TECHNOLOGY AND RESEARCH GROUP

TWENTY-THIRD ANNUAL REPORT
2025

Introduction by the TRG Chair

At the start of January 2026, I was delighted to take on the role of Chair of CL:AIRE's Technology and Research Group (TRG) from Kim Baines. I would like to thank Kim for her leadership over the past three years and am pleased that she is continuing to support the TRG and contribute to its activities. Also in January, Karen Young took on the role of Deputy Chair and I look forward to working more closely with Karen over the next three years.

There were some changes to the TRG in 2025. We welcomed four new TRG members – Hannah Biggs from Natural Resources Wales, Tom Hayes from INEOS, Amy Juden from EPG Ltd and Brian Reid from the University of East Anglia. We also welcomed a new Early Career Professional to the group – Daniel Farr from McAuliffe Group.

CL:AIRE's TRG had another busy year in 2025, reviewing six bulletins and industry reports. These outputs were on topics such as the reuse of excavated materials, PFAS, sustainable remediation, legacy wastes in the coastal zone, policy interactions and piling and penetrative ground improvement methods, all of which illustrate the breadth of CL:AIRE's work.

I know that the CL:AIRE Board and Management Team greatly appreciate the time and effort taken by the TRG members in ensuring the quality of CL:AIRE products. In fact they consider the TRG fundamental to maintaining and enhancing CL:AIRE's reputation and supporting the development of the organisation.

I would like to express my personal thanks to the TRG members and their employers for their contributions.

This document is in two parts - the first gives background to the important role of the TRG within CL:AIRE, whilst the second details its activities during 2025.

The Annual Report is written for CL:AIRE's Members and the wider industry and aims to demonstrate the value of the TRG to CL:AIRE's activities and CL:AIRE's reputation across the world.

Liz Gray
March 2026

BACKGROUND TO CL:AIRE AND THE TRG

INTRODUCTION

CL:AIRE is an environmental organisation, established in 1999, to improve standards and efficiency in the brownfield regeneration industry. CL:AIRE's status as an independent organisation allows it to appraise and disseminate knowledge on innovation and good practice. Thus increasing confidence across the industry, which is driving forward effective and sustainable reuse of land. This is recognised both in the UK and worldwide with CL:AIRE's profile continuing to grow.

CL:AIRE consists of a team of professionals who carry out its daily activities, supported by a Board of Trustees, an advisory group – the Technology and Research Group (TRG) and a number of task groups comprising industry representatives from CL:AIRE member organisations. The TRG plays a key role in CL:AIRE's work, supporting CL:AIRE on issues associated with technology development and sustainable land reuse, peer review of technical publications and resources, and offering strategic review and steering functions for all CL:AIRE's activities. The TRG also offers several positions for early career professionals, which enables fast-track awareness to emerging industry issues and access to experienced practitioners for mentoring support.

Appendix 1 describes the wide range of activities that CL:AIRE undertook in 2025.

THE TRG PROCESSES

The work of the TRG is facilitated through regular meetings and email correspondence. The CL:AIRE team focuses the input of the TRG to ensure the expertise of the group has the greatest impact. The TRG comprises high calibre renowned professionals who are expert in policy, legislation and regulatory guidance as well as in the practicalities of managing and regenerating brownfield sites and the sustainable reuse of land. The TRG expertise adds real value by ensuring CL:AIRE activities are consistent with UK policy, legal requirements and good practices and are of sound scientific and technical quality. The independent review provided by the TRG ensures transparency and accountability of CL:AIRE activities.

TRG MEMBERS

Members of the TRG are selected on account of their skills and expertise to give CL:AIRE an extensive breadth of intellectual and experiential support across its scope of work. This is tracked using a skills matrix which is regularly updated to ensure all aspects of CL:AIRE's activities are covered. Biographies of TRG members are given in Appendix 2.

2025 TRG members:

Chair: Kim Baines – Environment Agency
Deputy Chair: Liz Gray – Ramboll
Bob Barnes – Environment Agency
Simon Burr – CampbellReith
Ruth Chippendale – Shell
Max Coleman – Caltech
Steve Edgar – Vertase FLI
Tom Hayes – INEOS
Mark Hodson – University of York
Amy Juden – The Environmental Protection Group Ltd
Edward Lewis – Northern Ireland Environment Agency
Sarah Harris/Hannah Biggs – Natural Resources Wales
Brian Reid – University of East Anglia
Mike Rivett – GroundH2O plus Ltd
Steven Thornton – University of Sheffield
Karen Young – Jacobs

2025 Early Career Professional TRG Members
Hebah Abdel-Hady – Arcadis
Daniel Farr – McAuliffe Group
Patrick Moore – SLR Consulting

THE 2025 ANNUAL REPORT

1. TRG ACTIVITIES

1.1 TRG Meetings

During 2025, two TRG meetings were held by videoconference and one TRG meeting was held in person in Reading.

