

United States  
Environmental Protection  
Agency

Risk Reduction  
Engineering Laboratory  
Cincinnati, OH 45268  
Edison, NJ 08837

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Research and Development

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# **19th Annual RREL Hazardous Waste Research Symposium**

***April 13 - 15, 1993  
The Westin Hotel  
Cincinnati, OH***



## CONFERENCE HIGHLIGHTS

### Plenary Session I

Tuesday, April 13, 1993 • 8:30 am

### Plenary Session II

"The Technical Issues of Siting Temporary and  
Permanent Hazardous Waste Incinerators"

Thursday, April 15, 1993 • 10:30 am

## *SYMPOSIUM REGISTRATION*

### Preregistration Deadline • March 26

(After March 26, Registration will take place  
onsite)

Mail to:

SAIC

Attn: Technology Transfer Dept.  
501 Office Center Drive, Suite 420  
Ft. Washington, PA 19034

Fax to:

SAIC - (215) 628-8916

Inquires:

SAIC - 1-800-783-3870

in PA (215) 628-9317

1 pm - 3 pm ET, Monday, Wednesday, Friday

## *HOTEL RESERVATIONS*

### Deadline • March 26

Mail to:

The Westin Hotel  
at Fountain Square  
Cincinnati, OH 45202  
Telephone (513) 621-7700

*Please use the symposium and hotel registration forms  
in this brochure.*

## Objective of the Symposium

A program of papers, panel discussions, and poster displays will be presented outlining state-of-the-art findings from research funded by EPA's Risk Reduction Engineering Laboratory (RREL). In addition, this year presentations will be made by the following Hazardous Substance Research Centers:

- ✓ Northeast
- ✓ Great Plains-Rocky Mountain
- ✓ South and Southwest
- ✓ Western Region
- ✓ Great Lakes and Mid-Atlantic.

Projects funded by RREL's Superfund Technology Demonstration Division cover topics including:

- Superfund Innovative Technology Evaluation (SITE) demonstrations
- SITE Emerging Technology Program
- Leak prevention and corrective action for underground storage tanks.

Projects funded by RREL's Waste Minimization, Destruction and Disposal Research Division include:

- Pollution prevention
- Thermal destruction
- Municipal solid waste and residuals management.

Projects funded by RREL's Water and Hazardous Waste Treatment Research Division cover topics including:

- Chemical/physical treatment options
- Innovative treatment processes
- Field evaluations of hazardous waste treatment technologies
- Biological technologies.

Projects funded by RREL's Drinking Water Research Division include:

- Drinking water treatment/management
- Corrosion
- Organics removal
- Health effects
- Ultrafiltration

In general, papers will report the results of completed projects. Poster displays will cover recently initiated and ongoing research projects. Panel discussions will take place on a variety of research activities.

## Who Should Attend

Federal, state and local agency personnel, consultants, researchers, equipment manufacturers, and services suppliers involved in hazardous waste management.

## Symposium Registration

A registration form is included in this brochure. There is no registration fee, but all attendees must register either by mail or onsite. Registration will be held at the hotel on Monday, April 12, 6:00 pm to 8:30 pm, and Tuesday, April 13, beginning at 7:00 am.

Attendees who arrive on Monday are invited to: "Meet the RREL Professional Staff" Reception (cash bar) 6:00 pm to 9:00 pm in the Presidential Ballroom.

## Hotel Registration

The Symposium will be held at the Westin Hotel in downtown Cincinnati. These special room rates will be in effect:

**Government Rate \$64** (*must show government ID at check-in*)

**Conference Rate \$102**

These rates do not include sales tax. Rooms will be assigned on a first-come, first-serve basis from a reserved block. Rooms not assigned from the block by March 26, 1993 will be released, and reservations after that will be handled on a space-available basis.

A hotel reservation form is included in this brochure. By completing this form, and sending it directly to the hotel, your reservations will be guaranteed for late arrival. You may make your reservations by phone (513) 621-7700. If you telephone reservations, be sure to mention that you will be attending the EPA Research Symposium so that you qualify for the special room rate.

## Program Overview

The Symposium will be in session from 8:30 am to 5:00 pm on Tuesday, April 13, and Wednesday, April 14, and from 8:30 am to 12:00 noon on Thursday, April 15. There will be two Plenary Sessions.

