



NORDROCS 2024 - Crossing borders

Program
September 9th – 12th, 2024, Uppsala



Photo from Anders Tukler

Conference sponsors:



NORDROCS 2024 is arranged by:



Monday, September 9

11.00 – 16.00

Short Course 1 – Remedial Investigations at PFAS-Impacted Sites

GSI Environmental Inc., USA – Charles J. Newell

NIRAS A/S, DK – Charlotte E. Riis, Anders G. Christensen

Venue: Uppsala Konsert och Kongress

The course will emphasize that remedial investigations at PFAS-impacted sites require distinct, tailored approaches compared to traditional methods for other groundwater contaminants. Participants will gain a comprehensive conceptual understanding and practical knowledge for addressing PFAS contamination, including the importance of site-specific models, the behaviour of PFAS in the environment, and innovative strategies for characterization and mitigation, especially in groundwater systems.

11.00 – 16.00

Short Course 2 - Best Practices for Applying In Situ Chemical Oxidation: Design Considerations, Application Methods and Monitoring

Evonik – Josephine Molin, Brant Smith

Ramboll – Johanna Moreskog

Venue: Uppsala Konsert och Kongress

During this short course we will discuss the fundamental chemistry of ISCO-amendments and the chemical interaction with contaminants, along with design parameters, dosing calculations, implementation methods, limitations and monitoring program. We will also discuss the interplay between the conceptual site model and the remedial design as well as the underlying site characterization needed for a successful implementation of your ISCO remedy.

18.00 – 20.30

Welcome reception Linnaean Gardens of Uppsala

Welcome reception with drinks and snacks in the beautiful Linnaean Gardens of Uppsala.

Tuesday, September 10

08.30 – 10.00

Registration and coffee

10.00 – 12.00

Opening session A - Hall B

Venue: Uppsala Konsert och Kongress

Welcome

Ulrika Larson, Coordinator for NORDROCS 2024,

Hanna Hartmann, President of Nätverket Renare Mark

Keynote speaker: *Åsa Valley, The Environmental Protection Agency, Sweden*

The Proposal for a Directive on Soil Monitoring and Resilience

Gymnastics

A directive on Soil Monitoring and Resilience – opportunities and challenges for the Nordic countries

Chair: *Christian Andersen, Danish Regions, Denmark*

Jussi Reinikainen, Finnish Environment Institute, Finland

Kristin Kröyer, The environmental Agency, Iceland

Maiken Lundstad Nielsen, Ministry of the Environment, Denmark

Noman Ahmed, Environment Agency, Norway

Åsa Valley, The Environmental Protection Agency, Sweden

12.00 – 13.30

Lunch and exhibition on first floor

Poster exhibition on 3rd floor

Tuesday, September 10

13.30 – 14.50

HALL B

Session B - PFAS

Chair: *Mette M. Broholm (DTU, Denmark)*

Keynote speaker: *Charles J. Newell (GSI Environmental Inc. USA)*

The PFAS Challenge: What We Have Learned and Where We are Going.

Dan Berggren Kleja (SGI, Sweden)

Stabilization of PFAS in unsaturated and saturated zones using coal and charcoal based activated carbon sorbents.

Julie K. Jensen (Norrecco, Denmark)

Remediation of PFAS in soil by soil washing and surface active foam fractionation

HALL C

Session C - Sediment

Chair: *Salla Venäläinen (Soilventure Oy, Finland)*

Paul Sverdrup Cappelen (NGI, Norway)

Sustainable recycling of dredged sediments

Arto Itkonen (Sitowise, Finland)

SEDKE Project: Enhancing the Sustainability of Sediment Remediation

Jonas Gunnarsson (Stockholms universitet, Sweden)

Thin-layer capping with reactive sorbents – a cost-effective and environmentally sustainable alternative to dredging of polluted sediment, project CAPTIVE in Oskarshamn

Tobias Porsbring (SGI, Sweden), Clara Neuschütz (Naturvårdsverket, Sweden)

Field inventory of polluted sediments in Sweden

14.50 – 15.50

Coffee and exhibition on ground floor and poster session on 3rd floor.

Tuesday, September 10

15.50 – 17.10

HALL B

Session D - Soil investigations

Chair: *Aura Nousiainen (Syke, Finland)*

Keynote speaker: *Erla Hafsteinsdottir (Verkis Iceland, Iceland)*

The contaminated land industry in Iceland – where do we stand and where are we heading?