1.2 CL:AIRE Resources Reviewed

1.2.1 Bulletins

TRG members completed the review of two bulletins on the following topics in 2025:

- Use of a materials management plan framework and staged declaration approach
- Legacy wastes in the coastal zone

1.2.2 Technical Reports

TRG members reviewed the following four technical reports and guidance documents in 2025 (see Appendix 1 for more details):

- Piling and penetrative ground improvement methods
- National Brownfield Forum policy interactions report
- Updated SuRF-UK framework for assessing the sustainability of soil and groundwater remediation
- PFAS fact sheets supporting the PFAS Remediation Technology Evaluation Framework

The current list of all CL:AIRE resources is provided in Appendix 3.

1.3 Other Activities

In addition to the above activities the TRG were asked to comment on, or contribute to, many of CL:AIRE's initiatives (listed in Appendix 1). Further contributions included the following:

- Reviewed training content for piling and ground improvement on land affected by contamination, sustainable materials management, options appraisal, vapour intrusion risk assessment, ecological risk assessment, advanced conceptual site models, and MNA/NSZD.
- Asbestos in air monitoring guidance
- Statistics in land contamination
- PFAS environmental quality standard

2. A LOOK AHEAD TO 2026

In 2026, the TRG will be reviewing bulletins, guidance reports, industry reports, webinars, eLearning modules and outputs from the industry initiatives CL:AIRE is involved in, as well as contributing strategic review, support and steering functions for all CL:AIRE's activities.

Appendix 1

CL:AIRE's Activities 2025

1. Industry Initiatives

The National Brownfield Forum & National Quality Mark Scheme
The National Brownfield Forum was set up in July 2011, originally established by Department for Communities and Local Government (DCLG[1]) and Department for Environment, Food and Rural Affairs (Defra). The aim of the Forum is to promote the sustainable use of land. It brings together private and public sector organisations to take an open and forward-looking strategic overview of current and future land use issues. The Forum considers UK-wide issues and references overseas experience where appropriate. Representation of organisations on the Forum is kept under review, and seeks to represent a broad spectrum of interests.

CL:AIRE acts as the secretariat for the Forum on a voluntary basis with all notes from the meeting being made publicly available from CL:AIRE's website at claire.co.uk/projects-and-initiatives/land-forum.html

In 2025, the National Brownfield Forum published its policy interaction report titled, *Interactions Between Government Policies Affecting the Planning and Development of Brownfield Land in England*.

The National Quality Mark Scheme (NQMS) for land affected by contamination is a scheme that has been developed by the National Brownfield Forum to provide visible identification of documents that have been checked for quality by a Suitably Qualified and experienced Person (SQP). It provides increased confidence and improved quality of submissions made under regulatory regimes, particularly planning applications, related to previously used land.

The NQMS was launched in January 2017 and CL:AIRE acts as the secretariat, and administers and manages the SQP register. More information can be found via claire.co.uk/nqms.

The Definition of Waste: Development Industry Code of Practice (DoW CoP)
The DoW CoP is an initiative to improve the sustainable development of land through the reuse of materials generated at a site. The DoW CoP provides a clear, consistent and streamlined process which enables the legitimate reuse of excavated materials on-site or their movement between sites with a significantly reduced regulatory burden. In many instances the DoW CoP can provide an alternative to Environmental Permits or Waste Exemptions when seeking to reuse excavated materials.

CL:AIRE administers the DoW CoP Declaration process and Qualified Person Register, and provides the Qualified Person training course.

CL:AIRE also keeps a Register of Materials and services which may fall within the DoW CoP. It aims to link material holders with service providers or organisations requiring materials in order to make the process of finding project partners an easier and quicker process.

In 2025, CL:AIRE continued to collaborate with the Environment Agency on an updated version of the DoW CoP which will be renamed the Soil Passport Scheme when it is released.