The first Plenary Session will be held on Tuesday morning, followed by concurrent sessions for Papers (Sessions A & B) and Panel Discussions (Session C). The second Plenary Session will take place on Thursday morning, following the last paper presentation.

Posters will be on display for the duration of the Symposium but will be showcased at two Poster Sessions scheduled from 2:30-3:30 pm on Tuesday and Wednesday. During the poster sessions, researchers will be on hand to discuss their projects with interested attendees.

## Optional Luncheons

There are many restaurants within walking distance of the hotel; however, you may choose to have lunch at the hotel with other attendees. Full-course, self-serve luncheon buffets are offered on Tuesday, April 13 and Wednesday, April 14.

If you choose either of these optional luncheons, a check for \$17 per lunch (includes tax and gratuity) made payable to SAIC, must accompany your registration form. Lunch orders and checks must be received no later than March 26, 1993.

## Optional Dinner and Movie at Union Terminal

On Tuesday, April 13, an evening social event is planned at Union Terminal, an art deco train station/multiple museum complex. Dinner will be served in a private dining room used by the Cincinnati Railroad Barons.

Following dinner, participants will have the option of seeing "Antarctica" at the Omnimax Theatre housed at the Terminal. The cash bar begins at 6:00 pm and dinner will be served at 6:30 pm. The movie begins at 8:00 pm.

The cost of the dinner is \$25 (includes tax and gratuity). This includes a full-course dinner with choice of chicken with rosemary/mustard sauce or roast pork loin with sauteed apples. The cost of the Omnimax movie is \$5.50.

Transportation to and from the Terminal will be the responsibility of each attendee. Directions will be provided onsite. Attendees who wish to attend must check the appropriate spaces on the registration form, choose a dinner entree, and submit the form with a check for the fee, made payable to SAIC. Reservations must be made by March 26, 1993.

Refunds will be made only for those cancellations received by March 26 and will be sent out approximately one month after the Symposium.

## Tours

This year's program offers four optional tours:

**EPA's Center Hill Research Facility for Solid and Hazardous Waste Research** — this facility includes the chemical solidification/stabilization lab, other geotechnical labs, soils decontamination research, and site remediation studies.

**EPA's Test and Evaluation (T&E) Facility** — this facility provides EPA's Cincinnati-based laboratories with the capability to study the treatment of municipal and industrial pollutants. The research capabilities are also open to state and local governments, business, industry, and colleges through cooperative agreements.

**EPA's Research Containment Facility** — this building is the Agency's first self-contained, freestanding, high-hazard facility dedicated to safely performing research and development on toxic and hazardous materials.

**DOE's Fernald Environmental Management Project** — Fernald is a former DOE uranium processing facility. The tour will be an overview of the ongoing environmental management project.

The fee for each tour is \$5.00. This fee will be collected onsite when you sign up at the tour sign-up desk. More information will be provided at the symposium.

### Other Special Activities

During the Symposium, EPA exhibits and databases will be on display. Videotapes will be shown on special topics and a publication order form will be available to order EPA documents.

Attendees may use a designated hotel conference room for small meetings (up to 12 people). A sign-up sheet for scheduling will be available onsite.

### Abstract Proceedings

An Abstract Proceedings will be produced and each registered attendee will receive a copy. If you will not be attending the Symposium, but would like a copy of the Abstract Proceedings, check the appropriate box on the Registration Form.



**Symposium Registration to SAIC**  
*Preregistration Deadline - March 26, 1993*

**Hotel Reservations to the Westin Hotel**  
*Deadline - March 26, 1993*

Hotel Rates

\$64 - Government

\$102 - Conference

**Monday, April 12**

*Registration, Gibson Foyer - 6:00-8:30 pm*

*Cocktail Reception (Cash Bar),*

*Presidential Ballroom - 6:00-9:00 pm*

**Tuesday, April 13**

*Registration, Gibson Foyer - begins at 7:00 am*

*Conference Program Begins -*

*Plenary Session I - 8:30 am*

*Luncheon at Hotel (optional) \$17.00*

*Poster Session, Presidential Ballroom -*

*2:30 - 3:30 pm*

*Cocktail Reception (Cash Bar),*

*Presidential Ballroom - 5:00-7:00 pm*

*Dinner at Union Terminal (optional)*

*6:00 pm - \$25.00*

*Omnimax Movie "Antarctica", at*

*Union Terminal (optional), 8:00 pm - \$5.50*

**Wednesday, April 14**

*Luncheon at Hotel (optional) \$17.00*

*Poster Session, Presidential Ballroom -*

*2:30 - 3:30 pm*

*Cocktail Reception (Cash Bar),*

*Presidential Ballroom - 5:00-7:00 pm*

**Thursday, April 15**

*Plenary Session II - 10:30 am*

*Meeting Adjourns - Noon*



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**Driving Directions to Westin Hotel -  
Cincinnati, OH**

