local residents. To help address these concerns, Los Angeles World Airports (LAWA) initiated the LAX Air Quality and Source Apportionment Study (AQSAS). The goal of the Study was to measure air pollutant concentrations in the vicinity of LAX to assess the potential impacts of airport-related emissions on ambient air quality of neighboring communities. Additional emissions sources in the Study Area included various major emission sources such as refineries, power plants, and ocean-going vessels in the nearby shipping channels. This comprehensive study is the first of its kind conducted at a major international airport. The airport is a unique source in that it contains many sources, such as aircraft, ground support equipment, and motor vehicles (on

and off airport), and may have emissions at multiple altitudes. The airport also has numerous people traveling to and from its location at all hours of the day. The Study included both field measurements and novel modeling approaches to address contributions of airport-related emissions to ambient air

concentrations. The panel discussions will include the following seven components: Introduction, History of the Study, Project Scope and Technical Approaches, Field Measurement Program, Receptor-Based Modeling (Chemical Mass Balance and Nonparametric Trajectory Analysis), Emission Inventory, Sourced-Based Modeling (AERMOD and CMAQ), and Conclusions.

Panelists:

- *Charng-Ching Lin, Tetra Tech, Inc.*
- *Robert Freeman, Los Angeles World Airports*
- *David Campbell, Desert Research Institute*
- *Ron Henry, University of Southern California*
- *Michael Ratte, KB Environmental Sciences*
- *Norene Hastings, Los Angeles World Airports*
- *John Pehrson, CDM Smith*
- *Xiaoliang Wang, Desert Research Institute*

Nanotechnology Safety and Regulation

NANO/REGU-ThurAM2

Room: CC 102C

6/26/2014 10:10 AM

Panel

TCC: NAN

Chair: Yevgen Nazarenko, McGill University

Nanomaterials are considered a distinct category of substances, where especially fine structure or dispersion level result in unique chemical, physical, optical, electrical, quantum and other properties. The advances in engineering of such materials to possess unique valuable properties are leading to their increasing use in various areas of application. The growing use of engineered nanomaterials leads to environmental and human exposure and, consequently, a risk of associated health effects. The danger is evidenced by the recent findings that identified various adverse reactions that occur at the cellular and systemic levels following contact with certain engineered nanomaterials. Nanotechnology-specific regulations and guidance are now emerging in the U.S. and internationally. Existing regulations' applicability is also expanded to include engineered nanomaterials. These regulations directly affect the development and commercialization of nanotechnologies. The development of regulation is occurring at the background of a very limited understanding of the potential for exposure to nanomaterials and resulting health effects, which is critical for the regulation to be relevant and actually meet the need to protect public health and the environment. The most important aspect of the discussion will be how the prospective regulations

TECHNICAL SESSIONS

can potentially increase nanotechnology safety. Applicability of existing and prospective future regulations will be another important topic. The panelists will talk about potential problems associated with engineered nanomaterial use in nanotechnology-based consumer products as well as concerns about incidental nanoparticle release from industry and as a result of nanomaterial-doped fuel combustion. The panelists' reports will provide an update on the current state of nanotechnology regulation development, adoption and application in the U.S. and similar efforts in the EU and elsewhere in the world. Additionally, the application of current U.S. regulations to engineered nanomaterials with novel molecular identity will be discussed.

Panelists:

- *Yevgen Nazarenko, McGill University*
- *Kenneth Moss, EPA*
- *William Looney, AECOM*
- *Jim Alwood, EPA*

Regulatory and Program Updates from the Pacific Coast

REGU-ThurAM2
Room: CC 103C

6/26/2014 10:10 AM

Platform

TCC: REG

Chair: Melissa Hillman, Trinity Consultants

Vice Chair: Bhaskar Chandan, SCAQMD

10:10 AM

Challenges Faced in Issuing Initial Title V Permits for the Refineries in the South Coast

Paper#: 31916

B. Chandan, T. D. Vo, R. Sanford; SCAQMD, Diamond Bar, CA

10:30 AM

Metro Vancouver's Non-road Diesel Regulation: an Incredible Success so Far but Can We Keep It Up?

Paper#: 32910

R. Robb; Metro Vancouver, Burnaby, BC

10:50 AM

Overview of PSD Programs in California

Paper#: 33619

M. Hillman; Trinity Consultants, Oakland, CA

11:10 AM

Innovation in Air Quality Regulation Information Management: An Approach for Air Quality Regulation in the Internet Era

Paper#: 33190

J. Williams, J. Roselle; Bay Area Air Quality Management District, San Francisco, CA

Toward Sustainable Transportation

TRAN-ThurAM2

Room: CC 203A

6/26/2014 10:10 AM

Platform

TCC: OMS/PLU

Chair: Harold Brazil, Bay Area Air Quality Management District

Vice Chair: Flint Webb, Leidos

10:10 AM

The Future of Alternative Transportation - How Electric Vehicles, Bicycle and Car Sharing, and Technology Are Reshaping Mobility to Make a More Sustainable San Francisco Bay Area

Paper#: 33586

K. Schkolnick, D. Breen, L. Hui; Bay Area Air Quality Management District, San Francisco, CA

10:30 AM

The Development of California Light-Duty Vehicle (LDV) Requirements to Support Climate Stabilization: Fleet Emission Rates and Per-capita Driving

Paper#: 30793

M. R. Bullock; Sierra Club and the Democratic Party, Oceanside, CA

10:50 AM

Analysis of Public Transportation Service Quality and Its Implications on City's Sustainability: A Case Study for Bogota, Colombia

Paper#: 33654

J. F. Franco, K. J. Zuluaga Orjuela ; Research Group on Environmental Management . School of Engineering, Universidad EAN, Bogotá, DC, Cundinamarca, Colombia

11:10 AM

If You Build It, They Will Come – Local Governments and Planning for the Electric Car

Paper#: 32966

E. Hou, E. Blair; MCIP, Burnaby, BC

11:30 AM

Comparison of Fuel Use and Emissions for E85 versus Gasoline Fueled Vehicles Based on In-use Measurements

Paper#: 33303

M. Delavarrafiee¹, H. Frey², X. Zheng¹, R. Weaver³; ¹North Carolina State University, Raleigh, NC, ²Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC, ³Marine Corps Air Station, Cherry Point, NC

TECHNICAL SESSIONS

Building Engagement Efforts to Connect NASA and NOAA's Climate and Environmental Data and Satellite Measurements to Decision-Makers

CLIM-ThurPM1

Room: CC 103B

6/26/2014 2:00 PM

Panel

TCC: LHC/CC

Chair: Ali Omar, NASA

Vice Chair: Sue Estes, NASA

Development of Climate Data Records for Public Health

Under the Climate-Ready States and Cities Initiative program, Centers for Disease Control and Prevention supports 18 cities and states to become better prepared for climate change and weather extremes. To help support this initiative, a Memorandum of Understanding was signed between NOAA and CDC to increase inter-agency interaction and assist with providing improved data access to increase the knowledge of climate change on public health. As part of the agreement between the two agencies, a representative of NOAA was to be housed at CDC to assist with data access and share expertise. The interaction between these agencies has assisted in improved knowledge of climate data record, assisted in development of multiple projects, and increased interaction between agencies. The purpose of this presentation is to highlight some of the interaction that has occurred and illustrate some of the knowledge gained from this coordinated effort.

NASA Imagery Helps Identify Cardiovascular Risks from Wildfire Smoke

A long-term study of the effects of inhaled air pollution particles on the cardiovascular system was conducted in Riverside California. Animals with high blood pressure or normal blood pressure were exposed to ambient particles for 5 hours per day, 4 days per week for 3 months. During this long term exposure, there was an unplanned incursion of smoke from wild land fires into the exposure area. Initially during the fires, winds from the northeast (Santa Ana wind conditions) prevented smoke from the fires from reaching the exposure site. However, after about a week the meteorological conditions changed and offshore winds began fumigating the exposure site with ambient particles that were augmented with particles from the smoke. NASA satellite imagery enabled us to pinpoint when the wind direction changed and when the maximum period of exposure occurred. There was a significant effect on blood pressure and the data suggest that exposure to smoke from wildfires may alter homeostatic control of cardiac output which might be medically significant.

NASA Health and Air Quality Applications

There is a growing body of evidence that the environment can affect human health in ways that are both complex and global in scope. To address some of these complexities, NASA

maintains a diverse constellation of Earth observing research satellites, and sponsors research in developing satellite data applications across a wide spectrum of areas. These include environmental health; infectious disease; air quality standards, policies, and regulations; and the impact of climate change on health and air quality in a number of interrelated efforts. The Health and Air Quality Applications fosters the use of observations, modeling systems, forecast development, application integration, and the research to operations transition process to address environmental health effects. NASA has been a primary partner with Federal operational agencies over the past nine years in these areas. This talk presents the background of the Health and Air Quality Applications program, recent accomplishments, and a plan for the future.