CL:AIRE also worked on related projects and services such as the Earthbanks initiative, the DoW CoP Insight Service, DoW CoP International and the International Soil Reuse Forum.

The dedicated website for this initiative is: claire.co.uk/projects-and-initiatives/dow-cop

[1] now Ministry of Housing, Communities & Local Government (MHCLG)

Asbestos in Soil
The Asbestos in Soil and Construction & Demolition Materials – Joint Industry Working Group (Asbestos in Soil JIWG for short) was established in November 2011. A wide range of both private and public sector organisations joined together to work together to meet the challenges posed by asbestos in soil. In 2016 CL:AIRE published the Asbestos in Soil JIWG guidance titled "Control of Asbestos Regulations 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction & Demolition materials: Industry Guidance (shortened name CAR-SOIL™)".

A key part of this project now involves developing and delivering training for all practitioners working with asbestos in soil and construction & demolition materials.

The dedicated website for this project is: claire.co.uk/asbestos

SuRF-UK & SuRF-International
SuRF-UK is the UKs Sustainable Remediation Forum – an initiative set up to progress the understanding of sustainable remediation in the UK. CL:AIRE is the secretariat for SuRF-UK.

In 2025, CL:AIRE published the updated framework document titled *A Framework for Assessing the Sustainability of Soil and Groundwater Remediation*.

All SuRF-UK publications can be found on its dedicated web page: https://claire.co.uk/surfuk

CL:AIRE also continues to perform the secretariat function for the International Sustainable Remediation Forum (SURF) meetings. The chairs of the International SURF and associated partners meet twice a year to share progress and learning amongst the different networks and develop opportunities for collaboration (claire.co.uk/projects-and-initiatives/surf-international.html).

Gas Protection Verification Accreditation Scheme
In 2021, CL:AIRE, with the support of an industry working group, launched the Gas Protection Verification Accreditation Scheme (GPVS). The scheme seeks to raise standards in membrane inspection, verification and reporting and provide all stakeholders involved in land contamination management with enough confidence that risks associated with ground gases have been adequately managed. CL:AIRE currently manages and administers the scheme, including awarding of accredited individuals (claire.co.uk/projects-and-initiatives/gpvs.html).

2. UK Projects & Publications

Water and Land Library (WALL)
The objective of WALL is to make freely available a comprehensive listing of links to water and land references, both past and present, produced by respected industry publishers including the Environment Agency, Association of Geotechnical and Geoenvironmental Specialists (AGS), Building Research Establishment (BRE), Construction Industry Research and Information Association (CIRIA), National House-Building Council (NHBC), CL:AIRE and others.

In 2025, WALL continued to grow in terms of usage and number of references listed.

Industry professionals can access WALL by going to claire.co.uk/wall. CL:AIRE actively seeks to grow WALL by asking relevant organisations and professionals visiting the site to fill in a feedback form to identify further documents to be included.

Category 4 Screening Level (C4SL) Project
Industry is collaborating to develop twenty C4SLs for a range of contaminants which have been selected following a consultative process choosing the contaminants which would be most useful to industry. The project is being delivered by a consortium of partners and CL:AIRE is acting as project manager supported by Simon Firth (Firth Consultants Ltd).

All reports can be downloaded from the dedicated project website: claire.co.uk/projects-and-initiatives/category-4-screening-levels.html

Legacy Wastes in the Coastal Zone: Environmental Risks and Management Futures
The legacy wastes project was a four-year research project funded by the Natural Environment Research Council (NERC) which ended in 2024. The project was approved by the CL:AIRE TRG as CL:AIRE Research Project RP27 and a CL:AIRE research bulletin will be available in 2026. Find more details on the project website: https://research.ncl.ac.uk/legacywastes/

PFAS
In 2025, CL:AIRE created a PFAS webpage (claire.co.uk/pfas) - a compilation of information relevant to the understanding and management of per- and polyfluoroalkyl substances (PFAS). CL:AIRE has been working on a number of PFAS publications which will be published in 2026.

Piling Guidance
The Environment Agency appointed CL:AIRE to update the 2001 piling guidance. Amy Juden and Steve Wilson of the Environmental Protection Group Ltd authored the updated version which was published in 2025: *Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention*. It is available to download here: claire.co.uk/piling

The work was guided by an industry steering group and reviewed and supported by the Environment Agency, Natural Resources Wales, Scottish Environment Protection Agency and the Northern Ireland Environment Agency.

