

# Program for NORDROCS 2022

ver.2022-08-26

Time	<b>Monday, September 5, 2022</b>
11.00 – 16.00	<b>Short Course 1 – Capping Design -The art of designing isolation layers to reduce environmental risk associated with contaminated sediments</b> <i>NGI and Texas Tech University, Scandic Holmenkollen hotel</i> <ul style="list-style-type: none"><li>• Contaminant mobility and intended cap functionality</li><li>• Elements of cap design</li><li>• Modeling using CapSim</li><li>• Constructional considerations</li><li>• Monitoring cap performance</li></ul>
11.00 – 16.00	<b>Short Course 2 – In Situ Thermal Desorption by Conductive Heating</b> <i>Haemers Technologies, Scandic Holmenkollen hotel</i> <ul style="list-style-type: none"><li>• Introduction to thermal desorption</li><li>• Scientific principles underlying thermal desorption</li><li>• Overview of different in situ thermal desorption</li><li>• Technologies</li><li>• Conception and design – feasibility – lab and pilot</li><li>• Tests</li><li>• Conductive heating (TCH)</li><li>• Sustainable development and thermal desorption</li></ul>
11.00 – 16.00	<b>Workshop - Sustainability assessment as a tool for more sustainable and resilient remediation of soils, groundwater, and sediments</b> <i>Ramboll, Scandic Holmenkollen hotel</i> <ul style="list-style-type: none"><li>• What is sustainable remediation?</li><li>• Methods for sustainability assessment?</li><li>• Introduction to SURE</li><li>• Applying sustainability assessment</li><li>• Stakeholder dialogue best practices</li></ul>
17.30 – 19:30	<b>Welcome reception with refreshments in Oslo City Hall</b> <i>Doors close at 18:00</i>  <i>Tour and talk about the history of the building and its art</i>

	<b>Tuesday, September 6, 2022</b> Venue: Scandic Holmenkollen hotel	
08.30 – 10.00	<b>Registration and coffee</b>	
10.00 – 10.50	<b>Opening session, SAGA HALL A/B/C</b>	
	<p><b>Welcome: Marianne Borgen, Major of Oslo</b></p> <p><b>Paul S. Cappelen, Coordinator for NORDROCS 2022</b></p> <p><b>Morten Jartun, President of Miljøringen, Norway</b></p> <p><b>Keynote speaker:</b> <b>Dietmar Müller-Grabherr, EU Common Forum</b> Biodiversity, Circular Economy and Climate Change – streamlining Societal Challenges to Contaminated Land Management (within the EU Green Deal)</p>	
10.50 - 11.00	<b>Gymnastics</b>	
	<b>SAGA HALL A/B/C</b>	
11.00 - 12.00	<p><b>EPA session from 4 Nordic countries – Topic PFAS</b> <b>Chair: Vanja Alling, Norwegian Environment Agency</b></p> <p>Presentations and discussion, moderated by Dietmar Müller-Grabherr. Participants will be Julie Kofoed (Denmark), Jussi Reinikainen (Finland), Vanja Alling (Norway) and Niclas Johansson (Sweden).</p>	
12.00 – 13.00	<b>Lunch</b>	
13.00 – 13.30	<b>Poster session and exhibition</b>	
	<b>Parallel session 1 SAGA HALL A/B</b>	<b>Parallel session 2 SAGA HALL C</b>
13.30 – 14.50	<p><b>Session A – Remediation of soil, rock and groundwater</b> <b>Chair: Mette M. Broholm (DTU)</b></p> <p><b>Keynote speaker:</b> <b>Mike Annable (University of Florida)</b> The critical link between characterization and remediation.</p> <p><b>Nina Tuxen (Capital Region of Denmark)</b> Innovative remediation of contaminant plumes as a sustainable alternative to traditional pump and treat.</p> <p><b>Gary Wealthall (Geosyntec Consultants)</b> Advances in the Bioremediation of DNAPL source zones in fractured bedrock.</p>	<p><b>Session B – Soil as a resource</b> <b>Chair: Jarno Laitinen (Ramboll)</b></p> <p><b>Stefan Ritter (NGI)</b> Reuse of waste and surplus masses as impermeable geological materials: Potential of pressfilter residual and excavated lime cement stabilised clay for landfill barriers.</p> <p><b>Klaus Weber (NIRAS)</b> LCA screening of remediation methods - a simplified approach using life cycle profiles.</p> <p><b>Emma Flodin (Ramboll)</b> Biochar for managing sulphide bearing geomaterial.</p> <p><b>Cathrine Eckbo (NGI)</b> Reuse of end of life concrete: The problem of hexavalent chromium leaching.</p>

