SCLF

Scottish Contaminated Land Forum

Welcome to the 13th Scottish Contaminated Land Forum Conference

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This Conference Guide provides information on the supporters of the conference, the venue, accessibility arrangements, programme and the speakers

SCLF
Scottish Contaminated Land Forum

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Welcome to SCLF Conference 2024

Thank you for joining us for #SCLF2024. For our second year running at our new venue, we are pleased to welcome you to our 13th conference!! The aim of the conference is to facilitate knowledge transfer in the land contamination sector.

In this booklet, you can read about the exciting programme we have lined up as well as information about our speakers and full abstracts.

Getting there

Conference venue is The Studio, 67 Hope Street, Glasgow, G2 6AE.

Go to The Studio website for details on how to get there by foot, public transport and by car. There are also some handy videos there too to help make sure you reach us!

What3Words: Soup, Brand, Caked

Venue Layout

When you arrive, go directly to the 9th floor (there is a lift!!) and make your way to the SCLF registration desk. The main conference will be in room 'Climb' with the exhibition in the breakout space.

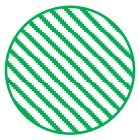
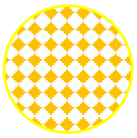
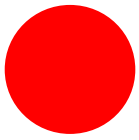
GET SOCIAL @SCOTTISHCLF #SCLF2024

Accessibility and Inclusion

We have tried to make the conference as accessible as possible so that everyone can feel comfortable and enjoy the event. If you have any specific accessibility needs then please let us know.

Interactive Badges

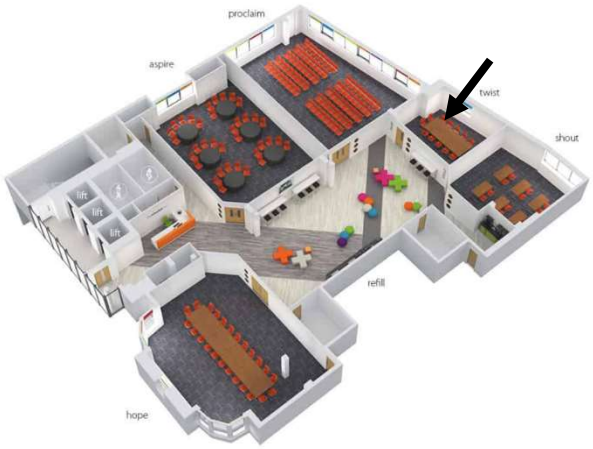
This year we are delighted to share Colour Communications Badges with all the attendees. These colour circles can be placed in your name badge holder and will enable you to express your communication preferences quickly and non-verbally. Use of these badges is entirely a personal choice but we would encourage you to use them. Please respect the communication preferences of those wearing a colour communication badge.

	Come Talk to Me!	A person wearing a green badge is actively seeking interaction. They may have trouble initiating conversations, but it's okay to come up and start a conversation with them.
	Do I Know You?	A person wearing a yellow badge only wants to talk to people they recognise. Unless you've met this person face-to-face before, please don't start a conversation with them. If they start talking to you, you're welcome to talk back with them.
	Not Right Now.	A person wearing a red badge does not want anyone to talk to them. They may approach others to talk, in which case it's okay to respond. Unless you've been told that you're on someone's "red list", please don't start interacting with them. (A "red list" is the list of people who the badge-wearer has previously identified as exempt from the stop. The badge wearer would have let those on the list know in advance that it was okay to approach them.)

Quiet Room

We have a designated quiet room, Twist room located on 8th floor.

You can use this room during the conference if you need somewhere to welcome you in silence, whether you need a place to regroup from sensory overload, or to collect your thoughts, or to pray or meditate. This space is not to be used for conversation or phone calls 😊.



Sensory Packs

We also have some sensory packs that are available from the registration desk. The include a variety of sensory fidgets, ear defenders. You can pre-book your pack by emailing admin@sclf.co.uk

Inclusive toilet

You can find an inclusive toilet that can be used by everyone as well as gendered toilet facilities.