Mette M. Broholm (DTU, Denmark)

Use of direct-push logging and fluorescence techniques for contaminant mass discharge estimation: application to a sulfonamide plume

Morten Hjorth (Nordiq Group A/S, Denmark)

Identifying the source of TCE contamination in a deep aquifer

HALL C

Session E - Indoor air

Chair: *Mette Christophersen (Ramboll, Denmark)*

Trine Skov Jepsen (DMR A/S, Denmark) Mass Discharge Testing at Vapor Intrusion Sites – New Revelations.

Julia Inkapööl (WSP, Sweden) Identification of new preferential pathways for vapor intrusion of chlorinated solvents found by combining VaporSafe™ and detection dogs.

Patrick van Hees (Eurofins, Sweden) PFAS in air – A new matrix to consider?

Oona Virta (Ramboll, Finland) Test building for simulating VOC vapor intrusion to indoor air in Hanasaari, Helsinki.

18.30

Drinks at the Castle of Uppsala

19.00. – 01.00

Conference dinner at Castel of Uppsala

Entertainment: According to the traditions in Uppsala we invite you to listen to two amazing choirs during the dinner.

After-dinner party: DJ music and dancing

Wednesday, September 11

08.30 – 09.50 **HALL B**

Session F - Riskassessment

Chair: *Annika S.Fjordbøge (DTU, Denmark)*

Keynote speaker:
Poul Løgstrup Bjerg, (DTU, Denmark)
Risk assessment and remediation of Mega Sites: Prospects and challenges in a Danish perspective?

Ida Dyrlund Damgaard (Central Region Denmark, Denmark)
Risk assessment of a chlorinated ethenes plume influenced by source and barrier remediation – evaluation of degradation using an integrated approach.

Bolette Badsberg Jensen (WSP, Denmark)
Risk assessment of PFAS findings in groundwater: An approach based on data trends from 1500 small industrial sites.
TCE contamination in a deep aquifer

HALL C

Session G - Sustainability

Chair: *Paul Sverdrup Capellen (NGI, Norway)*

Jean Rhoné (Haemers Technologies, Belgium)
Novel Sustainability Scoring Method for Soil Remediation Technologies.

Jack Shore (Regenesis, UK)
The need for sustainable PFAS remediation; comparing the environmental impact in situ sequestration to pump and treat.

Krzysztof Kowalski (Capital Region of Denmark, Denmark) Utilizing Plant Operational Data for Assessing the CO2 Footprint of Pump and Treat Remediation: A Comprehensive Bench-marking Approach.

Salla Venäläinen (Soilventure Oy, Finland) Remediation of shooting range soil by means of mine tailings: Dealing with the challenge of co-contamination.

HALL K3/K4

Session H - Digital tools

Chair: *Carolina Ersson, (SGI, Sweden)*

Peter Harms-Ringdahl (Envifix, Sweden)
SGF's tool for Carbon footprint.

Robert Earon (SGI, Sweden)
Insight into the role of numerical groundwater modelling in optimization of PFAS-contaminant remediation: Experience from a governmental assignment in-situ pilot study.

Fritjof Fagerlund (Uppsala Universitet, Sweden)
Modelling PFAS transport in groundwater accounting for competitive sorption.

Anny Qvale (WSP, Norway)
Large-scale sustainable mass handling and remediation of polluted ground during the excavation of the new hospital in Drammen.

09.50 – 10.35 **Coffee break**

Wednesday, September 11

10.35 – 11.55 **HALL B**

Session I - Sediment and surface water

Chair: *Katariina Lahti-Leikas (University of Helsinki, Finland)*

Keynote speaker:
Jenni Haapaniemi (Sitowise, Finland)

The future challenges and opportunities of sustainable environmental risk management.

Paul Frogner Kockum (SGI, Sweden)

Microbial degradation of fiberbanks and dispersion of contaminants through gas discharge.

Vanja Alling (Niva, Norway)

Microplastics in the Norwegian environment.

HALL C

Session J - Contaminants of emerging concern

Chair: *Peter Harms-Ringdahl (EnviFix, Sweden)*

Nicola Messinger (Uppsala University, Sweden)

Bioremediation of PFAS: Advancing the insight on microbes involved in PFAS degradation.

Cecilie F. Ottosen (DTU, Denmark)

Assessing the fate of chlorinated ethenes and pharmaceutical compounds in a large-scale contaminant plume via microbial and isotope analyses.

Morten Jartun (Niva, Norway)

Exploring the next threat in environmental monitoring.

Martijn van Praagh (SGI, Sweden)

Emerging contaminants – new-old challenges for circular use of soils and other construction and demolition wastes.

