Innovative science for a cleaner planet

crcCARE Workshop:
Faster, Better, Cheaper: Risk-Based Investigation and Remediation of PFAS

PROGRAM DAY 1

TIME	TOPIC	PRESENTER
8.30-9.00	**Arrival and Registration** • Coffee/tea on arrival • Delegates registration to the course	
9.00-9.15	**Welcome and Introduction** • Outline the objectives of the Course • Presenters introduction • Delegate's expectations from the course • OH&S - Emergency procedures and housekeeping instructions	**Ravi Naidu**
9.15-10.15	**Introduction – Overview of PFAS- from source to extent and severity of contamination and challenges as regards to management** • What is the problem we are trying to solve • Economic considerations • Challenges as regards to managing risks and remediation • NEMP	**Ravi Naidu** **Roger Brewer**
10.15-10.30	**MORNING TEA BREAK**	
10.30-11.15	**PFAS Chemistry** • Target and non target PFAS • Current and emerging analytical methods for solid and liquid matrices • Uncertainties associated with analytics and implications to risk quantification	**Feng Shi**
11.15-12.15	**Chemistry and transport of PFAS in the surface and vadose zone** • Behaviour and Transport of PFAS in surface and subsurface unsaturated zone • PFAS- competitive effect on transport in vadose zone Case examples	**Anthony Umeh**

12:15-13.15	**LUNCH BREAK**	
13.15-14.15	**Quantitative risk assessment of representative PFAS under multiple land uses** • Assessment methodologies • Critical exposure conceptualization • Contamination Characteristics • Toxicity and water standard based risk quantification • Derivation of soil and groundwater remedial targets	**Mengfang Chen**
14.15-15.15	**Assessment of PFAS Risk** • PFASs toxicity and health effects • PFAS soil, water and air screening levels • Challenges of PFAS Precursors • Use of TOPs and TOF methods to assess Total PFAS Risk	**Roger Brewer**
15.15-15.30	**AFTERNOON TEA BREAK**	
15.30-16.30	**Risk Based Site Investigation Methods (Part 1)** • Reliability of traditional discrete sampling methods • Introduction to Gy's Theory of Sampling • Introduction to Decision Unit and Multi Increment Sample (DU-MIS) investigation methods	**Roger Brewer**
16.30-17.00	**Close of the day - Q&A and general discussions**	**Roger Brewer (Moderator)**
Learning Outcome	<u>The following are the learning outcomes of the workshop –</u> ¬ Use of TOPs data can significantly assessment of exposure risk to PFASs ¬ Complex fate and transport of PFASs requires site-specific evaluation for risks posed by leaching and vapor intrusion, modelling of groundwater plume migration and design of remedial actions ¬ Effects of Soil, Groundwater, and PFAS Physicochemical Properties on the Behaviour and Transport of Short and Long Chain PFAS. ¬ Adsorption of PFAS to Soils and Accumulation at Fluid-fluid Interfaces in the Unsaturated Zone. ¬ Implications of Competitive Effects on PFAS Leaching and Transport around AFFF-Source Zones.	

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PROGRAM DAY 2

TIME	TOPIC	PRESENTER
9.00-9.15	**Recap of the Day-1 Session** • Quick question-answer	By the team
9.15-11.00	**Ground Water Modelling** • Why groundwater models are important • Existing models • Modeling basics and transport mechanisms • Dealing with uncertainties and machine learning • Lessons learnt from modelling perspective	Alvin Lal
11.00-11.30	MORNING TEA BREAK	
11.30-12.30	**Risk Based Site Investigation Methods (Part 2)** • Example Investigation Scenarios • Field Implementation • Laboratory Processing and Testing • Data Quality and Usability	Roger Brewer
12.30-13.30	LUNCH BREAK	
13.30-15.00	**Faster, Better, Cheaper: Example PFAS Investigation Strategies** • Investigation Strategies for Contaminated Fire Training Area Site • Investigation Strategies for Contaminated Agricultural Fields • Investigation of Other PFAS-Contaminated Media • Discussions	Roger Brewer

15.00-15.15	**AFTERNOON TEA BREAK**	
15.15-16.30	**PFAS Contaminated Site Remediation** • Existing approach in US • What's working and what's not working • Key considerations and recommendations	**Sergie Albino**
16.30-17.00	**Close of the day - Q&A and general discussions - End of workshop**	**Roger Brewer** **(Moderator)**
Learning Outcome	The following are the learning outcomes of the workshop – ¬ Decision Unit and Multi Increment Sample investigation methods for testing of soil and sediment can significantly expedite project completion, provide more defensible data for final decision makings and limit future liability ¬ Large Volume Purge sampling methods for testing of groundwater and soil vapors can provide more accurate and defensible, data for plume characterization assessment of risk.	