Conference Programme

REGISTRATION AND REFRESHMENTS FROM 9AM

MORNING CHAIR 1: ANDREW HURSTHOUSE | UNIVERSITY OF THE WEST OF SCOTLAND

9:25- 9:35 WELCOME TO #SCLF2024

Stevi Collins | SCLF Chair / Senior Geo-Environmental Consult – Woolgar Hunter

9:35 - 9:45 SCOTTISH GOVERNMENT UPDATE

Helen Mansbridge | Environmental Protection Team Leader – Contaminated Land, Scottish Government

9:45 - 10:05 RADON AND THE REVISED POTENTIAL MAP OF THE UK

Tracy Gooding | Radon Group Leader – UK Health Security Agency

10:05 - 10:25 REVIEWING PROGRESS IN TACKLING VACANT AND DERELICT LAND

Hamish Trench | Chief Executive – Scottish Land Commission

10:25 - 10:35 GROWING IN COMMUNITIES

Lou Evans | GrowGreen Scotland

10:35 - 10:50 DISCUSSION ON COMMUNITY PROJECTS AND PANEL Q&A

Put your questions to our session 1 speakers

10:50 - 11:10 BREAK AND EXHIBITION

Your chance to network too!

MORNING CHAIR 2: KARIN HELWIG, GLASGOW CALEDONIAN UNIVERSITY

11:10 - 11:30 ENVIRONMENTAL RISK ASSESSMENT – CDOIF AND CBA

Liz Copland | Director – IKM Consulting

11:30 - 11:50 ONE GAS MEMBRANE TO RULE THEM ALL

Patrick Flood | Technical Director - JUTA

11:50 - 12:10 THE TRANSPORT OF MICROPLASTIC CONTAMINATION INTO SOIL - PATHWAYS, PROBLEMS AND PREVENTION

Erina Brown | Bioresources Consultant – AtkinsRéalis / University of Birmingham

12:10 - 12:30 MICROPLASTICS – WHAT THE LABORATORY CAN OFFER

Paul Walker | Senior Development & Technical Specialist - SOCOTEC

12:30 - 12:40 PANEL Q&A

Put your questions to our session 2 speakers

12:40 - 13:40 LUNCH AND NETWORKING

Plenty of time to visit the exhibition

AFTERNOON CHAIR 1: SAM LORD | SWECO

13:40 - 13:45 WELCOME BACK – INTRODUCTION OF SPEAKERS

13:45 - 13:55 ECOTOXIC METAL IMMOBILISATION THROUGH ENZYME MEDIATED MINERAL PRECIPITATION

Heloisa Dickinson | Post-Graduate Researcher – University of Glasgow

13:55 - 14:15 IS EX SITU SOIL BIOREMEDIATION REALLY SUSTAINABLE?

Thomas Aspray | Technical Manager – ERS

14:15 - 14:35 BIOREMEDIATION OF HEAVY METALS VIA MICROBIAL-INDUCED CALCITE PRECIPITATION IN SOILS CONTAINING ORGANIC CONTAMINANTS

Dr Carla Comadran Casas | University of Glasgow

14:35 - 14:55 PANEL Q&A

Put your questions to our session 3 speakers

14:55 - 15:20 BREAK AND EXHIBITION

Grab a refreshment and last chance to visit the exhibition

AFTERNOON CHAIR 2: JENNY WEIR | ATKINSREALIS

15:20 - 15:40 A BRIEF HISTORY OF CHROMIUM IN GLASGOW

Andrew Mackenzie | Managing Director, ERS

15:40 - 16:00 CHALLENGES OF COMPLEX LNAPL CHARACTERISATION AND DEVELOPING A REMEDIATION STRATEGY WITHIN CONDENSED DEVELOPMENT TIMESCALES

Helen McMillan | Associate Technical Director – RSK Geosciences

16:00 - 16:20 WHAT IS NEXT FOR TOTAL PETROLEUM HYDROCARBONS?

JP Renauld | Technical Director, ERS

16:20 - 16:45 PANEL Q&A AND CLOSE

Put your questions to our session 4 speakers

Meet the Speakers and Session Chairs

SCLF would like to take this opportunity to thank all of our speakers and session chairs who have volunteered their time to make this event a success.