Panelists:

- *Jesse Bell, NOAA*
- *John Haynes, NASA*
- *Michael Kleinman, University of California, Irvine (UCI)*

Health Effects of Inhaled Contaminants in Indoor and Outdoor Environments

H&EE-ThurPM1

Room: CC 102B

6/26/2014 2:00 PM

Platform

TCC: HEE

Chair: Michael Kleinman, Dept. of Medicine, UC Irvine

Vice Chair: Suresh Santanam, Syracuse Center of Excellence

2:00 PM

The Influence of Temperature on the Distribution and Adsorption Kinetics of Phthalates in Residential Home, a Case Study

Paper#: 33553

Y. Xu, C. Bi; The University of Texas at Austin, Austin, TX

2:20 PM

Characterizing Air Pollution Events with Ambient Monitoring Data

Paper#: 33391

Y. Huang; National Kaohsiung First University of Science and Technology, Kaohsiung City, Kaohsiung, Taiwan

2:40 PM

Cardiopulmonary Health Effects: Toxicity of Semi-volatile and Non-volatile Components of PM

Paper#: 33536

M. T. Kleinman¹, A. Keebaugh², L. Wingen², P. Pakbin³, C. Sioutas³; ¹Department of Medicine, Irvine, CA, ²University of California, Irvine, Irvine, CA, ³University of Southern California, Los Angeles, CA

TECHNICAL SESSIONS

3:00 PM

Oxidative Stress in Workers Due to Occupational Exposure to Volatile Organic Compounds in the Furniture Refinishing Industry

Paper#: 33554

*A. Rady*¹, *M. B. Turner*², *A. Zahran*³, *S. Fathy*⁴; ¹RTI International, Abu Dhabi, United Arab Emirates, ²RTI International, Research Triangle Park, NC, ³Minufiya University, Cairo, Egypt, ⁴Ain Shams University Cairo, Cairo, Egypt

International Environmental Issues in the Chemical & Refining Industries

O&GS/INDU-ThurPM1

Room: CC 203C

6/26/2014 2:00 PM

Platform

TCC: CHP

Chair: Ed Fiesinger, Zephyr Environmental Corp.

Vice Chair: Gary Elliott, Lafarge North America

2:00 PM

How Improved Environmental Permitting and Assessment Policies Are Reducing Impacts to the Arabian Gulf

Paper#: 33511

*S. Burns*¹, *H. Abdullah*², *A. Sajwani*², *F. Al Hammadi*³, *A. Al Hashmi*³, *I. Al Ali*³; ¹RTI International, Research Triangle Park, NC, ²RTI International, Abu Dhabi, United Arab Emirates, ³Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

2:20 PM

Inspections and Compliance Tool (ICT) for Industrial Facilities and Development Projects in Abu Dhabi Emirate

Paper#: 33550

*A. Rady*¹, *M. B. Turner*², *K. Al Hajeri*³, *A. Al Qudah*³; ¹RTI International, Abu Dhabi, United Arab Emirates, ²RTI International, Research Triangle Park, NC, ³Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

2:40 PM

Quantifying Tank Venting Losses Using Tunable Diode Laser Spectroscopy

Paper#: 33522

S. A. Festa-Bianchet, *M. R. Johnson*, *S. Schoonbaert*; Carleton University, Ottawa, ON

3:00 PM

The Electric Energy in México, the Goals of Generating Capacity Installed Without Fossil Fuels and Reducing Emissions

Paper#: 33603

S. Rosas, *H. Bravo*, *R. Sosa*; Universidad Nacional Autonoma de México, Distrito Federal, Mexico

3:20 PM

Results and Lessons Learned from the Environment-agency Abu Dhabi's Outreach Campaign for the Concrete Products Sector

Paper#: 33039

*K. E. Bronstein*¹, *M. B. Turner*¹, *J. Baskir*¹, *A. Sajwani*², *A. Al Waheebi*³, *M. Al Ashram*²; ¹RTI International, Research Triangle Park, NC, ²RTI International, Abu Dhabi, United Arab Emirates, ³Environment Agency-Abu Dhabi, Abu Dhabi, United Arab Emirates

3:40 PM

Pursuing Environmental Excellence: A Balanced Scorecard Approach

C. Stapp, Saudi Aramco, Saudi Arabia

Latest Findings in Vehicle Emissions Modeling and Measurement - Part 1

TRAN-ThurPM1

Room: CC 203A

6/26/2014 2:00 PM

Platform

TCC: OMS

Chair: David Cooper, University of Central Florida

Vice Chair: Bin Liu, North Carolina State University

2:00 PM

The Effects of Biodiesel Blending on Hydrocarbon Emissions from a Single-Cylinder Compression Ignition Engine

Paper#: 32045

F. Kiani, *M. Mangus*, *E. Peltier*, *C. Depcik*, *S. Stagg-Williams*; University of Kansas, Lawrence, KS

2:20 PM

Using Naturalistic Driving Study Data for Development of Drive Cycles for Modal Emissions Modeling

Paper#: 32082

S. L. Hallmark, *B. Wang*; Iowa State University, Ames, IA

2:40 PM

Emissions Impact of High Occupancy Vehicle Lane to High Occupancy Toll Lane Conversions: An Atlanta, GA Case Study

Paper#: 33507

Y. Xu, *H. Liu*, *R. Guensler*; Georgia Institute of Technology, Atlanta, GA

3:00 PM

Using Activity-based Travel Models to Aid Climate Action Plan Development

Paper#: 33452

H. M. Brazil; Metropolitan Transportation Commission, Oakland, CA

TECHNICAL SESSIONS

3:20 PM

MOVES Model Sensitivity Analysis to Assist in Prioritizing Data Collection and Analysis Efforts for MOVES Inputs

Paper#: 33483

D. Kall¹, C. D. Porter², S. Fincher³; ¹Cambridge Systematics, Atlanta, GA, ²Cambridge Systematics, Inc., Cambridge, MA, ³Eastern Research Group (ERG), Austin, TX

Mercury Control Technologies and Strategies I

POWR-ThurPM1

Room: CC 101B

6/26/2014 2:00 PM

Platform

TCC: AAC

Chair: Sharon Sjostrom, ADA-ES, Inc.

2:00 PM

Simultaneous Control of Hg/SOx/NOx from Coal-fired Utility Flue Gases with Transition Metal Oxide-doped Activated Carbon

Paper#: 32848

H. Hsi¹, C. Chiu², H. Lin³, K. Su²; ¹Graduate Institute of Environmental Engineering, Taipei, Taiwan, ²Institute of Environmental Engineering and Management, National Taipei University of Technology, Taipei, Taiwan, ³Department of Chemistry, National Cheng-Kung University, Tainan, Taiwan

2:20 PM

Regenerable Magnetic Sorbents Based on Ferrosphere for Hg⁰ Capture and Oxidation in Flue Gas

Paper#: 32939

Y. Zhao¹, J. Yang¹, J. Zhang², C. Zheng²; ¹Huazhong University of Science and Technology, Wuhan, China, ²State Key Laboratory of Coal Combustion, Huazhong University of Science & Technology, Wuhan, China

2:40 PM

Elemental Mercury Oxidation in an Electrostatic Precipitator with In-situ Soft X-rays

Paper#: 31957

H. Jing, X. Wang, W. Wang, P. Biswas; Washington University in St. Louis, Saint Louis, MO

3:00 PM

Mercury Emissions Control by Enhanced Oxidation and Life Cycle Assessment of the Technology

Paper#: 33542

A. I. Martinez¹, P. Gor²; ¹Texas A&M University Kingsville, Kingsville, TX, ²Texas A&M University Kingsville, Corpus Christi, TX

3:20 PM

A Study on Emission and Mass Balance of HG in Coal-fired Power Plants and Cement Kilns

Paper#: 33207

R. Kim¹, J. Hong¹, S. Kim¹, J. Kim¹, H. Kim¹, K. Jang²; ¹National Institute of Environmental Research, Incheon, South Korea, ²National Institute of Environmental Research, Incheon, South Korea

Mini-Symposium Panel: Health and Community Impacts Related to Air Pollution from Ports, International Trade Activities and Goods Movement

ThuPMINI/H&EE-ThurPM1

Room: CC 101A

6/26/2014 2:00 PM

Panel

TCC: PLU

Chair: Andrea Hricko, Keck School of Medicine of USC

Ocean-going transport ships emit particulate matter and other pollutants estimated to be responsible for approximately 60,000 cardiopulmonary and lung cancer deaths annually, with most deaths occurring near coastlines in Europe, East Asia, and South Asia. This panel will provide a global to local perspective in discussing these and other impacts of international trade related to emissions from ships, locomotives, trucks and cargo-handling equipment. It will describe trade through the Ports of Los Angeles and Long Beach, the largest container port complex in the United States, and how these ports impact a wide geographic region through activities at marine terminals, along truck routes, at rail yards and at massive distribution centers inland. The ports in southern California have been heralded for environmental mitigations and successful emission reductions through their joint Clean Air Action Plan adopted in 2005. The panel will provide information on the 2002 landmark legal victory that was the backdrop to adoption of the clean air plan and describe how a \$50 million settlement over a faulty environmental impact report for a new shipping terminal changed the way these ports do business. Finally, coal and crude oil movements by rail are on the rise, as are community and environmental concerns about these trends, as demonstrated by a crude oil tanker car explosion in Canada that devastated a small town and a derailment of tanker cars filled with crude oil from North Dakota with a major spill into an Alabama wetland area, both in 2013. The final panelist will take us to the Gulf Coast, to provide a broader view of "goods movement" – looking at crude oil and petrochemical products being transported in tanker cars, on ships and in pipelines rather than at consumer products being transported in containers.

Panelists:

- Andrea Hricko, Keck School of Medicine of USC
- James Corbett, College of Earth, Ocean, and Environment, University of Delaware
- Melissa Lin-Perrella, Natural Resources Defense Council
- Juan Parras, Texas Environmental Justice Advocacy Services
- Ed Avol, Keck School of Medicine of USC
- Kim Gaddy

TECHNICAL SESSIONS

Modeling Studies and Results

AIRS-ThurPM1

Room: CC 201

6/26/2014 2:00 PM

Platform

TCC: APM

Chair: Anke Beyer-Lout, CPP, Inc.