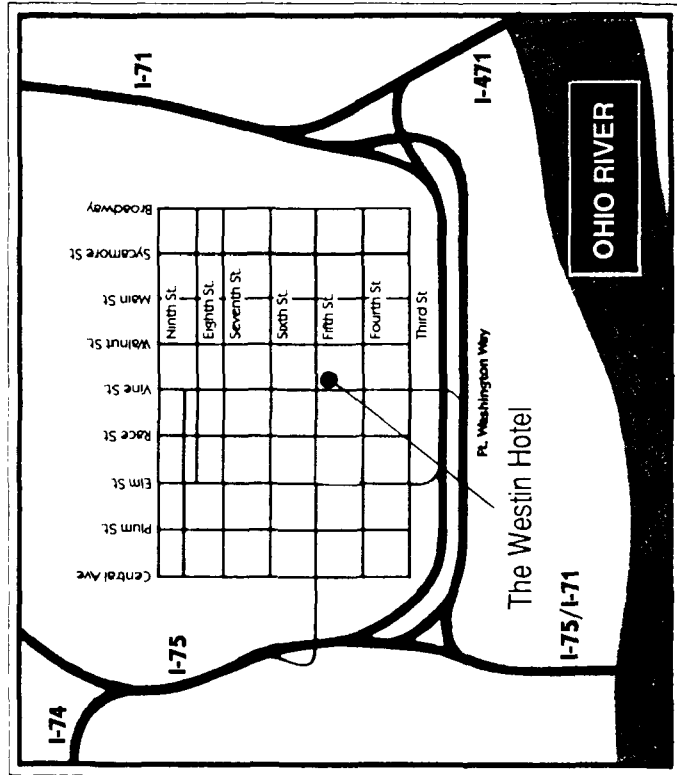
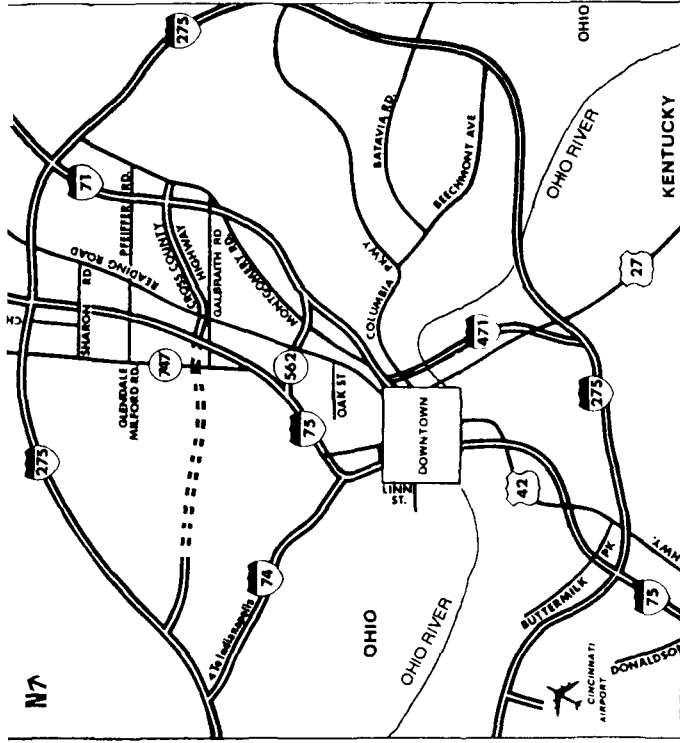
**From Dayton Area:** Take I-75 South to the Vine Street exit (exits right at 3rd Street). Vine Street is one way going North. Pass 4th Street going North on Vine. The hotel is on the right side of Vine Street just before 5th Street.

**From Airport/Kentucky:** Take I-75 North; after crossing the I-75/71 bridge to Cincinnati, stay in the right hand lane and take the Vine Street exit. Take Vine Street (one way going North). Pass 4th Street. The hotel is on the right side of Vine Street just before 5th Street.