Helen Mansbridge
Environmental Protection Team Leader for Contaminated Land at The Scottish Government

Helen Mansbridge is head of the Environment Protection Team in the Scottish Government, leading on policy development and delivery on air quality, environmental noise and contaminated land. Recently taking on policy lead for contaminated land, Helen is keen to build strong stakeholder relationships working closely with stakeholders to understanding the issues facing local government, industry and community concerns. Helen started her career in the civil service as a statistician working for the Office for National Statistics, HM Treasury and a secondment to the Bank of England, before moving into policy at the Scottish Government where she has led on a wide range of policy areas, including climate change behaviours, sustainable development, Scottish income tax and education.

Tracy Gooding
Radon Group Leader at UK Health Security Agency

Tracy Gooding joined the National Radiological Protection Board in 1988 (later the Health Protection Agency, Public Health England and UK Health Security Agency) and has worked mostly on radon, focusing on workplace measurement and control, including: RPA work for mines; a national radon programme for schools; radon exhalation from building materials; and contributing to the 2013 EURATOM Basic Safety Standards Directive and its requirements such as the National Radon Action Plan. Tracy is a Principal Radiation Protection Scientist and Radon Group Leader, a Chartered Physicist, and has an MSc in Radiation and Environmental Protection from the University of Surrey.

Hamish Trench
Chief Executive at The Scottish Land Commission

Hamish Trench is Chief Executive of the Scottish Land Commission, a public body advising government on reforms to land ownership and use. He is a former chartered surveyor with experience of land policy, research and management in the public and private sectors.

Andrew Hursthouse (Chair)
Professor of Environmental Geochemistry at the University of the West of Scotland

Professor Andrew Hursthouse CChem FRSC, is Professor of Environmental Geochemistry at the University of the West of Scotland. With over 35 years' research experience in land contamination, remediation and risk assessment, urban environmental quality and impact on emerging environmental issues such as antimicrobial resistance. He collaborates with industry and regulators on a range of waste and sustainability issues. From 2014 to 2021 he was a 100-talent expert chair at China's Hunan University of Science & Technology HNUST), and an associate member of the Key Laboratory for Shale Gas Exploitation based at HNUST.

Lou Evans
GrowGreen Scotland

Lou has worked as both a practitioner and advocate for local growing initiatives for 20 years.

Liz Copland
Director at IKM

Liz has 19 years of experience in managing and assessing land contamination. She has extensive expertise in conducting ground investigations and assessments across a variety of sites, including refineries, gas works, chemical plants, and former landfills. Since 2015, Liz has been actively working with Upper Tier COMAH operators, leading Environmental Risk Assessments as part of their Safety Report submissions. She holds certifications as a Specialist in Land Condition (SiLC), a Suitably Qualified Person (SQP), and an ASOBRA for Human Health and Controlled Waters.

Patrick Flood
Technical Director at Juta

Patrick is the Technical Director (JUTA UK), a qualified Geologist, he has over 15 years research, design and construction experience across a variety of projects incorporating geosynthetic solutions including; design and construction of Landfill and waste processing sites, Brownfield remediation and development and sub-structure gas/waterproofing design Globally. A specialist knowledge area in geosynthetics led to a move into Technical Sales and R+D for the European Geosynthetic manufacturers, supporting unique projects across the globe; including remediation of old unpermitted landfill sites, Gold Mine design to optimise mineral recovery, and Civil remediation projects throughout Africa, the Middle East, Australasia and North America. As a member multiple technical committees, Patrick continues to promote the sustainable use of geosynthetics across a broad industry spectrum, with particular focus on ground gas and waterproofing protection to structures incorporating geosynthetics.

Erina Brown
Bioresources Consultant at AtkinsRéalis / University of Birmingham

Erina's work focuses on microplastic contamination, which developed from her interest in waste management and water quality leading to microplastic research conducted for her masters degree at Strathclyde University.

She is currently researching the transport of microplastics through soil and waterbodies into groundwater, with a specific focus on tyre wear particles, through a part-time PhD at the University of Birmingham. She combines this research with part-time work in the Bioresources team at AtkinsRéalis, helping the wastewater sector manage the growing challenges of contamination concerns surrounding sludge management.