Vice Chair: Tony Schroeder, Trinity Consultants

2:00 PM

PM_{2.5} Modeling Guidance Overview and Case Studies for Secondary Formation of PM_{2.5} from Precursors

Paper#: 33669

A. C. Henolson¹, J. Fickas²; ¹Trinity Consultants, Kent, WA, ²Trinity Consultants, GA

2:20 PM

Fugitive Dust Emissions, Permitting, and Modeling at Bluff Road Landfill: A Facility's Perspective into a Modeled PSD Increment Violation

Paper#: 33148

T. Jeter; SCS Aquaterra, Overland Park, KS

2:40 PM

Evaluation of Source Configuration Impacts for Modeling Fugitive Dust from Roads in AERMOD

Paper#: 33626

K. Kurzenhauser, T. Bowie, H. Wong; ENVIRON, San Francisco, CA

3:00 PM

The Study of AERMOD and ISCST3 for Area Source Simulation in Taiwan

Paper#: 33215

H. Liu, W. Tseng, C. Tseng; National Taipei University of Technology, Taipei, Taiwan

3:20 PM

Evaluation of Required Regulatory Switches for CALMET in the Alberta Oil Sands

Paper#: 33595

R. Martin; Golder Associates, Calgary, AB

NOx Control Technologies and Strategies I

INDU-ThurPM1

Room: CC 102A

6/26/2014 2:00 PM

Platform

TCC: AAC

Chair: Minh Pham, South Coast Air Quality Management District

Vice Chair: Laki Tisopulos, South Coast Air Quality Management District

2:00 PM

The World's First Flameless Crude Heater

Paper#: 32895

W. Gibson, M. Zimola; Great Southern Group, Broken Arrow, OK

2:20 PM

Oxy-flameless Combustion Heaters for Refinery Process

Paper#: 32899

W. Gibson, M. Zimola; Great Southern Group, Broken Arrow, OK

2:40 PM

Reducing NOx and NH₃ Emissions with Advanced SCR Technology

Paper#: 33233

R. Aiello, K. Doura, W. Chu, P. Andersen; Johnson Matthey, Audubon, PA

3:00 PM

LoTOxTM - Novel NOx Control Solution

Paper#: 33612

N. J. Suchak¹, M. Caldwell², P. Studer², F. Fitch²; ¹Linde Gases, Murray Hill, NJ, ²Linde Gas, Murray Hill, NJ

3:20 PM

Low Temperature Selective Catalytic Reduction of NOx with NH₃ Using Perovskite-type Oxide Catalysts

Paper#: 32657

L. Lai¹, H. Bai¹, S. Yan², J. Hsu²; ¹Institute of Environmental Engineering, National Chiao Tung University, Hsinchu, Taiwan, ²Industrial Technology Research Institute Green Energy and Environment Research Laboratories Environment & Safety Technology Division Environment Nanotechnology Department, Hsinchu, Taiwan

TECHNICAL SESSIONS

Prevention Through Design (PtD) Aspects of Nanomaterials

NANO/H&EE-ThurPM1
Room: CC 102C

6/26/2014 2:00 PM

Panel

TCC: NAN

Chair: Thomas Morahan, Greystone Strategies, LLC

This session will be held by invited guests at the forefront of the nanomaterials market. The session will focus on the PtD aspects of Nanomaterial design and use from the molecule, out to the marketplace, into the environment, and ultimately to reuse-recycle. Nanoscale science and engineering is developing new materials and technologies at an unprecedented pace. To address new concerns, the Air & Waste Management Association (A&WMA) Technical Council commissioned an Intercommittee Task Force (ITF) on Nanoscale Science and Engineering. The goal of the ITF is to bring societal recognition, understanding and emphasis to address the identification, understanding and mitigation of possible environmental health and safety issues associated in working at the nanoscale. Much research to date has focused on the possible health effects of new classes of engineered carbon nanotubes and other nanoparticles. As research and regulations will be in development for some time, entities involved with nanoscale manufacturing need to become proactive now to protect their workers, operating environments and communities. In some cases, the physical and chemical hazards involved in the processes themselves can be more problematic than the actual nanoparticles. This panel will focus on the management of corporate liability in the specifically in the nanotechnology manufacturing sector. The panel will provide an opportunity discuss new developments environmental policy, measurement, health effects, monitoring, management, and safety issues that can affect the short and long-term management of corporate liability. Webinars are great for getting information out to a broad audience and we have enjoyed this approach with other groups who want to 'get started' with the process of understanding what nanotechnology, nanomaterials, and the rapid evolution of advanced materials and technologies mean to the A&WMA audience. The resulting session will be recreated as a webinar series for members that cannot attend the ACE.

Panelists:

- *Thomas Morahan, Greystone Strategies, LLC*
- *Charles Geraci, CDC*
- *Lynn Bergeson, Bergeson & Campbell*
- *Laura Hodson, CDC*
- *Jay West, American Chemistry Council*

Recent Experience/Remediation Sites

H&EE/WAST-ThurPM1
Room: CC 103C

6/26/2014 2:00 PM

Platform

TCC: RAM

Chair: Heidi Rous, PCR Services Corp

Vice Chair: Scott Weaver, ERM

2:00 PM

Health Risk Assessment of a Landfill Site, Part I – Data Reduction and Statistical Analysis

Paper#: 33623

E. Yan¹, H. Rous², A. Sako²; ¹PCR Services Corp, Santa Monica, CA, ²PCR Services Corp, Pasadena, CA

2:20 PM

Health Risk Assessment of a Landfill Site, Part II – Development of an Emissions Inventory

Paper#: 33638

A. Sako¹, H. Rous¹, E. Yan²; ¹PCR Services Corp, Pasadena, CA, ²PCR Services Corp, Santa Monica, CA

2:40 PM

Health Risk Assessment of a Landfill Site, Part III – Results and Risk Communication

Paper#: 33614

H. Rous¹, A. Sako¹, E. Yan²; ¹PCR Services Corp, Pasadena, CA, ²PCR Services Corp, Santa Monica, CA

3:00 PM

Incorporating Dispersion and Climatology in the Development of Risk-based Action Levels for Real-time Fence Line Air Quality Monitoring at Demolition and Remediation Sites

Paper#: 33046

D. Heinold, T. Markey, F. Tringale; AECOM, Chelmsford, MA

TECHNICAL SESSIONS

Regional Approaches to Comprehensive Climate Action Planning

CLIM-ThurPM1

Room: CC 202A

6/26/2014 2:00 PM

Panel

TCC: CCP

Chair: Abby Young, Bay Area Air Quality Management District

The San Francisco Bay Area is home to 7 million people, 5 million vehicles, 110 separate local jurisdictions, and is the world's 21st-largest economy. As such, the region is a significant producer of greenhouse gas (GHG) emissions. The region presents significant opportunities and challenges for reducing GHG emissions. This panel will explore how multi-jurisdictional, collaborative approaches can propel a region down a path toward long-term GHG reductions. The Bay Area has long served as a leader in climate action planning. Approximately fifty local governments in the Bay Area have adopted and are implementing local climate action plans. This leads all other metropolitan regions across the country. These achievements are in large part due to the leadership of the Bay Area Air Quality Management District (Air District). The Air District has invested over \$7 million in climate protection planning and projects, adopted the first GHG fee on stationary sources in the nation, and recently adopted a regional goal of reducing GHG emissions 80% below 1990 levels by 2050. At the state level, California's current Scoping Plan Update process is investigating aggressive, long-term targets for reducing GHG emissions, and seeks to develop a roadmap to achieve those reductions. Significant climate planning work at the state, regional and local level provides an excellent opportunity for the Air District, a regional government agency, to initiate and lead a regional climate action planning process to position the Bay Area to achieving its aggressive GHG reduction goal. This Panel will present on different elements of regional climate action planning, using the San Francisco Bay Area as a model, and featuring presenters from regional and local public agencies. Panel presentations will include: • Bay Area Air Quality Management District: A history of regional climate action and planning in the Bay Area, including efforts at the city, county and regional levels, regional policy collaborations to reduce GHG emissions, and regulatory approaches. Also provide a preview of the future of regional climate action planning, based on the Air District's current efforts to develop a regional climate action strategy. • San Mateo City/County Association of Governments: One county's approach to developing standardized methodologies and tools to facilitate widespread climate action planning among the 23 cities and towns in the County, featuring the Regionally Integrated Climate Action Planning Suite (RICAPS) – a collection of templates and quantitative tools for local climate planning. • Marin County General Services Agency: A multi-jurisdictional, collaborative approach to staffing climate protection work among the County's 10 cities, and to adopt and implement common policies to reduce GHG emissions. • Bay Conservation

and Development Commission: The Adapting to Rising Tides project addresses climate impact adaptation through multi-jurisdictional vulnerability assessments and impact mitigation planning.