3. European Projects

Enhanced and Innovative *In Situ* Biotechnologies for Contaminated Land Remediation (EiCLaR) – www.eiclar.org
CL:AIRE was part of an EU and China consortium called EiCLaR, composed of thirteen EU and five Chinese partners. Led by the University of Lyon, the four-year project ended in 2024. It developed scientific and technical innovations for *in situ* bioremediation technologies. CL:AIRE helped to deliver the knowledge transfer activities and published the outputs on its website in 2025.

4. Training

In 2025, CL:AIRE continued to provide a mixture of classroom-based and online training on the following topics, many of which can be delivered in-house:

- Asbestos in Soil and Construction & Demolition Materials CAR-SOIL™ – classroom
- Asbestos Awareness for Land Professionals – full & refresher – eLearning
- Definition of Waste Code of Practice (DoW CoP) – classroom
- Developing Advanced Conceptual Models for Contaminated Sites – classroom
- Good Practice for Risk Assessment for Coal Mine Gas Emissions – virtual
- Ground Gas Risk Assessment – classroom

- Groundwater Monitoring & Sampling – classroom
- Introduction to Brownfield Site Investigation – eLearning
- Introduction to Controlled Waters Detailed Quantitative Risk Assessment – classroom
- Introduction to Human Health Quantitative Risk Assessment – classroom
- Managing Contaminated Sites Using MNA & NSZD – classroom
- Non-Licensed Work including NNLW for Land Professionals – classroom
- Practical Aspects of Ground Gas, Vapour and Water Monitoring & Sampling – classroom
- Principles and Practice of Sustainable Remediation – classroom
- Soil and Groundwater Risk Assessment – eLearning
- Statistics for Land Contamination – classroom
- Sustainable Remediation – eLearning
- Verification of Gas Protection Systems – classroom

5. Membership Development

CL:AIRE's membership offer was reviewed and updated in 2025. There are approximately 100 member organisations, most of which are listed on the CL:AIRE website.

Appendix 2

TRG MEMBER BIOGRAPHIES (MARCH 2026)

Liz Gray, Ramboll (Chair)
Liz is an advocate for bringing excavated materials into the spotlight during the planning phase of a project to maximise reuse and sustainability benefits. As Director for Circular Economy and Resource Management services at Ramboll, she works with industry to improve resource efficiency in construction including the application of the DoWCoP to large infrastructure and multi-phase projects. She co-authored the inaugural IEMA guidance on the assessment of materials and waste in Environmental Impact Assessment and leads on materials and waste assessments in EIA for road, rail, housing and NSIP schemes, including those submitted for Development Consent Orders and Transport Works Act Orders.

With a background in land contamination, Liz's experience encompasses waste and resource management, due diligence, environmental management and management systems, compliance/assurance auditing and reporting and training development and delivery.

Karen Young, Jacobs UK Ltd (Deputy chair)
Karen is a Senior Associate Director and Technical Lead for the Jacobs UK land quality team. She has over 20 years of experience in contaminated land assessment, firstly as a regulator with Salford City Council and then Warrington Borough Council before becoming an environmental consultant with Jacobs. She has experience in contaminated land assessment and environmental impact assessment and has more recently focussed on materials management. Project experience ranges from undertaking fieldwork and risk assessments for the Avenue Coking Works remediation and restoration project, leading the full range of contamination reporting for a number of Environment Agency flood defence schemes, acting as Land Quality lead for East West Rail and delivering a multi-site MMP framework for HS2 Align.

Dr Kim Baines, Environment Agency
Kim is a Senior Nuclear Specialist at the Environment Agency with over 25 years' experience across nuclear regulation, new build, decommissioning and contaminated land management. She provides strategic and technical advice on regulatory policy, guidance and major programmes, working across government, regulators and industry.

Previously, Kim worked at the International Atomic Energy Agency, supporting international remediation projects and developing guidance on land contamination and long-term stewardship. She has also held a senior role at the Nuclear Decommissioning Authority, leading strategy for land quality and site end states, and has extensive experience in contaminated land assessment and remediation across both nuclear and wider brownfield sectors.

Bob Barnes, Environment Agency
Bob has worked for the Environment Agency for over 30 years. For 8 years he worked as the groundwater and contaminated land technical specialist for the Agency's Hampshire and the Isle of Wight operational area. Following this he joined the then National Groundwater and Contaminated Land Centre, now part of the Environment and Business Directorate of the Agency where he resides as a Principal Scientist within the Chief Scientist's Group.