HALL K3/K4

Session K - Soil and concrete as a resource

Chair: *Pernilla Ljunggren (Liljemark Consulting, Sweden)*

Jens A Bischoff (WSP, Denmark)

Network for Sustainable Soil Management -how does a multi-disciplinary network across interests and stakeholders contribute to an increased circular use of Soil.

Martin Heljedal, Elke Myrhede (Municip. of Norrköping, Sweden)

Sustainable Mass Management in Norrköping: A Strategic Approach.

Mats Fröberg (Naturvårdsverket, Sweden) Swedish guidelines for recycling of excavated soil and other bulk materials.

Caroline Berge Hansen (NGI, Norway)

Reuse of lime and cement stabilized clay: Geochemical and geotechnical challenges.

11.55 – 13.25 **Lunch and exhibition on ground floor, poster session on 3rd floor**

Wednesday, September 11

13.25 – 14.45 **HALL B**

Session L - PFAS

Chair: *Patrick van Hees (Eurofins, Sweden)*

Lutz Ahrens (SLU, Sweden)
An overview of remediation techniques for removal of PFASs in soil and water

Jan Haemers (Haemers Technology, Belgium) State of the Art for PFAS-impacted Soils. What are the Available Remediation Technologies?

Oscar Skirfors (SLU, Sweden)
Assessing phyto-remediation integrated in a treatment train for PFAS contaminated groundwater

Søren Rygaard Lenschow (NIRAS, Denmark)
Impact of Sea Spray Aerosols as a Diffuse PFAS Load on Soil, Surface Water and Groundwater.

HALL C

Session M - Remediation - Soil and groundwater

Chair: *Kristin Kröyer (Umhverfisstofnun, Iceland)*

Petter Wetterholm (Wescon, Sweden) ISCO-ISS for Remediation of TCE Source Area Achieving Clean Up Goals within One Week of Application.

Andreas Sahyoun Sørensen (WSP, Denmark)
Optimizing pump flow rates in pump-and-treat remediation systems using IoT-based modeling.

Søren Eriksen (Krüger, Denmark)
Fractured Rock – Treatment of Igneous and Metamorphic Bedrocks Using Thermal Conductive Heating.

Josephine Molin (Evonik Corporation, USA) Biogeochemically Enhanced Treatment of Chlorinated Organics and Metals.

HALL K3/K4

Session N - Management

Chair: *Randi Warland Kortegaard (Ragn-Sells, Norway)*

Björn Johansson och Niclas Johansson (Naturvårdsverket, Sweden)
The Swedish Environmental Protection Agency's work with a socio-economic impact assessment of generic guideline values for PFAS.

Johanna Moreskog (Ramboll, Sweden)
Experience and reflections from work under six different legislations.

Aura Nousiainen (SYKE, Finland)
Translating Science from Lab to Field: Case Mine Tailings as a Remediation Agent.

Michael Nilsson (Municipality of Sala, Sweden)
Remediating Sala Silver Mine and Pråmån after more than 450 years of mining activities.

14.45 – 15.25 **Coffee break and exhibition on ground floor, poster session on 3rd floor**

Wednesday September 11

15.25 – 16.25

Hall B

Session O - Sustainability

Chair: *Ulrika Larson (Empirikon, Sweden),
Peter Harms-Ringdahl (EnviFix, Sweden)*

Keynote speaker: *Erik J. Joner (Nibio, Norway)*
Soil health – Does it apply to polluted soils?

Hanna Almqvist (WSP, Sweden)
Quantifying biodiversity impact to achieve sustainable remediations.

16.25 – 16.35

Closing session in Hall B with prizes for best posters (top 3)

Thursday September 12

08.00 – 14.15

Technical tour/Expedition 1

Visit to Sala Silvermine www.sala.se/miljo.gruvanpraman
Technical tour to the remediation site at Sala Silvermine. Sala Silvermine, is a cultural heritage in Sweden. A guided tour and lunch down in the Silvermine are included. Bring warm clothes.
Participants will be picked up by a bus at Uppsala Konsert and Kongress. Lunch will be served in Sala Silvermine before the bus returns to Uppsala Central Station and UKK.

09.00 – 14.00

Technical tour/Expedition 2

Visit to the laboratory at the Swedish university of agricultural sciences in Uppsala and to the LIFE SOuRCE pilot for PFAS treatment at Hovgården waste management facility, combining foam fractionation, electrochemical oxidation and phytoremediation. Hovgården is situated just outside Uppsala.
Participants will be picked up by a bus at Uppsala Konsert and Kongress. Lunch will be served before the bus returns to Uppsala Central Station.