Panelists:

- Abby Young, Bay Area Air Quality Management District
 - Kim Springer, San Mateo City/County Association of Governments
 - Cristine O'Rourke, Marin County General Services Agency
 - Joe LaClair, Bay Conservation and Development Commission
-

Taking Action After West: How EPA, DHS, and OSHA are Collaborating on Chemical Facility Safety and Security

ThurPM2

Room: CC 202C

6/26/2014 2:00 PM

Panel

Chair:

Vice Chair:

Come learn how EPA, DHS, and OSHA found new ways to collaborate and work closely with stakeholders on chemical facility safety and security. Chemicals and the facilities that manufacture, store, distribute, and use them are essential to our economy, as well as the life, health, and well-being of people across the globe. However, incidents at chemical facilities are tragic reminders that the handling and storage of chemicals can present serious risks that must be addressed. Executive Order (EO) 13650 - Improving Chemical Facility Safety and Security directs the Federal Government to: Improve operational coordination with State and local partners; Enhance Federal agency coordination and information sharing; Modernize policies, regulations and standards; and Work with stakeholders to identify best practices. To accomplish these goals, the EO established a Federal interagency working group (Working Group) led by the Environmental Protection Agency (EPA), the Department of Homeland Security (DHS), and the Department of Labor (DOL), and including representation of other departments and agencies involved in the oversight of chemical facility safety and security. The final report of the EO was recently released and the tri-chairs will discuss what has been accomplished during the EO and next steps.

Panelists:

- Mathy Stanislaus, Office of Solid Waste and Emergency Response, EPA
- Caitlin Durkovich, Office of Infrastructure Protection, DHS (Invited)
- David Michaels, Occupational Safety and Health Administration, DoL (Invited)

TECHNICAL SESSIONS

Waste-to-Energy Topics and Landfill Gas Issues

ENER/WAST-ThurPM1

Room: CC 103A

6/26/2014 2:00 PM

Platform

TCC: WMB

Chair: David Greene, SCS Engineers

Vice Chair: David Minott, Arc5 Environmental Consulting, LLC

2:00 PM

Improved Techniques for Measuring and Validating Siloxanes Present in Landfill and Digester Biogas

Paper#: 33331

B. Marshik, P. Zemek; MKS Instruments, Methuen, MA

2:20 PM

Producing Electricity from Landfill Gas

Paper#: 33255

E. Bourbour Ajdari, I. Leevongwat, P. Rastgoufard, B. Kura; The University of New Orleans, New Orleans, LA

2:40 PM

Continuous Performance Monitoring of Waste to Energy Boilers Is Almost a Reality

Paper#: 32934

R. E. Sommerlad¹, S. G. Deduck², F. Hassreliis³; ¹Robert E. Sommerlad, P.E., Gurnee, IN, ²Covanta Energy Corporation, Morristown, NJ, ³Hasselriis Associates, Forest Hills, NY

AERMOD Modeling Issues

AIRS/REGU-ThurPM2

Room: CC 201

6/26/2014 4:00 PM

Platform

TCC: APM

Chair: Jesse Thé, Lakes Environmental Software

Vice Chair: Ron Petersen, CPP, Inc.

4:00 PM

Challenges for Modeling Compliance with Short-term SO₂, NO₂, and PM_{2.5} Ambient Standards

Paper#: 33016

B. Paine, D. Heinold; AECOM, Chelmsford, MA

4:20 PM

Improving Profiling Methods for AERMOD with Abrupt Surface Condition Changes

Paper#: 32234

H. Liu¹, J. Liu², P. A. Taylor³, W. Weng³; ¹Dillon Consulting, Oakville, ON, ²Ontario Ministry of the Environment, Toronto, ON, ³York University, Toronto, ON

4:40 PM

Innovative Dispersion Modeling Practices to Achieve a Reasonable Level of Conservatism in AERMOD Modeling Demonstrations

Paper#: 33243

S. A. Guerra¹, L. A. Bartels²; ¹Wenck Associates Inc., Woodbury, MN, ²Wenck Associates, Inc., Minneapolis, MN

5:00 PM

AERMOD Sensitivity to AERSURFACE Moisture Conditions and Temporal Resolution

Paper#: 33252

A. J. Schroeder; Trinity Consultants, Indianapolis, IN

5:20 PM

Variable Emissions in Air Quality Modeling

Paper#: 32890

B. Barfield¹, R. Hamel², M. E. Garrison³; ¹Environmental Resources Management (ERM), Raleigh, NC, ²ERM, Boston, MA, ³Environmental Resources Management, Ardmore, PA

5:40 PM

Emissions Variability Processor (EMVAP): Design, Evaluation, and Application

Paper#: 33018

R. Paine¹, D. Heinold¹, E. Knipping², N. Kumar³, C. Szembek¹; ¹AECOM, Chelmsford, MA, ²EPRI, Washington, DC, ³EPRI, Palo Alto, CA

Atmospheric Chemistry - Part 2

AIRS-ThurPM2

Room: CC 103B

6/26/2014 4:00 PM

Platform

TCC: APC

Chair: Barbara Zielinska, Desert Research Institute

Vice Chair: Vera Samburova, Desert Research Institute

4:00 PM

Measurement of Hydrofluorocarbons, Perfluorocarbons and Chlorofluorocarbons in Ambient Air by Gas Chromatography and Mass Spectrometry

Paper#: 32838

R. Bramston-Cook, E. Bramston-Cook; Lotus Consulting, Long Beach, CA

TECHNICAL SESSIONS

4:20 PM

Preliminary Back Trajectory Analysis of GrandTRENDS Reactive Nitrogen

Paper#: 33458

K. A. Gebhart¹, A. J. Prenni², M. G. Barna¹, B. Schichtel³, W. Malm⁴, D. Day, A. Sullivan, E. Levin, J. Collett Jr., K. Benedict; ¹National Park Service, Fort Collins, CO, ²National Park Service, Lakewood, CO, ³NPS, Fort Collins, CO, ⁴Colorado State University, Fort Collins, CO

4:40 PM

Spatial Representativeness of the Bogota Air Quality Monitoring Network

Paper#: 33622

O. J. Guerrero, R. Jimenez; Air Quality Research Group, Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogotá, Colombia, ²Bogota Air Quality Monitoring Network, Secretaría Distrital de Ambiente, Bogotá, Columbia

5:00 PM

Development of Emission Inventory for Forest Fires in Southeast Asia (SEA) Using Satellite Data and GIS Technique

Paper#: 33212

K. T. Nguyen, D. P. Nguyen, D. A. Permadi; Asian Institute of Technology, Pathumthani, Thailand

Climate Change Adaptation Strategies

CLIM-ThurPM2

Room: CC 202A

6/26/2014 4:00 PM

Platform

TCC: CCI

Chair: Howard Balentine, AECOM

Vice Chair: Clara Poffenberger, Bingham McCutchen

4:00 PM

Adaptation in an Era of Climate Change

Paper#: 33265

H. W. Balentine; AECOM, Camarillo, CA

4:20 PM

Minimizing Industry's Climate Change Risks by Implementing Climate Adaptation Plans

Paper#: 33475

D. Pittman; AECOM, Camarillo, CA

4:40 PM

Industry Co-benefits of Integrating GHG, Air Quality, and Climate Change Adaptation Strategies

Paper#: 33357

Y. Sultana, K. Madry; ERM, Bakersfield, CA

5:00 PM

Potential Implications of IPCC's Fifth Assessment Report on Climate Change Adaptations for Municipal Infrastructures in Ontario

Paper#: 33421

J. Liu¹, H. Liu², J. Arabian³; ¹Ontario Ministry of the Environment, Toronto, ON, ²Dillon Consulting, Oakville, ON, ³University of Toronto, Toronto, ON

Emissions and Impacts from Oil and Gas Exploration and Production

O&GS/AIRS-ThurPM2

Room: CC 203C

6/26/2014 4:00 PM

Platform

TCC: AAE

Chair: Leonard Nelms, Tetra Tech, Inc.

4:00 PM

Air Quality Impact of Marcellus Shale Natural Gas Development at Two West Virginia Sites

Paper#: 33155

N. J. Pekney¹, M. McCawley², M. Reeder¹, V. Garret¹, J. Diehl¹; ¹National Energy Technology Laboratory, Pittsburgh, PA, ²West Virginia University, Morgantown, WV

4:20 PM

Quantification and Analysis of Hazardous Air Pollutant Emissions from Unconventional Oil and Gas Exploration Storage Tanks

Paper#: 33474

O. A. Oyelakin, D. Ramirez; Texas A&M University Kingsville, Kingsville, TX

4:40 PM

Monitoring and Characterization of VOCs in Ambient Air near Active Gas Wells in the Eagle Ford Shale

Paper#: 33317

G. Ogumerem, L. W. Clapp; Texas A&M University Kingsville, Kingsville, TX

5:00 PM

Benefits of Reducing Volatile Organic Compounds Emissions from Petroleum Storage Tanks in the South Coast Air Basin

Paper#: 32845

M. Pham¹, K. Ellis¹, E. Tesler²; ¹South Coast Air Quality Management District, Diamond Bar, CA, ²South Coast Air Quality Management District

TECHNICAL SESSIONS

Latest Findings in Vehicle Emissions Modeling and Measurement – Part 2

TRAN-ThurPM2
Room: CC 203A

6/26/2014 4:00 PM

Platform
TCC: OMS

Chair: Chris Frey, North Carolina State University
Vice Chair: Brandon Graver, North Carolina State University

4:00 PM

MOVES Project Level Sensitivity Analysis

Paper#: 33650

G. J. Noel; *US Department of Transportation – Volpe Center, Chelmsford, MA*

4:20 PM

In-use Activity, Fuel Use, and Emissions of Diesel Roll-off Refuse Trucks

Paper#: 33095

G. S. Sandhu¹, H. Frey¹, S. Bartelt-Hunt², E. Jones²;
¹*Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC*, ²*Department of Civil Engineering, University of Nebraska-Lincoln, Omaha, NE*