14.50 – 15.50	<b>Poster session and exhibition, coffee break</b>	
	<b>SAGA HALL A/B</b>	<b>SAGA HALL C</b>
15.50 – 17.10	<p><b>Session C – PFAS</b>  <b>Chair: Linda Karlsson (NIRAS)</b></p> <p><b>Keynote speaker:</b>  <b>Hans Slenders (Arcadis)</b>  PFAS in soil and water: deal with it!</p> <p><b>Kevin J. Tuttle (Norconsult)</b>  PFOS-sorption in the groundwater fluctuation zone.</p> <p><b>Julie Kofoed (Danish Regions)</b>  PFAS findings in close to 1 100 site investigations at various businesses.</p>	<p><b>Session D – Urban challenges</b>  <b>Chair: Ulrika Larson (Empirikon)</b></p> <p><b>Outi Hyttinen (Sitowise)</b>  The Viinikanlahti Bay case - when contaminated lake sediments meet an international urban ideas competition.</p> <p><b>Agnieszka T. Bentzen (Region of Southern Denmark)</b>  Integrated water management in the future climate change for robust risk assessment from contaminated point sources.</p> <p><b>Hanna Almqvist (WSP) and Marie Arnér (Arnér Consulting).</b>  From gas works site to residential area – challenges and solutions in assessing vapour intrusion of PAH.</p> <p><b>Louise Skytte Clausen (Sweco) and Morten Møller Klausen (Ultra Aqua)</b>  UV technology – A new way to remove chlorinated compounds from air.</p>
18.30 –	<b>Drinks in the exhibition area</b>	
19.00 – 01.00	<p><b>Conference dinner in SAGA HALL A/B/C</b></p> <p><b>Entertainment:</b>  Cuban Dance Show. You may need to do some dancing steps yourself...</p> <p><b>Music by:</b>  Stian Carstensen, multi-instrument Norwegian musician:  <a href="https://en.wikipedia.org/wiki/Stian_Carstensen">https://en.wikipedia.org/wiki/Stian_Carstensen</a></p> <p><b>After-dinner party:</b>  DJ music and dancing</p>	

**Wednesday, September 7, 2022**

Time	SAGA HALL A	SAGA HALL B	SAGA HALL C
8.30 – 09.50	<p><b>Session E – Remediation – Soil, rock and groundwater</b>  <b>Chair: Aura Nousiainen (Finnish Environment Institute)</b></p> <p><b>Katerina Tsitonaki (WSP)</b>            Reagents for in situ remediation: State of the art and latest innovations.</p> <p><b>Azariel Ruiz-Valencia (University of Lyon)</b>            Bioelectrochemical Remediation of Petroleum-Contaminated Soil and Groundwater.</p> <p><b>Josephine Molin (Evonik)</b>            Combining Biogeochemical Processes to Enhance Reductive Treatment of Chlorinated Organics and Metals.</p> <p><b>Peter Harms-Ringdahl, Martin Palmqvist (EnviFix)</b>            Investigation and remediation of soil at marinas and boat maintenance sites.</p>	<p><b>Session F – Emerging contaminants</b>  <b>Chair: Patrick van Hees (Eurofins)</b></p> <p><b>Hans Peter Arp (NGI)</b>            Prioritizing emerging Persistent and Mobile organic substances in groundwater and drinking water through hazard and risk assessment for substitution and remediation.</p> <p><b>Mahdiyeh Mohammadzadeh (University of Oulu)</b>            Adsorption performance of surface-modified biosorbent for removal of antibiotics from wastewater.</p> <p><b>Henning Jensen (NGU)</b>            Microplastic in marine sediments –Results from the MAREANO mapping program and some analytical challenges encountered.</p> <p><b>Gøril Aasen Slinde (NGI)</b>            The environmental legacy of disposable paper plates - PFAS contamination in Tyrifjorden.</p>	<p><b>Session G – Site Investigations – Sediments</b>  <b>Chair: Marianne Olsen (NIVA)</b></p> <p><b>Leo Regazzoni (SGF/Lektus) and Thomas Jansson (SGF/Geosyntech)</b>            Certified sampling in practice - 10 years with certified environmental sampling according to Nordic standard.</p> <p><b>Jens Laugesen (DNV)</b>            Trends and developments in innovative investigations and monitoring of marine sediments.</p> <p><b>Nils Ekeroth (NIRAS)</b>            Monitored natural recovery (MNR) in Drammensfjorden, Norway.</p> <p><b>Hubert de Jonge (Eurofins)</b>            A Danish case study for sampling in surface water with volume-based passive sampling – Sorbisense method.</p>
09.50 – 10.35	<b>Coffee Break</b>		