Paul Walker
Senior Development & Technical Specialist at SOCOTEC

Paul Walker (BSc, MRSC) gained his Chemistry degree from Grey College, Durham University, and has worked for SOCOTEC UK for 26 years. As Senior Technical and Development Specialist in the

Environmental Science sector at SOCOTEC UK, Paul is responsible for developing analytical methods, both for improving current methodologies and implementing new emerging work areas. Paul is an expert in the field of environmental forensics and is currently involved in the examination of samples for microplastics. Paul is a committee member of the British Standards Institution and a national expert to ISO and CEN.

Dr Carla Comadran Casas
University of Glasgow

Carla Comadran Casas, BSc and MSc in Civil Engineering and PhD in Environmental Sciences, is a research associate at the University of Glasgow. Their current work focuses on the potential for concomitant carbon sequestration and storage and bioremediation of soil contaminants through microbial processes, in particular Microbial-Induced Calcite Precipitation, in vacant and derelict land in the city of Glasgow as part of the NERC funded GALLANT project. Their research interests reside in the study of soil microbial processes applicable to soil and environmental engineering.

Tom Aspray
Technical Director at ERS

Thomas (Tom) is Technical Manager at ERS where he is responsible for the design of soil and groundwater remediation solutions. In addition he manages ERS treatability laboratory and a portfolio of in-house and collaborative R&D projects. With a PhD in microbiology, Tom has particular interest/expertise in soil bioremediation. He has designed numerous successful commercial soil bioremediation projects and continually publishes on bioremediation related topics in peer-review journals.

Heloisa Dickinson
Post-Graduate Researcher at University of Glasgow

Heloisa Dickinson is a Geochemist with a BSc. In Geology and an MSc. by Research in Geochemistry and Mineral Chemistry from São Paulo University. She graduated from Edinburgh University with an MSc. In Carbon Management where she was the recipient of the Best Dissertation Prize of the year 2022 with her work “Assessing the potential for carbon sequestration in the soil of Catterline Bay using Terrestrial Enhanced Weathering”. Currently she is a Post-graduate Researcher working in the GALLANT project where she develops her PhD thesis aiming at developing novel techniques that concurrently sequester CO2 atmospheric and immobilise contaminants inside crystal structures.

Andrew Mackenzie
Managing Director at ERS

Andrew joined ERS as a researcher in 1994 to advise the founders of opportunities in the Contaminated Land Market. He then became Business Development Manager, then Director. Before becoming Managing Director. Originally established as a Scottish Company, ERS was sold into American ownership before Andrew led a management buyout and then established an Employee Ownership Trust in 2016. ERS is now 100% Employee Owned (feel free to ask if you're interested in this Business Model) and Andrew is employed as MD. Andrew describes himself as a jack of all trades and master of none within Contaminated Land, or more professionally he leads a multidisciplinary team of scientists and engineers bringing a wide variety of disciplines to provide bespoke site solutions.

Helen McMillan
Associate Technical Director at RSK

Helen McMillan is an Associate Technical Director and QRA Group Technical Lead at RSK Geosciences. She is a Chartered Geologist and ASoBRA (controlled waters) with over 20 years' experience working in geo-environmental consultancy, specialising in land contamination risk assessment and environmental compliance projects. Helen takes pride in developing robust, practical, sustainable and cost-effective solutions to environmental problems on behalf of her clients. Through her professional approach, technical knowledge and wealth of experience she is highly proficient in achieving Regulatory approval for projects, often minimising protracted discussions.

JP Renauld
Technical Director at ERS

JP is Technical Director at ERS, a specialist contractor for the investigation and remediation of contaminated land and groundwater. JP has 25 years of experience in hydrogeology, ranging from the practical aspects of groundwater investigation and remediation at ERS, to an applied regulatory role within the groundwater unit at SEPA, to academic roles at Bristol University, largely focused on R&D of bespoke groundwater modelling tools for the French nuclear industry. At ERS JP has overall responsibility for the design or groundwater remediation, and with added responsibility for ERS' quality and environmental management systems, staff training and innovation across the business.

Abstracts

Scottish Government Update
Helen Mansbridge | Environmental Protection Team Leader – Contaminated Land, Scottish Government

A brief update on Scottish Government's Contaminated Land policy work, including the work being progressed by the Contaminated Land Advisory Group and its subsidiary working groups.