**From Cleveland/Columbus:** Take I-75 South through the tunnel in Downtown Cincinnati to the Vine Street exit (exits left). Vine Street is one way going North. Pass 4th Street. The hotel is on the right side of Vine Street just before 5th Street.

**From Indianapolis:** Take I-74 to I-75 South and follow directions above from Dayton.

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### *Parking*

**Fountain Square South:** On Vine Street between 4th and 5th, next to the Vine Street entrance of the Westin Hotel. Open 24 hours.

**Fountain Square North:** On Vine Street between 5th and 6th, underneath Fountain Square. Open 24 hours.

**Westin Hotel:** Vine Street entrance. Valet parking available.

**Walnut Garage:** 626 Walnut Street, (513) 721-6140. Open Monday-Saturday 6:00-1:00 am. Closed Sunday and holidays.

### *Limousine from Airport*

**Jetport Express:** (606) 283-3702. Regularly scheduled limousine service to and from downtown Cincinnati and the airport.

### *Other Hotels Within Walking Distance*

**Omni Netherland Plaza:** 35 West 5th Street, (513) 421-9100.

**Clarion Hotel:** 141 West 6th Street, (513) 352-2100.

**Tuesday, April 13**

8:30 am

**PLENARY SESSION I**

**E. Timothy Oppelt**  
Director, Risk Reduction  
Engineering Laboratory  
U.S. Environmental Protection  
Agency

**Alfred W. Lindsey**  
Director, Office of  
Environmental Engineering and  
Technology Demonstration  
U.S. Environmental Protection  
Agency

**Denise Swink**  
Associate Deputy Assistant  
Secretary, Office of Industrial  
Technologies  
U.S. Department of Energy

9:30 am      Question and Answer Period

10:00 am     Coffee Break

The Symposium will conclude on Thursday,  
April 15 with Plenary Session II, "The Technical  
Issues of Siting Temporary and Permanent  
Hazardous Waste Incinerators", scheduled from  
10:30 - Noon.

**Tuesday**

**SESSION A**  
Biotreatment

10:30 Evaluation of In Situ Bioremediation with Laboratory Microcosms and Macrocosms, and In Situ Macrocosms  
*Wendy Davis-Hoover*  
U.S. EPA, RREL

11:00 Chlorinated Aliphatic Hydrocarbon Biodegradation by Methanotrophic Bacteria  
*Perry L. McCarty*  
Stanford University

11:30 Discovery and Development of Anaerobes for Bioremediation  
*James M. Tiedje*  
Michigan State University

noon LUNCH

**SESSION B**  
Thermal Treatment/Air Emissions

Hazardous Waste Incinerator Emissions Resulting from Waste Feed Cutoffs  
*Marta Richards*  
U.S. EPA, RREL

Metals Emissions/Control from the Burning of Hazardous Waste  
*Randy Seeker*  
EERC

Prediction of Dust Generation from Handling Powders in Industry  
*Marc Plinke*  
University of North Carolina at Chapel Hill

**SESSION C**  
Panel Discussion

Current Development in Solidification/Stabilization  
Moderator:  
*Carlton Wiles*  
U.S. EPA, RREL

Place  
Stamp  
Here

**The Westin Hotel**  
at Fountain Square  
Cincinnati, OH 45202

*Hotel Registration Form*

*Hotel Registration Form*

19th Annual RREL Hazardous Waste Research Symposium

By filling out this form completely you can guarantee your reservations for late arrival. Although you must supply credit card information, you may pay your account with cash - just advise the front desk clerk at check-in time. **CHECK-IN TIME - 3:00 PM CHECK-OUT TIME - 1:00 PM**  
Reservations will not be held beyond 6 pm unless guaranteed by credit card or advanced deposit.

Name _____
Affiliation/Co. _____
Address _____
City, State, Zip _____
Telephone _____ Fax _____
Signature _____

Government ID must be shown in order to obtain the government rate. A third person sharing the room will be an additional \$20. Children under 18 free when sharing room with adult. Reservations received after March 26, 1993 will be accepted on a space-available basis.



SAIC  
501 Office Center Drive  
Suite 420  
Fort Washington, PA 19034

Place  
Stamp  
Here

**SAIC**  
(Attn. Technology Transfer Dept.)  
501 Office Center Drive  
Suite 420  
Fort Washington, PA 19034

*Symposium Registration Form*

|

*Symposium Registration Form*

**19th Annual RREL Hazardous Waste Research Symposium**

Please print clearly or attach a business card; this information will be used to make up your name badge and attendees list.