Over the past 20+ years, in addition to acting as the technical assessor for end-of-waste applications with the potential to impact land and groundwater quality, he has undertaken waste research and developed technical guidance on all aspects of managing land contamination and supported operational colleagues' site investigations in the field.

Simon Burr, CampbellReith
Simon has been working in the environmental consultancy field since 1993, with specialisation in contaminated land risk assessment, investigation and remediation at a senior project management level. He has been responsible for a large number of regeneration projects and manages a number of client portfolios. He is a registered Specialist in Land Condition (SiLC), a Suitably Qualified Person (SQP). He was a member of SoBRA's sub-committee which developed the accreditation scheme for contaminated land risk assessors and is currently on the Ground Gas, and Radon, sub-committees for which he has inputted to several guidance documents. As well as responsibility for managing and delivering the land quality work of CampbellReith he has developed the waste soils assessment services and oversees the waste soil management across the practice to ensure appropriate reuse of waste soils across projects. He also manages the development of CampbellReith's human health, groundwater, vapour and ground gas risk assessment capabilities and has helped develop the practice's expertise in landfill regeneration, particularly with respect to ground gas risk management.

Ruth Chippendale, Shell
Ruth is a contaminated land and environmental professional with over 30 years' experience. She has a geology and hydrogeology background and is a Chartered Geologist, Chartered Environmentalist and Full Member of ISEP. Ruth's early career was in environmental consultancy where she was involved in site investigation, risk assessment and remediation services. She spent twenty years in Shell across various roles, including land contamination assessment and remediation across portfolios of sites. She also spent time living in Gabon, Australia and Qatar where she took on broader environmental management roles for upstream oil & gas operations. Ruth has previously served as Chair of the Energy Institute Soil, Waste and Groundwater Committee and serves as a judge for the Brownfield Awards.

Professor Max Coleman, Caltech and Emeritus Professor of Sedimentology, University of Reading
Max's recent research work focused on searching for life outside the Earth but he has more than 20 years' experience of research in contaminated land and water. Currently, in addition to his research, he is running a group of scientists and engineers developing new methods for measuring and characterizing the very small amount of microbiological contamination in and on spacecraft. This is important to prevent contamination of planetary locations while searching for life. The same methods will be applied to samples returned to Earth to prevent extraterrestrial threats to the Earth. His main personal research interests are in the interaction of microbial populations with sedimentary systems and environmental geochemistry and he is continuing work on contamination problems, especially natural attenuation approaches. His career as a research scientist has been split equally between employment in government, industrial and academic sectors.

As well as pure research, Max has applied multidisciplinary, fundamental scientific research to elicit solutions to practical problems in petroleum exploration and production, environmental pollution, radioactive waste storage and forensic science. He has written more than 140 publications mainly in stable isotope chemistry and its applications to geochemistry, hydrochemistry and microbial processes.

Steve Edgar, Vertase FLI
The Managing Director of Vertase FLI, Steve guides the business and the team through the more challenging remediation sites the UK has to offer. He initially cut his teeth as a geologist for a consultancy working on a variety of remediation projects in the nineties during the founding years of the remediation industry. He has spent most of his career in remediation contracting, designing and implementing *in situ* and *ex situ* remediation projects on sites ranging in size and complexity from petrol forecourts to tar and chemical processing plants, landfills.

As well as his technical background he also has significant experience of the regulatory, finance, planning and other drivers behind brownfield redevelopment. He has tackled some of the trickiest sites remediation wise, in the UK and for some of the most demanding clients. Professionally he has a passion for good science coupled with practicality which stands him and Vertase FLI in good stead within the industry.

Sarah Harris, Natural Resources Wales
Sarah is an Environmental Hydrogeologist with 9 years' experience in the field of Remediation Engineering, working on a variety of contaminated land and groundwater projects across the UK. Sarah has recently started a new role as a Lead Specialist Advisor in Hydrogeology for Natural Resources Wales; in her role, she provides an expert technical lead on Hydrogeology and helps manage the preparation of internal policy, programmes and guidance. She leads on, and project manages, specific and complex hydrogeological issues and projects. Previously, she was a Principal Remediation Consultant and Project Manager, with a strong technical focus primarily in Controlled Water Risk Assessment.