Radon and the Revised Potential Map of the UK
Tracey Gooding | Radon Group Leader – UK Health Security Agency

Radon is the largest single source of ionising radiation exposure to the UK population and a leading cause of lung cancer, contributing to more than 1,100 deaths each year. It comes from natural sources and is present in all indoor environments: homes, workplaces and underground facilities. Radon exposure when working and at home is covered by regulations, and methods to reduce radon levels (mitigation) can be very successful in reducing radon levels and doses.

In December 2022, UKHSA and the British Geological Survey (BGS) published an updated radon potential map. This supersedes all previously published radon maps. The radon potential shows where to focus attention on radon prevention, measurements and mitigation, i.e. Radon Affected Areas (parts of the country with at least 1% of present and future homes being above the Action Level of 200 Bq m-3).

The radon potential map now forms an integral part of the 2023 edition of BR211 Radon: Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects). In addition, in Scotland the 'Building standards technical handbook 2022: domestic' refers to radon maps.

Radon prevention and mitigation methods have been developed over the past four decades to control radon levels and exposures. However, the building changes for energy efficiency measures and climate change could undo much of this good work. Observational studies have already shown that retrofitting double glazing or wall and loft insultation increase radon levels generally; buildings with previously modest radon concentrations can easily exceed their reference levels after changes linked to sustainability. This emphasises the need for radon prevention during construction.

Reviewing Progress in Tackling Vacant and Derelict Land
Hamish Trench | Chief Executive – Scottish Land Commission

Drawing on new research, this will look at recent progress in tackling vacant and derelict land across Scotland. Four years on from the recommendations of the Vacant and Derelict Land Taskforce, it will share insight into changes in policy and support, land re-use on the ground and where further momentum may be needed.

Growing in Communities
Lou Evans | GrowGreen Scotland

GrowGreen Scotland SCIO was established in 2021 by a group of people experienced in working at the grassroots to system level, and across the sectors. Growing and taking care of nature in our community is a foundation for connecting and taking care of ourselves, each other, and tackling the climate and nature emergencies. We operate as a collaborative on the ground delivery organisation, drawing on people and partner expertise to support communities, accelerate positive change and increase benefits. Our current work includes delivery of the Scottish Government supported community growing portal and advisory service www.getgrowingscotland.org.

Environmental Risk Assessment – CDOIF and CBA
Liz Copland | Director – IKM Consulting

According to the COMAH Regulations (2019), operators of Upper Tier COMAH sites are required to submit an Environmental Risk Assessment (ERA), as part of their Safety Report. The purpose of the ERA is to identify the potential for Major Acidents to the Environment (MATTE), and ensure that all necessary measures are in place to reduce risks to a level that is As Low As Reasonably Practicable (ALARP). In 2015, the Chemical and Downstream Oil Industry Forum (CDOIF) developed a methodology to evaluate the tolerability of risk, which is now widely used in the UK. This methodology helps determine whether risks from these sites are broadly acceptable, intolerable, or Tolerable if As Low As Reasonably Practicable (TifALARP).

For risks categorised as TifALARP, the Competent Authority will request a Cost-Benefit Analysis (CBA). This analysis aims to determine whether the costs of implementing additional mitigation measures, which are not currently in place, are grossly disproportionate to the benefits. It involves understanding the value that the receptor provides as an ecosystem service and the potential costs of an incident in the event of a major accident, to estimate the cost of harm.

This presentation will cover: a brief overview of the current CDOIF assessment process; an examination of how contaminated land Detailed Quantitative Risk Assessment (DQRA) methods are used to assess risks to groundwater receptors; an overview of the CBA process; and methods for evaluating the total economic value of receptors and the costs of incidents to estimate the cost of harm.

One Gas Membrane To Rule Them All
Patrick Flood | Technical Director – JUTA

An overview of gas membrane technology in view of current industry guidance, with particular focus on the impact of NF94

The transport of microplastic contamination into soil - pathways, problems and prevention

Erina Brown | Bioresources Consultant – AtkinsRéalis / University of Birmingham

Erina's presentation will look at: the pathways of microplastics into the soil from various sources and routes, as well as the pathways from the soil to other environmental media such as groundwater; the potential problems and consequences associated with this contamination; and will briefly look at some of the prevention methods and solutions that are being developed to reduce these contamination routes.