Name _____
Affiliation/Co. _____
Address _____
City, State, Zip _____
Telephone _____ Fax _____

I cannot attend, but please send me a copy of the Abstract Proceedings.  
There is no Registration Fee.

Your check payable to SAIC must accompany this form if any of the optional functions are chosen, and **must arrive no later than March 26**. You will be sent a receipt with a letter confirming your Symposium registration. Confirmations will be sent within 10 days of receipt of your registration form. Mail to:

**SAIC** (Technology Transfer Dept.)  
501 Office Center Drive, Suite 420,  
Fort Washington, PA 19034  
Telephone (800) 783-3870 or (215) 628-9317 (in PA) -  
Fax (215) 628-8916

*For additional information call between 1pm and 3pm ET,  
Monday, Wednesday, or Friday*

*Please accept my reservation for the following optional functions:*

**Tuesday, April 14**

- |   | # of People | Total \$ |
|---|-------------|----------|
| <input type="checkbox"/> Buffet Luncheon at the Hotel @ \$17.00 x _____                               | _____       | = _____  |
| <input type="checkbox"/> Dinner at Union Terminal @ \$25.00 x _____                                   | _____       | = _____  |
| <i>Choose one entree:</i>   |             |          |
| <input type="checkbox"/> Chicken with Rosemary/Mustard Sauce  |             |          |
| <input type="checkbox"/> Roast Pork Loin with Sauteed Apples  |             |          |
| <input type="checkbox"/> Omnimax Movie "Antarctica" at Union Terminal (after dinner) @ \$5.50 x _____ | _____       | = _____  |

**Wednesday, April 15**

- |   |             |          |
|---|-------------|----------|
| <input type="checkbox"/> Buffet Luncheon at the Hotel @ \$17.00 x _____ | # of People | Total \$ |
|   | _____       | = _____  |
- I am enclosing my check for a total of \$ \_\_\_\_\_

**EPA's Nineteenth Annual RREL Hazardous Waste  
Research Symposium - Registration**

(No.)	Single (one person)	Arrival Date	Credit Card
—	\$102 Conference Rate,	—	—
—	\$64 Government Rate	Arrival Time	Card #
		—	—
	Double (two persons)	Departure Date	Expires
—	\$102 Conference Rate,	—	—
—	\$64 Government Rate		

Name of person(s) sharing room: \_\_\_\_\_

**FOR HOTEL USE ONLY:**

IN	NTS	OUT	NAME	ARR
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**EPA's Nineteenth Annual RREL Hazardous Waste  
Research Symposium - Hotel Registration**

	SESSION A Biotreatment	SESSION B Thermal Treatment	SESSION C Panel Discussion
1:00	On-Site Chemical Analysis Capability: The Key to Most Cost-Effective Remediation and Decision-Making <i>Albert Robbat</i> <i>Tufts University</i>	Soil Detoxification Using Solar Technology: The Result of EPA's Part of the Tri-Agency Effort <i>Paul Gorman</i> <i>MRI</i>	Full Scale Treatability Testing- Proof of Process <i>Ed Bates</i> <i>U.S. EPA, RREL</i>
1:30	Field Experiences with the EPA/RREL Volume Reduction Unit <i>Rich Griffiths</i> <i>U.S. EPA, RREL</i>	Comparison of Thermal Treatment PCB Data from Two Superfund Sites <i>Larry Waterland</i> <i>Acurex</i>	
2:00	Modeling Virus Survival <i>Christon J. Hurst</i> <i>U.S. EPA, RREL</i>	SITE Demonstration of Chemical Waste Management X*TRAX Thermal Desorption Process <i>Paul R. dePercin</i> <i>U.S. EPA, RREL</i>	
2:30 - 3:30	POSTER SESSION/Coffee Break		

**Tuesday**

**SESSION A**  
**Groundwater Modeling/Analysis**

3:30 Three-Dimensional Characterization of Groundwater Contamination  
*Dennis McLaughlin*  
*Massachusetts Institute of Technology*

4:00 Pneumatic Fracturing at Low Permeability Formations  
*John Schuring*  
*New Jersey Institute of Technology*