Sarah is a Chartered Environmentalist (CEnv) through the Institution of Environmental Sciences, and a full member of RemSoc where she also helped develop and now leads the Early Careers Practitioners subgroup; a platform that she uses to deliver remediation and brownfield land focussed information aimed specifically at those within the 5-10 years of their career. She was invited by the IES to join a Working Group focussed on Land Condition, with the principal purpose of developing evidence-led policy on land management. Through this, she helped in the production of the document " Sustainable, healthy and resilient: Practice-based approaches to land and soil management".

Tom Hayes, INEOS
Tom is a chartered environmental professional and a fellow of the Royal Geographical Society with over 25 years' experience in managing contaminated land and groundwater issues as well as other environmental topics such a mine closure, wastewater treatment, climate change assessment and mitigation, water scarcity assessment and biodiversity improvement. Tom's contaminated land experience includes a wide variety of remediation contracting, consulting, liability management within client organisations and M&A due diligence on both the buy and sale sides.

From 2017 Tom has worked in the global chemicals industry managing environmental labilities in the UK, continental Europe, the USA, South Africa and China. His work has included significant amounts of stakeholder engagement with regulators and NGOs, as well as financial auditors and market investors in a variety of different global jurisdictions.

Professor Mark Hodson, University of York
Mark is a professor of environmental geochemistry and mineralogy at the University of York. His current research interests cover three interrelated strands: water-rock interactions, remediation of contaminated land and earthworm ecology. His remediation work has focused on the use of soil amendments to immobilise inorganic contaminants *in situ* and assisted phytoremediation. He has also carried out work on the chemistry of acid mine drainage, contaminant bioavailability and the response of soil organisms to contamination.
Mark was a member of the Earth Systems and Environmental Sciences REF2014 and REF2021 subpanels, acting as subpanel chair for REF2021. He served as a panel Chair for various Natural Environment Research Council grant schemes from 2020 to 2023.

Amy Juden, The Environmental Protection Group Ltd
Amy is Director and Head of Geoenvironmental at The Environmental Protection Group Ltd (EPG). She is a Chartered Geologist and contaminated land specialist who has been working in the brownfield industry since 2012. Amy is passionate about determining the most sustainable (and therefore cost-effective) solutions for development on contaminated sites,

using a robust scientific approach to site investigation, monitoring and conceptualisation and risk assessment to get there. She is an environmentalist and as such has an interest in tracking and reducing embodied carbon in remediation, as key step towards reducing the industries impact on the climate crisis.

Amy has skills in a variety of human health detailed quantitative risk assessment techniques including for asbestos in soil, ground gases, radon, and vapour intrusion. She is a specialist in ground gas risk assessment and mitigation design and delivers training for CL:AIRE on ground gas risk assessment, and is author of 2023 NHBC Foundation Publication N94 Hazardous ground gas – an essential guide for housebuilders.

Amy is a committee member for the Yorkshire Contaminated Land Forum. She has previously sat on the committee for the Geological Society Contaminated Land Group, served as a judge for the Brownfield Awards, member of the SoBRA asbestos-in-soil working group. Amy was winner of Best Young Brownfield Professional in 2019.

Edward Lewis, Northern Ireland Environment Agency
Edward has a BA and MA in Earth Sciences from St Hugh's College, Oxford University and a Ph.D and DIC in Environmental Engineering from Imperial College, London.

Edward has 9 years' experience as a consultant Contaminant Hydrogeologist working for Atkins Ltd in Birmingham. His main experience during this time was in the fields of land contamination and landfill risk assessment. He also worked on a number of flood defence schemes. He is experienced in the use of most of the risk assessment software packages and technical requirements associated with groundwater/environmental risk assessment in the UK.

Since 2012 Edward has been at the Northern Ireland Environment Agency as a Senior Scientific Officer in the Land and Groundwater Team (LGWT). The principal work streams in the LGWT relate to land contamination addressed through the planning regime. He also provides hydrogeological and land contamination advice to colleagues across a range of teams with regard to groundwater resourcing, mining, cemeteries, end of waste applications and landfill risk assessments. He has been involved in a number of projects for the NIEA including the assessment of risks associated with the absence of Part III of the Waste and Contaminated Land (NI) Order 1997 in the province of Northern Ireland and the on-going Mobuoy Road remediation project.