Microplastics – What The Laboratory Can Offer

Paul Walker | Senior Development & Technical Specialist – SOCOTEC

As Microplastics become a more requested contaminant to test in environmental soils and waters, there is an increased need to harmonise the methods. Understand how the different testing strategies can affect the results given, ensuring that the analysis will give you useable data.

Bioremediation of Heavy Metals Via Microbial-Induced Calcite Precipitation in Soils Containing Organic Contaminants

Dr Carla Comadran Casas | University of Glasgow

Microbial-Induced Calcite Precipitation (MICP) via urea hydrolysis is a biogeochemical process which shows promising results for the bioremediation of bioavailable toxic metals (soluble/extractable) through carbonation. Polluted soils, however, may contain organic contaminants in addition to heavy metals, and the applicability of MICP in this context is still limited. In this study we present an investigation on the biostimulation of MICP in soils contaminated with different concentrations of hydrocarbons and heavy metals. Soils were treated with media to induce the biostimulation of MICP for up to 2 months. MICP was monitored through pH, heavy metal removal through a sequential extraction, and hydrocarbon content and characterisation through thermogravimetric analysis plus diffuse reflectance infrared Fourier transform spectroscopy. Our findings indicate that in soils with low hydrocarbon content MICP is inducible, resulting in a reduction in the bioavailability of heavy metals in the exchangeable soil fraction and their incorporation into the carbonate fraction. With increasing hydrocarbon content, however, biostimulation of MICP is inhibited. To determine whether inhibition occurs at the enzyme or cell level, we conducted a series of enzyme activity assays with an enzyme extract and a pure culture of bacteria capable of inducing MICP exposed to hydrocarbon soil extract at different enzyme, cell and hydrocarbon concentrations. Preliminary results indicate enzyme activity is inhibited at high concentrations of organic contaminants and low enzyme content levels, while at high enzyme concentrations activity remains unaffected. The results of this study indicate that inhibition of MICP via urea hydrolysis in soils containing high hydrocarbon content may be circumvented through bioaugmentation approaches, and remediation of heavy metals is plausible.

Is Ex Situ Soil Bioremediation Really Sustainable?

Thomas Aspray | Technical Manager – ERS

Ex situ bioremediation is generally viewed as a sustainable remediation technique. Certainly it is straightforward to demonstrate economic advantages of ex situ bioremediation over, for example, landfill disposal on a development project specific basis. However, other indicators under the three pillars of sustainability; social, economic and environmental maybe assumed or be subject to bias in qualitative assessments. Here we present a quantitative assessment of a recent commercial ex situ bioremediation project based on the environmental indicator of air (CO2) emissions towards answering the above question. As well as helping to answer the posed question for the specific project, the output of this work is helping us focus on improvements to reduce CO2 emissions from our ex situ bioremediation approach.

Ecotoxic Metal Immobilisation Through Enzyme Mediated Mineral Precipitation

Heloisa Dickinson | Post-Graduate Researcher – University of Glasgow

The presentation will exhibit the main findings on an assessment of the efficacy of Enzyme-Mediated Mineral Precipitation (EMMP) for immobilising ecotoxic metals in aqueous solutions through the precipitation of three main mineral phases: calcium phosphate compounds (CPCs), magnesium ammonium phosphates (struvite species) and carbonates. EMMP is a novel technique combining EICP and phosphate precipitation that generates minimal byproducts by incorporating ammonium into some precipitated phases, all in just one step, at a low cost. Our study tested EMMP on solutions with nine ecotoxic metals using bone-meal as source of P, Mg, Ca and soybean crude extract as source of urease. The technique was developed using waste materials from the food industry in a "waste-to-resource" approach. It aims to reduce non-renewable consumption, GHG emissions, and overall environmental impact, guided by life cycle assessment and GHG protocol principles.

Which is The Best Method for Treatment of Chromium Contaminantion?

Andrew Mackenzie | Managing Director, ERS

Chromium is a significant contamination issue for Glasgow with the Shawfield Chemical Works on the southside of Glasgow being the world's largest chromium salts producer for much of its 150-year lifespan. The works resulting in millions of tonnes of chromium ore processing residue (COPR) being dumped or used as construction fill in surrounding areas.