4:40 PM

Effect of Topography on Fuel Use and NOx Emissions of Hybrid and Conventional Vehicles

Paper#: 32846

G. Gonçalves¹, H. Frey², G. Duarte¹; ¹*IDMEC-IST, Lisbon, Portugal*, ²*Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC*

5:00 PM

Evaluation of Real-world Activity, Energy Use, and Emissions of a Plug-in Hybrid Electric Vehicle

Paper#: 32603

J. Hu¹, H. Frey², X. Zheng¹; ¹*North Carolina State University, Raleigh, NC*, ²*Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC*

5:20 PM

Estimating Sensitivity of Onroad Vehicle Emission Factors to Emission Standards Based on In-Use Measurement Data

Paper#: 33292

B. Liu¹, H. Frey²; ¹*North Carolina State University, Raleigh, NC*, ²*Department of Civil, Construction, and Environmental Engineering, North Carolina State University, Raleigh, NC*

Managing Corporate Liability in Nanoscale Manufacturing

NANO/INDU-ThurPM2
Room: CC 102C

6/26/2014 4:00 PM

Panel
TCC: NAN

Chair: Thomas Morahan, Greystone Strategies, LLC

Nanoscale science and engineering is developing new materials and technologies at an unprecedented pace. To address new concerns, the Air & Waste Management Association (A&WMA) Technical Council commissioned an Intercommittee Task Force (ITF) on Nanoscale Science and Engineering. The goal of the ITF is to bring societal recognition, understanding and emphasis to address the identification, understanding and mitigation of possible environmental health and safety issues associated in working at the nanoscale. Much research to date has focused on the possible health effects of new classes of engineered carbon nanotubes and other nanoparticles. As research and regulations will be in development for some time, entities involved with nanoscale manufacturing need to become proactive now to protect their workers, operating environments and communities. In some cases, the physical and chemical hazards involved in the processes themselves can be more problematic than the actual nanoparticles. For example, even in the absence of new classes of nanoparticles, facilities must struggle with the use of unusual materials with extreme properties in order to complete the manufacturing process, creating new challenges in air compliance with MACT standards, hazardous waste management issues from cleaning operations and chemical bulk storage security. In many cases, new chemicals, gases and processes will be found; hazardous properties will need to be understood, workable regulatory frameworks must be placed into effect, and manufacturers will need to operate accordingly. The matters will challenge EHS leaders in R&D and manufacturing and possibly force corporate business decisions based on related factors such as time-to-market and pricing that grow out of liability and compliance management concerns. New developments in nanoscale environmental policy, measurement, health effects, monitoring, management, and safety issues that can affect the short and long-term management of corporate liability will be presented. Particular emphasis will be placed on EHS liability management in R&D, pilot process EHS, and issues in scaling to up production in the absence of a predictable global regulatory environment in nanotechnology manufacturing.

Panelists:

- Thomas Morahan, Greystone Strategies, LLC
- Paul Durkin, Alent
- Chris McCormack, Pullcom
- Sherrie Elzey, TSI Incorporated

TECHNICAL SESSIONS

Mercury Control Technologies and Strategies II

POWR-ThurPM2

Room: CC 101B

6/26/2014 4:00 PM

Platform

TCC: AAC

Chair: Sharon Sjostrom, ADA-ES, Inc.

4:00 PM

Understanding Mercury Oxidation During Coal Combustion

Paper#: 33381

S. Lee; Chungbuk National University, Cheongju, South Korea

4:20 PM

Volume Resistivity Inferred Differential Collection of Fly Ash and PAC Within a Wire-tube ESP

Paper#: 33660

E. Lee¹, H. Clack²; ¹Illinois Institute of Technology, Dekalb, IL,

²University of Michigan, Ann Arbor, MI

4:40 PM

Enhanced Photocatalytic Adsorption of Elemental Mercury (Hg⁰) by Modified Photocatalyst TiO₂ in Simulated Flue Gases of Coal-fired Power Plant

Paper#: 32954

H. Shen¹, I. Ie², C. Yuan², W. Chen², C. Hung³, S. Yang²;

¹Kaohsiung, Taiwan, ²Institute of Environmental Engineering, National Sun Yat-Sen University, Kaohsiung City, Kaohsiung, Taiwan, ³Department of Safety, Health and Environmental Engineering, National Kaohsiung First University, Kaohsiung City, Kaohsiung, Taiwan

Mini-Symposium Panel: Review of Mini-Symposium Sessions - Impacts of Transportation Hubs & Ports

MINI-ThurPM2

Room: CC 101A

6/26/2014 4:00 PM

Panel

TCC: OMS

Chair: Michael Claggett, U.S. Department of Transportation, Federal Highway Administration

Vice Chair: Heidi Rous, PCR Services Corp

This panel session is the concluding session of the three-day Mini-Symposium on Impacts of Transportation Hubs & Ports. Respective session chairs and vice chairs will constitute this panel to review technical issues raised in their sessions. Topics include transportation sources (freight and dray trucks, ships, locomotives, and aircraft); Long Beach and Los Angeles ports; emission reduction measures; analysis techniques; diesel emissions; greenhouse gas and sustainability; regulatory policy and compliance; air quality in the vicinity of Los Angeles

International Airport; and health and community impacts.

Panel members will highlight major points of discussion in their sessions, followed by questions-and-answers and open discussions with the audience.

Panelists:

- *Chairs/Vice-Chairs of the week's Mini-Symposium sessions*
-

NOx Control Technologies and Strategies II

INDU/O&GS-ThurPM2

Room: CC 102A

6/26/2014 4:00 PM

Platform

TCC: AAC

Chair: Minh Pham, South Coast Air Quality Management District

Vice Chair: Laki Tisopulos, South Coast Air Quality Management District

4:00 PM

ClearSign Demonstrates Sub 5 PPM NOx and CO Without SCR, FGR, or High Excess Air

Paper#: 33165

J. Colannino; ClearSign Combustion Corporation, Tukwila, WA

4:20 PM

Best Practices for In-situ SOx & NOx Emission Control in FCC

Paper#: 33231

B. de Graaf¹, P. Andersen², T. Hochheiser¹; ¹Johnson Matthey-Intercat, Sea Girt, NJ, ²Johnson Matthey, Audubon, PA

4:40 PM

Effects of Magnetic Fields on the Improvement of De-NO Efficiency of SCR with NH₃ on Iron-based Catalyst in a Fluidized Bed

Paper#: 31771

K. Gui¹, G. Yao²; ¹College of Energy & Environment, Southeast University, Nanjing, China, ²Nanjing University of Technology, Nanjing, China

5:00 PM

CLN with SCR as an Emission Control System in CHP Plants Should Meet 2 PPM NOx

Paper#: 33051

D. Cheng, C. Cheng, H. Leong, J. Mundra; Cheng Power Systems Mountain View, CA

TECHNICAL SESSIONS

5:20 PM

Gas Turbine Exhaust Energy Impacts on Achievement of and Times to Catalyst Activation Temperatures

Paper#: 32989

J. M. Haywood, R. Kagolanu; Siemens Energy, Inc., Orlando, FL

Recent Developments in Implementing BACT

REGU-ThurPM2

Room: CC 103C

6/26/2014 4:00 PM

Panel

TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates Inc.

Vice Chair: Derek McDonald, Baker Botts LLP

More so than by advancements in air pollution control technologies, implementation of the Best Available Control Technology (BACT) requirement under the Prevention of Significant Deterioration (PSD) program has been affected by case law, by changes in regulations and policy, and by the novel approaches being used by citizen petitioners. Some of these developments have arisen in connection with the regulation of Greenhouse Gas (GHG) emissions, but the issues discussed on this panel will not be specific to GHG. Issues that will be addressed include the following: To what extent does the BACT analysis reach beyond the emitting equipment, and how (if at all) is this different for new sources and for modifications? To the extent that energy efficiency measures will reduce fuel consumption at a stationary source, how should those measures be considered in establishing BACT? How does the BACT and LAER requirements overlap? How can a permitting authority balance its mandate to consider cleaner fuels with its duty to make a BACT determination for the facility described in the permit application? Role of the EPA's guidance and permit comment process in regard to BACT review. When, if ever, is it appropriate for EPA to question a state's BACT determination in the context of its review of a Title V operating permit? To what extent should emissions from malfunctions be addressed in establishing BACT? Use of the EPA's control cost manual for establishing cost effectiveness. In addition to the issues identified above, the EPA's regulation of GHG raise several PSD permitting related issues such as: general permit, category specific BACT, BACT based exemptions etc. Panelist will have expertise in both technical and regulatory/statutory requirements and hands on experience in developing and implementing the BACT process.

Panelists:

- Gurinder Saini, RTP Environmental Associates Inc.
- Raj Rao, EPA
- Hal Robbins, Bison Engineering Inc.