Professor Brian Reid, University of East Anglia
Brian Reid is a Professor of Soil Science at the University of East Anglia (UEA, Norwich) and Adjunct Professor with the Chinese Academy of Science Institute for Urban Environment (Xiamen, China). His research has focused on: soil carbon; soil amendments e.g. biochar and paper crumble; soil interactions with contaminants agrochemicals, antibiotics and nutrients, and the fate and transport of these agents. In prior research Brian pioneered the development of cyclodextrin-based methods to assess hydrophobic organic contaminant bioavailability. He is a Technical Expert in Soil Quality to the BSI and a member of the ISO Soil Quality Technical Committee - TC190. Between 2023-24 Brian was interim Pro Vice Chancellor for Research and Innovation at UEA.

Dr Michael Rivett, GroundH_2O Plus Ltd
Michael is a contaminant hydrogeologist with over 35 years of groundwater experience gained mostly in the university sector. He is founding director of GroundH_2O Plus Ltd, a micro-SME based in Birmingham. His research background allows his company specialisation in research-oriented contaminant hydrogeological assessment and technical review of groundwater contamination issues of concern to a variety of sectors. These include contaminated land, nuclear, energy-development, water-industry and the developing world.

Michael has a significant track record of published research and projects working with industry on organic contaminants, L/DNAPLs, radiological contamination, groundwater – surface-water interactions, urban contaminated land, highway de-icing salt impacts, and groundwater sustainability. He has developing world groundwater experience gained through his 2016-21 part-time Research Fellowship position with the University of Strathclyde on their Malawi project.

Michael has previously served as Chair of the British Chapter of the International Association of Hydrogeologists and Chair of the Hydrogeological Group of the Geological Society. He has edited or authored several publications with CL:AIRE including the 'LNAPL handbook' and the Technical Bulletin on Natural Source Zone Depletion. He has served on the TRG since 2008.

Professor Steve Thornton, University of Sheffield
Steve is Professor of Environmental Engineering Science within the Groundwater Protection and Restoration Group at the University of Sheffield. He has over 25 years' experience in contaminant hydrogeology, with particular interest in the application of natural attenuation for pollution management, monitoring techniques and performance assessment of natural attenuation at field scale and *in situ* / engineered bioremediation.

Steve's current research involves field, laboratory and modelling studies on the natural attenuation and treatment of organic contaminants, petroleum hydrocarbons and ether oxygenates in groundwater, development of electrokinetic methods for enhanced bioremediation, development of reactive barrier design concepts for waste disposal sites and measures to support sustainable agriculture. He led the EU Marie Skłodowska-Curie Innovative Training Network, INSPIRATION, on the theme of managing soil and groundwater impacts from agriculture, and before that led the EU Marie Curie Initial Training network, ADVOCATE, on sustainable *in situ* remediation.

Steve is an Associate Editor of the international journal Ground Water and a Visiting Professor in the College of Water Sciences at Beijing Normal University in China and AGH University of Science and Technology in Poland.

EARLY CAREER PROFESSIONAL TRG MEMBER BIOGRAPHIES (MARCH 2026)

Daniel Farr, McAuliffe Group
Daniel Farr is a Senior Remediation Engineer at McAuliffe Group Ltd, with over five years' experience delivering complex brownfield and greenfield remediation projects across the UK. A member of CIWEM and an Early Career Practitioner (ECP) within RemSoc, Daniel holds several industry accreditations, including SMSTS, Academically Qualified CSCS, CAT B Asbestos Awareness, First Aid, and CL:AIRE CAR SOIL. He was awarded the Best Early Career Brownfield Professional at the 2025 Brownfield Awards.

Daniel is proficient in preparing and delivering Materials Management Plans (MMPs) and Verification Reports (VRs), as well as compiling and completing detailed earthworks and remediation validation reports for completed projects. In addition, he assists with the submission and implementation of key environmental permits—including Mobile Treatment Licences, discharge consents, and abstractions—ensuring regulatory compliance throughout each project phase.

In his role, Daniel provides vital technical and compliance support across numerous complex remediation projects, acting as a bridge between the technical office teams and on-site operatives. His work supports both geotechnical and geochemical compliance testing, helping to deliver safe, efficient, and sustainable project outcomes.

Max Rooke, Landmark Information Group
Max is an Environmental Consultant with over five years' experience in geoenvironmental consultancy and environmental due diligence sectors including ground investigation and risk assessment reports. Additionally he is currently working on internal training material for his team regarding fate and transport of prevalent environmental contaminants.