As COPR contains residual chromium, including varying levels of soluble hexavalent chromium (CrVI), this causes groundwater contamination issues, clearly obvious signs of which include visible yellow/green water in streams and burns on the southside which attract recurring public and press interest and attention.

ERS has investigated and remediated numerous COPR/CrVI affected site in Glasgow over the company's 30-year history for several clients. As we celebrate this significant company milestone, this presentation looks back over some of these projects and ahead to ongoing/future investigation/remediation works.

Challenges of Complex LNAPL Characterisation and Development a Remediation Strategy within Condensed Development Timescales

Helen McMillan | Associate Technical Director – RSK Geosciences

This case study provides an excellent example of highly responsive consultancy services needed to successfully resolve planning conditions and unlock investor funding within condensed timescales at a site impacted by LNAPL to support development as an energy centre.

The site comprised a historical tractor dealership located within a hydrogeologically complex and sensitive site setting, including SPZ1. Petrol and diesel USTs were historically located on site and there was evidence from previous site investigations that LNAPL was present in the sub-surface. The Environment Agency (EA) had expressed concerns that the site had not been adequately investigated or assessed with respect to risks to controlled waters receptors. As such they were unable to sign off pre-commencement planning conditions, which were critical to the site's planned redevelopment as they were directly linked to the release of capital funding from investors.

RSK Geosciences was commissioned at an advanced stage in the project with the civils contractor already established on site and enabling works being undertaken. We mobilised to site quickly, undertook supplementary SI and extensive groundwater monitoring; and assessed and identified risks to controlled waters from unsaturated zone soils, LNAPL, and dissolved phase groundwater sources. Due to the expedited timeframes required, all data had to be assessed on receipt by the project team and the used to refine the CSM, so as to inform the client of the implications and next steps. This informed the development of the remediation strategy to the satisfaction of the EA, enabling resolution of the pre-commencement planning conditions and construction works to progress, all within a three month timeframe! Critical to the success of the project was close engagement with the EA and project team during all stages of the process.

The case study will explore the complex hydrogeological conceptual site model underpinning the site; LNAPL characterisation using a line of evidence approach; how key uncertainties in the CSM were resolved; the challenges of undertaking land contamination investigations and assessments during construction works; and development of the remediation strategy. The case study will also consider what we may have done differently had we been brought into the project at an earlier stage and able to implement a more pro-active rather than reactive approach to the investigations.

What is Next for Total Petroleum Hydrocarbons?

JP Renauld | Technical Director, ERS

In ERS' experience, Total Petroleum Hydrocarbons (TPH) are still one of the most common contaminants found on brownfield sites today due to their presence in fuels/lubricants over a long time period but also their (initial) mobility and persistence in the environment. The contaminated land industry has now had decades of experience dealing with TPH in a variety of settings and has produced many guidance documents over the years. Nonetheless, there are still many day-to-day challenges for practitioners: identifying and describing the presence of TPH and NAPL in soil, determining the need for, and level of, remediation required; choosing the remedial technique; and setting a remediation end-point agreeable to all stakeholders. Over the past few years, a renewed focus on the Water Environment is seemingly leading to lower remedial targets for TPH in soil, posing key challenges in allowing cost effective and sustainable remediation. Here we present a summary of the typical issues a remediation contractor encounters on a TPH site based on our experience treating contaminated soils, NAPL and groundwater. This include 'will it treat?' type questions, the concept of NAPL presence and mobility now being used in many risk assessments, what additional useful data can be gathered during the site investigation process and what can realistically be achieved using common remediation methods.

With Thanks

Thank you to everyone involved in making SCLF Conference 2024 a success.

We would like to thank our chairs and speakers for their time and for bringing interesting topics and discussions to our members and attendees. There would be no conference without you and we very much appreciate your input.

To our headline sponsor i2 and all our exhibitors, we thank you for your support and hope that you have seen benefit to your support of the conference. Our supporters contribution allows us to keep ticket prices as low as possible and to open the doors to all of our members.

Finally, we would like to give a huge thanks to our conference organising team which is made up of a number of dedicated SCLF Committee members who volunteer their time to organise and promote this event.