<b>Time</b>	<b>SAGA HALL A</b>	<b>SAGA HALL B</b>	<b>SAGA HALL C</b>
10.35 - 11.55	<p><b>Session H – Remediation – Soil, rock and groundwater</b>  <b>Chair: Annika Fjordbøge (DTU)</b></p> <p><b>Bertil Ben Carlson (WSP)</b>  Pump &amp; treat – Lessons learnt from the reassessment and optimization at more than 40 sites and best practice from current projects.</p> <p><b>Helena Hinrichsen (Envytech Solutions)</b>  Surface Active Foam Fractionation (SAFF): Effective PFAS removal from water using only air</p> <p><b>Lars Været (Norconsult)</b>  Remediation of PFAS contaminated ground at a former fire-fighting facility. From initial investigations to completed remediation. Lessons learned.</p> <p><b>Helena Nord (RGS Nordic)</b>  Remediation of a 1 km long PCE plume in the woods of Lappeenranta, Finland, using a Plume-Stop barrier with colloidal active carbon for in situ sorption and HRC for enhanced reductive dichlorination.</p>	<p><b>Session I – Site Investigations – Soil, rock and groundwater</b>  <b>Chair: Randi Warland Kortegaard (Ragn-Sells)</b></p> <p><b>Jesper B. Nielsen (NIRAS)</b>  Revisiting an old oil spill – new high resolution tools provide data for a new and much different conceptual model.</p> <p><b>Lars Davidsson (WSP)</b>  Evaluation of High Resolution Methods for VOC Contaminant and Flux Distributions in Igneous / Metamorphic Rock Settings.</p> <p><b>Simon Ross Stenger (NGI)</b>  Interpretation and visualization of contaminated soil at a former ferrosilicon smelter using implicit 3D modelling – is it worth the effort?</p> <p><b>Gro Lilbæk (NIRAS)</b>  High-resolution site characterization using new groundwater profiler.</p>	<p><b>Session J – Risk assessment – Sediments</b>  <b>Chair: Morten Jartun (NIVA)</b></p> <p><b>Keynote speaker: Marianne Olsen (NIVA)</b>  Clean up levels for contaminated sediments based on bioavailability.</p> <p><b>Ann-Sofie Wernersson (SGI)</b>  Swedish Sediment Risk Assessment Strategy.</p> <p><b>Arto Itkonen (Sitowise)</b>  Lead shots in a sensitive spring lake – case Onkilampi, Suonenjoki, Finland.</p>
11.55 - 12.55	<b>Lunch</b>		
12.55 – 13.25	<b>Poster session and exhibition</b>		