4:30 Field Study of In-Situ Trichloroethylene Degradation in Groundwater by Phenol-Oxidizing Microorganisms  
*Lewis Semprini*  
*Stanford University*

5:00 Cocktail Reception/Cash Bar

**SESSION B**  
**Drinking Water**

Evaluation of Corrosion Inhibitors to Reduce Lead in the Drinking Water in Buildings  
*Thomas A. Sorg*  
*U.S. EPA, RREL*

Point-of-Entry Drinking Water Treatment System Applications at Hazardous Waste Sites  
*James A. Goodrich*  
*U.S. EPA, RREL*

The Removal of Ionic Contaminants from Drinking Water  
*Thomas F. Speth*  
*U.S. EPA, RREL*

**SESSION C**  
**Panel Discussion**

Full Scale Treatability Testing-Proof of Process (continued)  
*Moderator:*  
*Ed Bates*  
*U.S. EPA, RREL*



**Wednesday**

**SESSION A  
Pollution Prevention**

8:30 Evaluation of an Ultrasonic Cleaning System as a Replacement for CFC-Based Solvents in a Metal Parts Cleaning Operation  
*Paul Randall*  
U.S. EPA, RREL

9:00 On-site Solvent Recovery of Small Volume 33/50 Substances  
*Ivars Licis*  
U.S. EPA, RREL

9:30 Development and Evaluation of Lead Paint Abatement Technologies: The RREL Program  
*G.T. Moore*  
U.S. EPA, RREL

10:00 Coffee Break

**SESSION B  
Physical/Chemical**

A Closed Loop Approach for Removal/Destruction of Chlorinated Aromatics from Soil  
*Shubhander Kapilla*  
University of Missouri-Rolla

Electrokinetic Soil Remediation - A SITE Study  
*Yalcin B. Acar*  
Electrokinetics, Inc.

Evaluation of the Biogenesis Soil Cleaning Process  
*Annette Gatchett*  
U.S. EPA, RREL

**SESSION C  
Panel Discussion**

Coordinating Strategies to Achieve Regulatory Requirements for Drinking Water and Wastewater Treatment

*Moderator:*  
*Mike Schock*  
U.S.EPA, RREL

**Wednesday**

**SESSION A**  
**Pollution Prevention/Recycling**

- 10:30 Innovative Clean Technologies  
Demonstration  
*Kenneth R. Stone*  
U.S. EPA, RREL
- 11:00 Reduction of Chemical Waste Assessment  
of Selected Overhaul/Repair Processes  
*Garry Howell*  
U.S. EPA, RREL
- 11:30 SITE Demonstration of The Toronto Harbour  
Commissioners Soil Recycling Unit  
*Teri Richardson*  
U.S. EPA, RREL

noon LUNCH

**SESSION B**  
**Aquatic Remediation**

- Pollutant Fluxes to Aquatic Systems via Coupled  
Biological and Physicochemical Bed-Sediment  
Processes  
*L.J. Thibodeaux*  
Louisiana State University
- Laboratory and Modeling Investigations of  
Surfactant Enhanced Aquifer Remediation  
*Linda M. Abriola*  
The University of Michigan
- Procedures for Selection and Design of a Cap for  
In-Situ Treatment of Contaminated Sediment  
*D.D. Reible*  
Louisiana State University

**SESSION C**  
**Panel Discussion**

The Ranking Index for Judging  
Incinerability  
Moderator:  
*Greg Carroll*  
U.S. EPA, RREL

**SESSION A**  
**Source Reduction/Recycling**

- Results of the EPA MITE Program:  
Evaluation of Landfill Mining Technology  
*Lynnann Hitchens*  
U.S. EPA, RREL
- Automatic Sortation Process for Post-  
Consumer Plastic Containers  
*Diana Kirk*  
WTE Corporation
- Two Treatment Options for Chromated  
Copper Arsenate Wood Preserving  
Residues-F035  
*Ron Turner*  
U.S. EPA, RREL

**SESSION B**  
**Physical/Chemical**

- Experimental Examination of Integrated Soil  
Vapor Extraction for the Remediation of Gasoline  
*Chien T. Chen*  
U.S. EPA, RREL
- SITE Demonstration of Resource Conservation  
Company's B.E.S.T. Process  
*Mark C. Meckes*  
U.S. EPA, RREL
- Characterization and Treatment of Contaminated  
Soils Using Mineral Processing Techniques  
*Peter Wood*  
Warren Springs Laboratory