Topics in Visibility Monitoring

AIRS-ThurPM2

Room: CC 102B

6/26/2014 4:00 PM

Platform

TCC: APV

Chair: Jenny Hand, Colorado State University

Vice Chair: Kip Carrico, AECOM

4:00 PM

Optical and Particle Sizing Properties of Fresh Biomass Smoke

Paper#: 33291

C. M. Carrico¹, V. R. Scheetz¹, S. M. Kreidenweis², E. J. Levin², G. R. McMeeking³; ¹AECOM, Fort Collins, CO, ²Colorado State University, Fort Collins, CO, ³Droplet Measurement Technologies, Boulder, CO

4:20 PM

Reductions in Haze Across the United States Since the Early 1990s

Paper#: 33434

J. L. Hand¹, B. Schichtel², W. Malm¹, S. Copeland¹, J. Molenaar³, N. Frank⁴, M. Pitchford⁵; ¹Colorado State University, Fort Collins, CO, ²NPS, Fort Collins, CO, ³Air Resource Specialists, Fort Collins, CO, ⁴EPA, Research Triangle Park, NC, ⁵Desert Research Institute, Reno, NV

4:40 PM

Wavelength-dependent Opacity Measurement and Uncertainty Using Digital Cameras and Smartphones

Paper#: 32347

W. Yuen¹, Y. Gu¹, M. J. Rood², S. Koloutsou-Vakakis¹, K. Mattison³, B. Franek³; ¹University of Illinois Urbana-Champaign, Urbana, IL, ²Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign, Urbana, IL, ³Illinois Environmental Protection Agency, Des Plaines, IL

5:00 PM

Success Stories Using EPA Alternative Method 082 (Digital Camera Opacity Technique)

Paper#: 32931

S. D. Dolan, A. Dolan; Virtual Technology LLC, Rio Rico, AZ

5:20 PM

EPA Alternative Method 082, Modernizing Visible Emissions Monitoring

Paper#: 30710

S. D. Dolan, S. Hicks; Virtual Technology LLC, Rio Rico, AZ

TECHNICAL SESSIONS

Waste Digestion and Composting

WAST/ENER-ThurPM2

Room: CC 103A

6/26/2014 4:00 PM

Platform

TCC: WMB

Chair: Lee Lundberg, Bedrock Enterprises, Inc.

Vice Chair: David Greene, SCS Engineers

4:00 PM

Investigation of How Microbes Involved in Anaerobic Digestion of Vinasse Change as Functions of Temperature, Vinasse Composition, and Time

Paper#: 33371

M. S. Sabnis¹, M. L. Sattler², S. Rahman; ¹University of Texas at Arlington, Arlington, TX, ²Civil Engineering, University of Texas at Arlington, Arlington, TX

4:20 PM

Development of Linear Regression Models for Predicting Methane and Water Quality Parameters from Anaerobic Treatment of Vinasse

Paper#: 33194

S. Rahman¹, M. Sattler², M. S. Sabnis²; ¹University of Texas at Arlington, Hurst, TX, ²University of Texas at Arlington, Arlington, TX

4:40 PM

Long-Term Performance of Thermophilic AD of OFMSW Under Induced Operational Disturbances

Paper#: 32986

S. Ghanimeh¹, M. El-Fadel², P. Saikaly³, D. Al-Sanioura⁴; ¹Notre Dame University-Louaize, Zouk Mosbeh, ²Department of Civil and Environmental Engineering, American University of Beirut, Beirut, Lebanon, ³Water Desalination and Reuse Research Center, and Division of Biological and Environmental Science and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia, ⁴American University of Beirut, Beirut, Lebanon

5:00 PM

Options for Utilization of Biogas from Anaerobic Digestion

Paper#: 33814

L. A. Lundberg; Bedrock Enterprises, Inc., Baden, PA

5:20 PM

Permitting for Clean Air

Paper#: 33351

M. Nickerson¹, S. Pankenier¹, P. Stout¹, J. Bogg²; ¹Cornerstone Environmental Group, LLC, Dublin, CA, ²Zero Waste Energy, LLC, Lafayette, CA

TECHNICAL SESSIONS

Friday, June 27, 2014

Industry Focus	Session ID	Session Title	TCC(s)	Session Format
8:00 am - 9:40 am				
	POWR-FriAM1	Acid Gas and SO ₂ Control	AMC	Platform
	REGU-FriAM1	Air Toxics Regulations	REG	Panel
	AIRS-FriAM1	Alternative Models and Application	AAE	Platform
	AIRS-FriAM1	Ambient Monitoring Surveys	AAE	Platform
 	ENER/WAST-FriAM1	Bioenergy: Feedstocks and Deployment	WMB	Platform
 	AIRS/WAST-FriAM1	Emissions from Water Treatment and MSWI	AAE	Platform
9:40 am - 10:10 am			Session Break	
10:10 am - 11:50 am				
	H&EE-FriAM2	NASA Satellite Measurements for Health and Air Quality Applications	HEE	Panel
 	YOUN/EDUC-FriAM2	Mini Train-the-Trainer Workshop	EDC	Panel
	AIRS-FriAM2	Ozone Monitoring	AAE	Platform
 	INDU/TRAN-FriAM2	The Use of Geographic Information System (GIS) for Environmental Management	RAM	Panel
	TRAN-FriAM2	Utility Products and Services to Facilitate the Use of Clean Transportation and Viability of Commercial and Residential Equipment	IFB	Panel
 	AIRS/TRAN-FriAM2	Vehicle and Engine Emissions and Controls	AAE	Platform

Program Key			Program Key		
Track ID	Industry/Environmental Focus		Track ID	Industry/Environmental Focus	
	AIRS	Air-Measurements and Basic Science		SUST	Sustainability
	EDUC	Education		TRAN	Transportation
	ENER	Renewable Energy		WAST	Waste Management
	FEDS	Federal		LOCA	Local Topic
	H&EE	Health & Environmental Effects		YOUN	Young Professionals
	INDU	Heavy Industry and General Manufacturing		POWR	Power Generation
	MINI	Mini-Symposium on Transportation Hubs & Ports		NANO	Nanoparticles
	O&GS	Oil & Gas		CLIM	Climate Change
	REGU	Regulatory			

TECHNICAL SESSIONS

Friday, June 27, 2014

Acid Gas and SO₂ Control

POWR-FriAM1
Room: CC 102A

6/27/2014 8:00 AM

Platform
TCC: AAC

Chair: Jim Dickerman, Lhoist North America

8:00 AM

A High Reactive Hydrate for Challenging DSI Applications

Paper#: 30744

P. G. Mongoven, C. Biehn, Eric VanRens;
Mississippi Lime, Inc., Saint Louis, MO

8:20 AM

Improved DSI Performance with Optimized Hydrated Lime

Paper#: 33477

J. Dickerman; Lhoist North America, Laguna Beach, CA

8:40 PM

Dynamic, Flexible Abatement of Sulfur Dioxide and Nitrogen Oxides from Power Plants

Paper#: 32784

E. McDonald-Buller¹, Y. Kimura¹, M. Craig¹, M. Webster², G. McGaughey¹, D. T. Allen¹, G. McGaughey¹; ¹*University of Texas at Austin, Austin, TX,* ²*Massachusetts Institute of Technology, Cambridge, MA*

9:00 AM

Role of Fuel Mix and Its Implications on Meeting Hydrogen Chloride MACT Limit for Biomass Boilers

Paper#: 33668

R. V. Iyer; Golder Associates, Inc, Gainesville, FL

Air Toxics Regulations

REGU-FriAM1
Room: CC 101B

6/27/2014 8:00 AM

Panel
TCC: REG

Chair: Paul Siebert, Weston Solutions, Inc.

In response to the time consuming and litigated process of individually listing hazardous air pollutants and developing risk-based National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 61, the Clean Air Act Amendments of 1990 (CAAA) established a technology-based approach. The CAAA included a list of hazardous air pollutants (HAPs) in Section 112(b) of the Clean Air Act (CAA) and required development of NESHAPs for Source Categories emitting those pollutants based on the available air pollution control

technology. Because these NESHAPs, promulgated under 40 CFR 63, are required to implement the maximum achievable control technology (MACT), as defined in the CAA for new and existing sources, these NESHAPs for Source Categories are commonly called MACT standards. The CAA also defines a major source of HAPs as one emitting at least 10 tons per year (tpy) of any individual HAP or 25 tpy of all HAPs combined. Most of the MACT standards promulgated first addressed only major or point sources of HAPs, although some also addressed area sources that do not exceed that threshold. More recently, a number of area source standards have been promulgated. EPA has been under court-ordered schedules for many major (point) and area source MACT standards. In addition, a number of recent court rulings have vacated or remanded MACT standards, in part or in whole, returning them to EPA for revisions, generally regarding exclusion of certain categories of sources from consideration. Finally, Section 112(f) of the Clean Air Act (CAA) requires EPA to evaluate the residual risks remaining after the application of MACT standards. This assessment is required to be completed within eight years after the promulgation of each MACT standard. If the technology-based MACT standards have not sufficiently reduced health risk, additional standards must be promulgated to reduce the residual risk in order to provide an ample margin of safety to protect public health or to prevent adverse environmental effects. These evaluations and subsequent standards development have been completed and promulgated for some source categories and are being conducted or have been proposed for others. This panel session will present views of EPA, State agencies, industry and environmental advocates on the status, directions and expectations regarding maximum achievable control technology (MACT) standards under 40 CFR 63, as well as air toxics regulations of other jurisdictions – local, state, and national. Representatives of EPA, state and other environmental agencies, industry and environmental advocacy groups will present and discuss the status of MACT standards, with particular emphasis on the current issues of the Boiler MACT, RICE MACT, area sources, ongoing court cases, and residual risk. The panel may address the progress and problems with implementation of the promulgated standards and the status and results of court decisions. A major focus will be an update on the ongoing development and implementation of the area source and residual risk standards. Alternative hazardous/toxic air pollutant programs by states and other nations are also of interest.