<b>Time</b>	<b>SAGA HALL A</b>	<b>SAGA HALL B</b>	<b>SAGA HALL C</b>
13.25 – 14.45	<p><b>Session K – Remediation – Soil, rock and groundwater</b> <b>Chair: Mette Christophersen (Ramboll)</b></p> <p><b>Tove Mallin (RISE)</b> Testbed PFAS - evaluation of remediation techniques for PFAS contaminations and PFAS-free fire extinguishing agents</p> <p><b>Michel Hubert (NGI),</b> Optimizing soil washing as a remediation method for PFAS contaminated soil</p> <p><b>Søren Eriksen (Krüger)</b> Thermal Conductive Heating for PFAS remediation.</p> <p><b>Jack Shore (Regenesis)</b> Installation and operation of an injectable in situ permeable reactive barrier to prevent the advection of per- and polyfluoroalkyl substances at an airport.</p>	<p><b>Session L – Remediation – Sediments</b> <b>Chair: Jens Laugesen (DNV)</b></p> <p><b>Hilde Trannum (NIVA)</b> Long-term biological effects of capping with thin layers of activated carbon in the Grenland fjords, Norway</p> <p><b>Jarno Laitinen (Ramboll)</b> Minimizing sustainability impacts throughout dredging project – from decision making to stabilization.</p> <p><b>Sissel Ranneklev (NIVA)</b> Identifying the most contaminated sediments along the coast of Norway.</p> <p><b>Alizee Lehoux (University of Uppsala)</b> Remediation of contaminated fibrous sediments combined with energy production.</p>	<p><b>Session M – Risk assessment – Soil, rock and groundwater</b> <b>Chair: Paul S. Cappelen (NGI)</b></p> <p><b>Jussi Reinikainen (Finnish Environment Institute)</b> Risk assessment of PFAS contaminated sites as a result of firefighting activities.</p> <p><b>Leo Yeung (Örebro University)</b> Comprehensive assessment of poly-/perfluoroalkyl substances (PFAS) in contaminated soil.</p> <p><b>Mette M. Broholm (DTU)</b> Degradation of pharmaceutical compounds in the plume emanating from the factory site in Grindsted – tools and evaluation of degradation potential.</p> <p><b>Torunn Hønsi (Western Norway Research Institute)</b> Contaminated sites at risk: A GIS-based identification and assessment of possible increased pollution and reduced water quality due to climate change.</p>
14.45 – 15.25	<b>Poster session and exhibition, Coffee Break</b>		

Time	SAGA HALL A/B	SAGA HALL C
15.25 – 16.25	<p><b>Session N – Sustainability</b>  <b>Chair: Peter Harms-Ringdahl (Envifix)</b></p> <p><b>Keynote speaker:</b>  <b>Alan Thomas (SuRF UK)</b>  Sustainable Remediation - a review of recent SuRF UK guidance and a look forward to future trends.</p> <p><b>Paul Drenning (Chalmers)</b>  A risk management framework for gentle remediation options.</p>	<p><b>Session P – Environmental Geotechnics</b>  <b>Chair: Mari Dahl (University of Helsinki)</b></p> <p><b>Keynote speaker:</b>  <b>Suzanne Lacasse (NGI)</b>  Common Ground – the unifying, added value of sustainable geotechnics.</p> <p><b>Marius Sjøvik (NGI)</b>  Stepwise preloading to expand the capacity at Langøya waste disposal site.</p>
16.25- 16.35	<b>Closing session in SAGA HALL A/B/C with prizes for best posters (top 3)</b>	
	<b>Thursday, September 8, 2022</b>	
08.00 – 14.00	<p><b>Technical tour/Expedition</b>  Visit to Langøya landfill site. <a href="https://en.noah.no/for-clients/treatment-area/langoya/">https://en.noah.no/for-clients/treatment-area/langoya/</a></p> <p>The technical tour will be on the 8th of September to the unique island Langøya, one hour south of Oslo . The company NOAH at Langøya has Norway’s national landfill for inorganic, hazardous waste and also receive lots of waste from the other Scandinavian countries.</p> <p>Participants will be picked up by a bus at the venue and on the way to Langøya there will be a guided tour of the geology in the area. On Langøya we will visit the landfill and learn about the island history and NOAH's process. Lunch will be served in the nearby city of Holmestrand before the bus returns to Oslo Central Station.</p>	