**SESSION C**  
**Panel Discussion**

- Hazardous Substance  
Research Centers: Program  
Highlights  
*Moderator:*  
*Dale Manty*  
U.S. EPA, Office of  
Exploration Research

**POSTER SESSION/Coffee Break**

1:00

1:30

2:00

2:30 -

3:30

**Wednesday**

**SESSION A**  
Biotreatment

3:30 Bioscrubber for Removing Organic Emissions from Soil, Water, and Decontamination Processes  
*Paul T. Liu*  
ALCOA

4:00 Features of BTEX-Degrading Microorganisms from Oxygen-Limited (Hypoxic) Environments  
*Ronald H. Olsen*  
University of Michigan Medical School

4:30 Effects of Nitrogen Source on Crude Oil Biodegradation  
*Brian A. Wrenn*  
University of Cincinnati

5:00 Cocktail Reception /Cash Bar

**SESSION B**  
Physical/Chemical

Hydraulic Fracturing to Enhance In Situ Remediation of Contaminated Soils  
*Lawrence Murdock*  
University of Cincinnati

An Integrated Chemical and Biological Treatment System for Site Remediation  
*Robert L. Kelley*  
Institute of Gas Technology

SITE Demonstration of the Chemical Waste Management PO\*WW\*ER Evaporation and Catalytic Oxidation System  
*Randy A. Parker*  
U.S. EPA, RREL

**SESSION C**  
Panel Discussion

Measurement of Pollution Prevention Progress  
*Moderator:*  
*Dave Stephan*  
U.S. EPA, RREL

**Thursday**

**SESSION A**  
Biotreatment

- 8:30 Field Treatability Trials for Fungal Treatment of Soils Contaminated with Wood Treating Waste  
*John A. Glaser*  
*U.S. EPA, RREL*
- 9:00 Sequential Anaerobic/Aerobic Biotreatment of Contaminated Soils  
*Grace M. Lopez*  
*U.S. EPA, RREL*
- 9:30 Aerobic, Phenol-Induced Biotransformation of TCE  
*Gene F. Parkin*  
*University of Iowa*

10:00 Coffee Break

**SESSION B**  
Aquatic Remediation

- Bioremediation of Chlorophenol Contaminated Aquifers  
*Kenneth J. Williamson*  
*Oregon State University*
- Investigation on Fate of Hexachloro-butadiene and Chlorobenzenes in a Sediment-Water Estuarine System  
*S.G. Pavlostathis*  
*Georgia Institute of Technology*
- Transport and Entrapment Behavior of Immiscible Organic Waste Chemicals in Heterogeneous Aquifers: Implications on Modeling, Recovery and Remediation  
*Tissa H. Illangasekare*  
*University of Colorado*

**Thursday, April 15**

10:30 am

**PLENARY SESSION II**

**Panel Discussion -**

**"The Technical Issues of Siting Temporary and Permanent Hazardous Waste Incinerators"**

Moderator - Clyde R. Dempsey, Acting  
Chief, Waste Minimization Destruction  
& Disposal Research Division,  
U.S. EPA, RREL

***Panel***

Dr. Robert Ginsburg, Consultant  
National Toxics Campaign

Dr. Ron Kagel  
Dow Chemical

Dr. Kathryn Kelly, President  
Environmental Toxicology International

Dr. Jim Cudahy, President  
Focus Environmental, Inc.

Ms. Sonya Sasseville, Chief  
Alternative Technology Section  
U.S. EPA, Office of Solid Waste