Panelists:

- *Paul Siebert, Weston Solutions, Inc.*
- *Joshua Marteny, Dixon Environmental*
- *Debbie Mulrooney, DuPont*
- *Wanda Pemberton, EPA, OAQPS, SPDD*
- *Emma Cheuse, Earth Justice*

TECHNICAL SESSIONS

Alternative Models and Application

AIRS-FriAM1

Room: CC 103A

6/27/2014 8:00 AM

Platform

TCC: AAE

Chair: Pietro Catizone, TRC Environmental Corp.

Vice Chair: Harish Rao, Rao Consulting Services

8:00 AM

Predictive Emissions Monitoring for Air Compliance and Process Optimization

Paper#: 33432

B. G. Swanson¹, E. A. Simon²; ¹CMC Solutions L.L.C., Farmington Hills, MI, ²CMC Solutions LLC, Farmington Hills, MI

8:20 AM

Inverse Pollutant Transport Modelling for Fugitive Emissions

Paper#: 33526

I. M. Joynes¹, M. R. Johnson²; ¹Carleton University, Deep River, ON, ²Carleton University, Ottawa, ON

8:40 AM

Bayesian Estimation of Methane Emission Rates from a Single High-Frequency Gas Sensor

Paper#: 32915

J. D. Albertson¹, S. Ferrari¹, G. Katul¹, T. A. Foster-Wittig¹, E. Thoma²; ¹Duke University, Durham, NC, ²EPA, Research Triangle Park, NC

Ambient Monitoring Surveys

AIRS-FriAM1

Room: CC 101A

6/27/2014 8:00 AM

Platform

TCC: AAE

Chair: Leonard Nelms, Tetra Tech, Inc.

8:00 AM

Inter-annual Variability of Wintertime PM_{2.5} Chemical Composition in Xi'an, China: Evidences of Changing Source Emissions

Paper#: 32852

H. Xu¹, J. Cao, J. Chow²; ¹Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China, ²Desert Research Institute, Reno, NV

8:20 AM

Source Apportionment of PM_{2.5} Based on Molecular Organic Markers in Monterrey, Mexico

Paper#: 33604

Y. Mancilla, A. Mendoza; ITESM, Campus Monterrey, Monterrey, Mexico

8:40 AM

Aerosol Particles at a High-altitude Site on the Southeast Tibetan Plateau, China: Implications for Pollution Transport from South Asia

Paper#: 33378

Z. Zhao¹, J. Cao², S. Zhenxing³; ¹Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China, ²Institute of Earth Environment, Chinese Academy of Sciences, Xi'an, China, ³Xi'an Jiaotong University, Xi'an, China

9:00 AM

Influences of Natural Fugitive Dusts Emitted from Sandlands Along a River Valley on Ambient Particulate Air Quality

Paper#: 33197

T. Li¹, C. Yuan²; ¹Kaohsiung, Taiwan, ²Institute of Environmental Engineering, National Sun Yat-sen University, Kaohsiung City, Kaohsiung, Taiwan

9:20 AM

Study of Spatial and Temporal Variation and Development of Appropriate Indicators of Ionic Components in PM in Riyadh, Saudi Arabia

Paper#: 33232

B. Alharbi¹, S. Mohammed Mujtaba², T. Husain²; ¹King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia, ²Memorial University of Newfoundland, St. Johns, NL

9:40 AM

The Challenges of Air Quality Monitoring in South Africa: The Case of the Vaal Triangle Airshed Priority Area

Paper#: 33386

N. S. Ngcukana; South African Weather Service, Pretoria, South Africa

TECHNICAL SESSIONS

Bioenergy: Feedstocks and Deployment

ENER/WAST-FriAM1

Room: CC 102C

6/27/2014 8:00 AM

Platform

TCC: WMB

Chair: David Minott, Arc5 Environmental Consulting, LLC

Vice Chair: Lee Lundberg, Bedrock Enterprises, Inc.

8:00 AM

Addressing Air Quality Issues for Biopower

Paper#: 33053

M. Carreras-Sospedra¹, J. Brouwer¹, D. Dabdub¹, R. Williams²;

¹University of California Irvine, Irvine, CA, ²California Biomass Collaborative, University of California, Davis, CA

8:20 AM

When Local Air Quality Matters: PM_{2.5} from a Community-based Biomass Gasification Plant

Paper#: 33213

O. Petrov¹, X. Bi², A. Lau², T. Sowlati²; ¹University of British Columbia, Burnaby, BC, ²University of British Columbia, Vancouver, BC

8:40 AM

Life Cycle Assessment of Application of Biomass for Co-firing

Paper#: 33389

C. Chang¹, C. Chang¹, S. Chen¹, C. Chang², D. Ji³, J. Tseng¹, Z. Hung¹, J. Shie³, Y. Chen⁴; ¹Graduate Institute of Environmental Engineering, National Taiwan University, Taipei City, Taipei, Taiwan, ²Department of International Business, Chung Yuan Christian University, Chungli City, Taoyuan, Taiwan, ³Department of Environmental Engineering, National Ilan University, Ilan, Taiwan, ⁴Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei City, Taipei, Taiwan

9:00 AM

Reuse of Spent Coffee Ground to Produce Biodiesel and Purification Material

Paper#: 33028

Y. Liu¹, M. Lu¹, Q. Tu²; ¹University of Cincinnati, Cincinnati, OH, ²University of Cincinnati, Newport, KY

Emissions from Water Treatment and MSWI

AIRS/WAST-FriAM1

Room: CC 102B

6/27/2014 8:00 AM

Platform

TCC: AAE

Chair: Praveen Srirama, CEMRC

Vice Chair: Asami Tanimoto, Camp Dresser & McKee

8:00 AM

Release and Removal of Chromium During Municipal Solid Waste Incineration(MSWI)

Paper#: 32501

J. Zhang, J. Qiu; State key laboratory of coal combustion, Huazhong University of Science & Technology, Wuhan, China

8:20 AM

On-site In-situ Monitoring of Greenhouse Gases Emitted From Industrial Wastewater Treatment Processes (IWWTPs)

Paper#: 33064

W. Yang¹, C. Yuan², W. Chen², S. Camara, L. Meng Dan, H. Chung-Hsuang, Y. Ying-Hsien; ¹Institute of Environmental Engineering, National Sun Yat-sen University, Kaohsiung City, Kaohsiung, Taiwan, ²Institute of Environmental Engineering, National Sun Yat-sen University, Kaohsiung City, Kaohsiung, Taiwan

8:40 AM

Quantification of Fugitive Emissions from a Biosolids Lagoon

Paper#: 33441

L. Zhang¹, P. Shariaty², C. Brown³, Z. Hashisho², S. Cho⁴, J. Wilson³; ¹University of Alberta, Edmonton, AB, ²Civil and Environmental Engineering Department, University of Alberta, Edmonton, AB, ³Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, AB, ⁴Clean Energy Policy Branch, Policy Division, Alberta Environment and Sustainable Resource Development, Government of Alberta, Edmonton, AB

9:00 AM

Mitigation of Air Emissions from Swine Buildings Through the Photocatalytic Technology Using UV/TiO₂

Paper#: 33489

Z. Liu; Kansas State University, Manhattan, KS

TECHNICAL SESSIONS

A&WMA Environmental Education Resource Guides (EERGs): Mini Train-the-Trainer Workshop

YOUN/EDUC-FriAM2
Room: CC 103C

6/27/2014 10:10 AM

Panel
TCC: EDC

Chair: Joann Held, Air Toxics Analysis Services
Vice Chair: Richard Watson, SCAQMD

This session will introduce attendees to the wealth of environmental education materials available from A&WMA, with a focus on the Environmental Education Resource Guides (EERGs). The focus is more in depth than the earlier introductory session on Tuesday. This session is designed to introduce the Presenter's Manual and to guide attendees in their preparation and implementation of Teacher Workshops to train elementary and secondary education teachers on environmental basics and issues. It will also suggest ways to run a Train-the-Trainer Workshop to prepare local A&WMA members to give Teacher Workshops. Hands-on experience with a sample of exercises contained in the EERGs will be included to give attendees the confidence to go out and host Teacher Training and Train-the-Trainer Workshops through local A&WMA Sections and Chapters. A limited number of the A&WMA Teacher Workshop Presenter's Manuals will also be available. The Manual guides the user through every step of the process from planning an event through sample workshop agendas and more. The sample lessons in this session will be drawn from the Nonpoint Source Water Pollution Series of EERGs. The four authors will work as a team to present this material.

