Agenda for Environmental Forensics, Course 2, December 6, 2022, 10 am – 2:15 pm
Environmental Forensics of Non-Hydrocarbon Chemicals: Survey of Applications, Approaches, Capabilities, and Limitations

10:00-10:15 AM: Introduction to Environmental Forensics of Synthetic Organic Compounds and Byproducts

- Goals, and applications
- General approaches to an environmental forensic investigation

10:15-11:00AM: Polychlorinated Biphenyls (PCBs)

- PCB chemistry
- PCB contamination sources
- PCB analytical methods and QC issues
- PCB forensic fingerprinting methods
- PCB environmental weathering impacts on fingerprinting
- PCB forensic case studies

Q&A

11:00-11:30 AM: Dioxins and Furans (PCDD/PCDF)

- PCDD/PCDF chemistry
- PCDD/PCDF contamination sources
- PCDD/PCDF analytical methods and QC issues
- PCDD/PCDF transport and fate
- PCDD/PCDF forensic fingerprinting methods
- PCDD/PCDF basic fingerprinting case studies
- PCDD/PCDF multivariate statistics case study

11:45-12:15 PM: 30-minute break

12:15 – 12:35 PCDD/PCDF multivariate statistics case study

Q&A

12:35-1:00 PM: Chlorinated Solvents

- Chlorinated solvent chemistry
- Chlorinated solvent contamination sources
- Chlorinated solvent forensic fingerprinting methods
    - Basic fingerprinting
    - Use of additives and trackers
    - Use of compound-specific isotopes
- Chlorinated solvent forensic case studies

1:00-1:30 PM: PFAS chemistry, sources, analysis, and forensics

- PFAS history and contamination sources
- PFAS chemistry, fate and transport and weathering
- PCDD/PCDF analytical methods and QC issues
- PFAS forensic fingerprinting methods
- PFAS forensic case studies

Q&A

1:30-2:00 PM: Miscellaneous Topics

- Environmental Forensics Conceptual Site Models
- Allocation
- Costs and strategies for cost control
- Emerging and Advanced Methods

Q&A

2:15 PM: Adjourn