Question and Answer Period

Noon

Adjourn

## POSTERS • POSTERS • POSTERS

- A Beach Microcosm for the Study of Oil Biodegradation
- An Evaluation of Drinking Water Samples Pre-Disinfected with Chlorine Dioxide Using Chemical, Microbiological and Mutagenicity Endpoints
- Application of Computer Simulation/Modeling for Industrial Pollution Prevention
- Bench Scale Treatability Study Evaluation of Thermal Desorption and Solvent Extraction as Remedial Options at the Industrial Latex Superfund Site
- Case Studies Involving the RREL RCRA Corrective Action Program
- Cold Compressed Air for Electronic Component Cooling
- Current Developments in Solidification/Stabilization Technology
- Evaluating the Feasibility of Bioremediating Open Sea Oil Spills
- Evaluation of Corrosion Rates of Lead Pipes and Copper Pipes by Means of Polarization Measurement
- Evaluation of Material Recovery Facilities for Municipal Solid Waste Recycling
- Fluidized Bed Incinerator Metals Capture
- Fluid Extraction-Biological Degradation of Polyaromatic Hydrocarbons From Town Gas Soils
- Fungal Treatment of Soil at a Wood Preserving Site
- In-Situ Migration of Acid Water
- MIDAS for Solids Contaminated with Organics and Metals
- Microbial Removal of Lead
- On Site Anaerobic Biodegradation of Dinoseb or TNT Contaminated Soils
- Operating Parameters to Minimize Emissions During Rotary Kiln Emergency Safety Vent Openings
- Nutritional Requirement and Buffering Capacity of Various Phosphate Sources for Oil Degrading Cultures in Sea Water

## POSTERS • POSTERS • POSTERS

- Pollution Prevention Technology Transfer through Research Briefs
- Predicting Resistance of Chemical Protective Clothing Using Neural Computing Techniques
- Predicting Solidification/Stabilization Performance Using Neural Computing Techniques
- RD&D with Tidewater Interagency Prevention Program
- RREL Remedy Screening Program
  
- RREL Underground Storage Tank Research Program Overview
- Reverse Osmosis: Pesticide and Organics Removal from Drinking Water
- Risk Reduction Engineering Laboratory (RREL), Drinking Water Technology Transfer Activities - U.S. EPA
- SITE Demonstration of Peroxidation Systems, Inc. of the Peroxpure Process: Advanced Oxidation Process
- SOWAT: Sequence Optimizer for Wastewater Treatability
- Slow-Release Solid Oxygen to Enhance Bioremediation
- Technical Resource Documents for Cleanup of Wood Preserving, Solvent, Pesticide, and Metals Sites
- The Leachate-Recirculating MSW Landfill
  
- Thermally Induced Water Movement Within Geomembrane Covered Clay Liners
- The U.S. EPA Incineration Research Facility
  
- The Use of Secondary Lead Smelters for the Recovery of Lead from Lead Contaminated Materials at Superfund Sites
- Thermally Induced Water Movements Within Geomembrane Covered Clay Liners
- X-Ray Treatment of Organic Wastes
  
- X-Ray Treatment of Organic Wastes in an Aqueous Matrix



### *Sightseeing Opportunities*

There are several Sightseeing Opportunities in Cincinnati for attendees and spouses.

Sightseeing and dining guides will be available at the registration desk. The following is a partial listing of some highlights.

**Union Terminal** - 1301 Western Avenue, (513) 287-7000. Art Deco train station/multiple museum complex which features the Cincinnati Historical Society, Natural History Museums, and an Omnimax Theatre.

**The Cincinnati Reds** - 100 Riverfront Stadium, (513) 421-REDS for information on major league baseball games. Tickets on sale at Riverfront Stadium, Reds Gift Shop/Hyatt Hotel.

**Tower Place** - Carew Tower, 4th and Race Streets, (513) 2410-7700. A renovated Art Deco "mixed-use urban center" combining restaurants, stores, offices, and a hotel under one roof.

**Taft Museum** - 316 Pike Street, (513) 241-0343. Former home of Anna Sinton and Charles Phelps Taft built in 1820, paintings, porcelains, and enamels. Open Monday-Saturday, 10:00 am- 5:00 pm.

**Sawyer Point** - Bicentennial Commons, Pete Rose Way. A major city park along the waterfront. For information on upcoming activities call (513) 352-4000. Open every day.

**Cincinnati Symphony** - 1241 Elm Street, (513) 621-1919. Jesus Lopez-Cobos, Music Director, September through May in Music Hall. For information and tickets call (513) 381-3300.

**Cincinnati Art Museum** - Eden Park, (513) 721-5204. Offering the visitor over 100 galleries reviewing the visual arts through art exhibitions. Open daily except Monday and major holidays.

**Krohn Conservatory** - Eden Park Drive, (513) 352-4086. Contains 1,500 labeled specimens of tropical plants and seasonal floral displays. One of the largest public greenhouses in the world.

**Cincinnati Zoo** - 3400 Vine Street, (513) 281-4700. Nation's first Insect World exhibit. Outdoor gorilla display, floral display, and Big Cat Canyon. Home of rare white Bengal tigers.





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