Panelists:

- Joann Held, Air Toxics Analysis Services
- Violette Roberts, Mojave Desert Air Quality Management District
- Christie Robinson, Mojave Desert Air Quality Management District
- Richard Watson, South Coast Air Quality Management District

NASA Satellite Measurements for Health and Air Quality Applications

H&EE-FriAM2
Room: CC 102A

6/27/2014 10:10 AM

Platform
TCC: LHC

Chair: John Haynes, NASA
Vice Chair: Ali Omar, NASA

10:10 AM

Wildfire Smoke: An Evaluation of Enhancing AirNow with NASA Satellite Data

J. White, EPA

10:30 AM

10-Year Spatial and Temporal Trends of PM_{2.5} Concentrations in the Southeastern U.S. Estimated Using High-Resolution Satellite Data

X. Hu, Y. Liu; Emory University, Atlanta, GA

10:50 AM

Constraining Aerosol Health Impacts with Sensitivity Analysis Using the CMAQ Adjoint

D. Henze, M. Turner

11:10 AM

True Emission Factors for Western Forest Fires: Better Estimation and Usage

R. Chatfield, NASA

Ozone Monitoring

AIRS-FriAM2
Room: CC 103A

6/27/2014 10:10 AM

Platform
TCC: AAE

Chair: Lu Hu, University of Minnesota

10:10 AM

Rural Ozone Monitoring by CASTNET

Paper#: 33813

*C. Rogers¹, K. Mishoe², H. Howell², W. Barnard², M. Stewart²;
¹AMEC, Inc., Jacksonville, FL, ²AMEC, Newberry, FL*

10:30 AM

Analysis of Ozone, Particulate Matter and Precipitation pH Variability Within the Wood Buffalo Regional Municipality

Paper#: 31995

J. L. Fournier¹, T. Alexan², T. Todoruk³; ¹Suncor Energy, Calgary, AB, ²WorleyParsons Canada, Burnaby, BC, ³WorleyParsons Limited, Fountain Valley, CA

TECHNICAL SESSIONS

10:50 AM

Ozone Air Quality Management in Bangkok Metropolitan Region, Thailand: PTT Scientifically Perspective Strategies and Plans

Paper#: 33225

T. Chatchupong¹, S. Kingkaew², D. A. Permadi³, K. T. Nguyen⁴;
¹PTT Research and Technology Institute, Ayutthaya, Thailand, ²Asian Institute of Technology, Pathumthani, Thailand, ³Asian Institute of Technology (AIT), Pathumthani, Thailand, ⁴Asian Institute of Technology, Pathumthani, Thailand

11:10 AM

Meteorologically-adjusted Trend Analysis and Forecasting of Surface Ozone Concentrations at Two Monitoring Sites in Delhi, India

Paper#: 33128

J. Biswas¹, Z. Farooqui², S. Guttikunda³, S. Roychowdhury¹;
¹Indian Institute of Social Welfare and Business Management, Kolkata, India, ²University of North Texas, Denton, TX, ³Desert Research Institute, Reno, NV

11:30 AM

Evaluation of Light Duty Mobile Source Regulations on U.S. Ozone Concentration Trends

Paper#: 31520

S. Collet¹, H. Minoura¹, P. Karamchandani², T. Kidokoro³, Y. Kinugasa³, Y. Sonoda³; ¹Toyota Motor Engineering and Manufacturing, North America, Ann Arbor, MI, ²ENVIRON International Corporation, Novato, CA, ³Toyota Motor Corporation, Toyota, Aichi, Japan

The Use of Geographic Information System (GIS) for Environmental Management

INDU/TRAN-FriAM2

Room: CC 102B

6/27/2014 10:10 AM

Panel

TCC: RAM

Chair: Mohan Balagopalan, South Coast Air Quality Management District

Vice Chair: Nate Johnson, ESRI Redlands

The use of Geographical Information System (GIS) for mapping and spatial analysis for managing environmental processes is becoming a critical tool for agencies, businesses and consultants. The use of GIS for as a tool for air quality and waste management is critical to understanding the spatial relationship between the sources and the community and how emissions travel and affect the neighbors. The papers presented in this session will show how GIS is used in the managing activities at the port of Long Beach and how GIS is an essential tool in air quality management at a local air pollution agency. GIS is used to provide air quality information, create maps for compliance and enforcement and displaying communities in Environmental Justice areas impacted by air pollution.

The paper will also show how GIS is also used as a tool for risk communication, exposure studies, identifying Hot Spot Areas, conduct proximity analysis, temporal emission analysis, and proximity analysis to sensitive receptors. The paper will also show how compliance staff are using GIS on the cloud and using web services. GIS maps and analysis can be done real-time and on different portable devices such as phones and tablet.

The paper will also show how ports are using GIS to conduct Environmental Impact Reporting (summary of science in spatial domain), complying with zero-discharge sewage regulations (cruise ships in particular) and plans for pumping/holding sewage to treat before sending to port-side wastewater systems. The ports are also using GIS for identifying areas with safe shoreside power terminals and ships are required to power switch while at port, manage the solid waste and identify areas impacted by noise for those living in close proximity to ports

Panelists:

- Daniel Salto, SCAQMD
- Guy Noll, ESRI Redlands
- Lorenzo Gonzalez, Valarm
- Mark Greninger, County of Los Angeles

Utility Products and Services to Facilitate the Use of Clean Transportation and viability of commercial and residential equipment

TRAN-FriAM2

Room: CC 102C

6/27/2014 10:10 AM

Panel

TCC: IP

Chair: Laki Tisopulos, South Coast Air Quality Management District

Vice Chair: Lee Wallace, Sempra Utilities - Southern California Gas Company

Southern California Gas Company would like the opportunity to present to the esteemed members of the A&WMA a discussion on the SoCalGas/SDG&E NGV Program, the SoCalGas CNG Station Branding activity, SoCalGas Compression Services, SoCalGas BioGas Conditioning Tariff to name a few. We would also like to present and share our programs in the advancement of residential and commercial natural gas equipment to further reduce air emissions in collaboration with third party vendors and local air districts. Local air quality regulations continue to push for more stringent emissions standards to reach attainment of the state and federal ambient air quality health standards. Southern California Gas has been working with various manufacturers to participate and fund research and development projects to accelerate the advancement of the commercial, industrial, and

TECHNICAL SESSIONS

residential natural gas equipment. Furthermore, the SCAQMD Air Quality Management Plan calls for a more aggressive NOx strategy reduction that will place a high burden in any commercial, industrial, and residential combustion equipment with only marginal benefits to the air quality improvement. The predominant culprit appears to be in the transportation sector and as such, Southern California Gas Company. As southern California rebounds from the recession, a balance between air quality and economic vitality is a must. The Ports of Los Angeles and Long Beach must continue to provide the necessary transport hub to allow goods movement. Manufacturing is already a diminishing trade and as we seek out to improve the livelihood of our communities, the need to import and export goods will require the most practical and sustainable supply chain.

Panelists:

- Noel Muyco, *Sempra Utilities - Southern California Gas Company*
- Edwin Harte, *Sempra Utilities - Southern California Gas Company*
- Steven Simons, *Sempra Utilities - Southern California Gas Company*
- Lee Wallace, *Sempra Utilities - Southern California Gas Company*
- Jim Lucas, *Sempra Utilities - Southern California Gas Company*

Vehicle and Engine Emissions and Controls

AIRS/TRAN-FriAM2
Room: CC 101B

6/27/2014 10:10 AM

Platform

TCC: AAE

Chair: Yevgen Nazarenko, McGill University

10:10 AM

Characterization of Regulated Pollutants and Ammonia Emissions from Current Model Year Heavy-duty Goods Movement Vehicles

Paper#: 32962

A. Thiruvengadam¹, M. Besch¹, D. Carder¹, M. Gautam¹, A. Oshinuga², S. Pradhan, P. Thiruvengadam; ¹West Virginia University, Morgantown, WV, ²South Coast Air Quality Management District, Diamond Bar, CA

10:30 AM

Determination of Suspended Exhaust pm Mass for Light Duty Vehicles Using IPSP Method

Paper#: 31978

Y. Li¹, K. Johnson¹, T. Durbin¹, S. Hu², H. Jung¹, X. Wang³; ¹CE-CERT, University of California Riverside, Riverside, CA, ²Monitoring and Laboratory Division, California Air Resources Board (CARB), Sacramento, CA, ³Desert Research Institute, Reno, NV

10:50 AM

Best Available Control Technology Analysis for Formaldehyde Emissions from Landfill Gas Engines - Industry and Regulators Working Together to Find a Compliance Solution

Paper#: 33509

R. A. Ramos; Cornerstone Environmental Group, LLC, Plymouth, WI

11:10 AM

Control of Air Pollution from Portable Generator under Regulated Condition

Paper#: 33535

G. R. Ana¹, P. Adegbola², J. Olamijulo²; ¹University of Ibadan, Ibadan, Nigeria, ²Environmental Health Students Association of Nigeria, Ibadan, Nigeria

PERSONAL SCHEDULE WORKSHEET

Use this worksheet to plan each day's schedule.

Time	Tuesday June 24	Wednesday June 25	Thursday June 26	Friday June 27
7:00 a.m.				
7:20 a.m.				
7:40 a.m.				
8:00 a.m.				
8:20 a.m.				
8:40 a.m.				
9:00 a.m.				
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6:30 p.m.				
7:00 p.m.				
7:30 p.m.				
8:00 p.m.				
8:30 p.m.				

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Thursday, June 26
8:00AM - 10:00AM

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Director Rod Gravley

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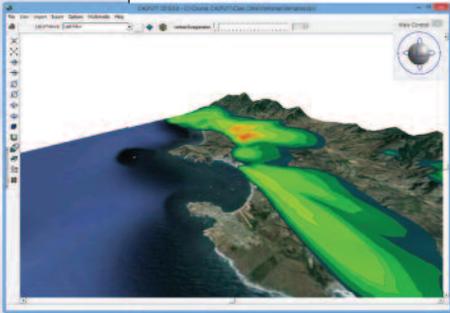
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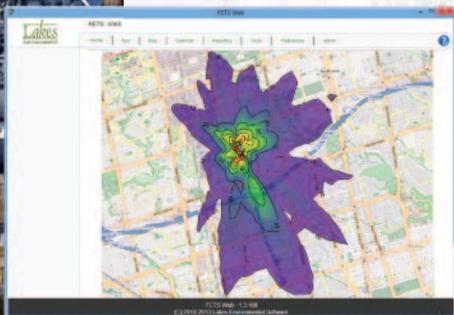
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