In previous geoenvironmental engineering roles Max undertook a wide range of projects including contaminated land assessments, intrusive site investigations, environmental monitoring and technical report preparation.

In his current role with Landmark Information Group, Max is involved in the delivery of environmental due diligence and technical advisory services. His responsibilities include preparing and reviewing technical reports, undertaking project scoping and quotations, and supporting the wider consultancy team through knowledge sharing and presentations. Max is currently pursuing Registered Environmental Practitioner (REnvP) and is an active member of the Geological Society.

Appendix 3

CL:AIRE RESOURCES

Technology Demonstration Project (TDP) Reports and Bulletins

TDP1 - Remediation trial using low temperature thermal desorption to treat hydrocarbon-contaminated soil (2004)
TDP2 - Remediation of Basford Gasworks using soil washing (2003)
TDP3 - Design, installation and performance assessment of a zero valent iron permeable reactive barrier in Monkstown, Northern Ireland (2001)
TDP4 - Slurry-phase bioreactor trial (2004)
TDP5 - A Reducing and Alkalinity Producing System (RAPS) for passive treatment of acidic, aluminium rich mine waters (2005)
TDP6 - Biopile field demonstration at the Avenue Coking Works (2004)
TDP9 - Design, installation and performance assessment of an air sparge curtain system (2004)
TDP12 - Bioremediation of the Coke Works and Former Colliery at Askern, Doncaster (2005)
TDP13 - A permeable reactive barrier for remediation of extremely polluted groundwater associated with a highly pyritic abandoned colliery spoil heap (2006)
TDP16 - Ex situ soil vapour extraction to remediate chlorinated hydrocarbons (2007)
TDP17 - A biological sequential reactive barrier (SEREBAR): design, installation and performance at a former manufactured gas plant site in south west England (2008)
TDP20 - Design and installation of a permeable reactive barrier to treat carbon disulphide contaminated groundwater (2009)
TDP24 - Application of thermally enhanced soil vapour extraction (TESVE) to remediate the unsaturated zone at the Western Storage Area, Harwell (2010)
TDP26 - In situ soil and groundwater decontamination using electric resistive heating technology (2008)
TDP28 - In situ radio frequency heating (ISRFH) of hydrocarbon contaminated chalk at a former service station in Kent (2011)
TDP30 - In situ 'deliverability' trials using calcium polysulphide to treat chromium contamination at Shawfield, Glasgow (2013)
TDP31 - Demonstration of the Arvia™ process of adsorption coupled with electrochemical regeneration for the on-site, ex situ, decomposition of organic contaminants in groundwater (2013)

Research Project (RP) Reports

RP3 - Processes controlling the natural attenuation of fuel hydrocarbons and MTBE in the UK Chalk aquifer (2006)
RP4 - Cost-effective investigation of contaminated land (2007)
RP6 - Phytoextraction of Metals: Investigation of hyperaccumulation and field testing (2005)

Other CL:AIRE Bulletins

Technical Bulletins (TB)

TB1 - Introduction to an integrated approach to the investigation of fractured rock aquifers contaminated with non-aqueous phase liquids (2002)
TB2 - Multilevel sampling systems (2002)
TB3 - Principles and practice for the collection of representative groundwater samples (2008)

TB4 - Parameterisation of aquifer hydraulic properties: A contaminant hydrogeology perspective (2009)
TB5 - The use of geophysical investigation techniques in the assessment of contaminated land and groundwater (2007)
TB7 - Improving the reliability of contaminated land assessment using statistical methods: Part 1 (2004)
TB9 - Stabilisation/Solidification Treatment and Remediation: Part 1: Summary of the State of Practice Reports I-IV STARNET (2004)
TB11 - A practical guide to investigating DNAPL releases in the subsurface (2004)
TB12 - Statistical assessment of contaminated land: Some implications of the 'Mean Value Test' (2006)
TB13 - Understanding soil washing (2007)
TB14 - Treatment of chromium contamination and chromium ore processing residue (2007)
TB15 - Accounting for the groundwater-surface water interface in contaminated land assessments (2011)
TB16 - Complete continuous monitoring in underfloor voids (2017)
TB17 - Ground gas monitoring and 'worst-case' conditions (2018)
TB18 - Continuous ground-gas monitoring and the lines of evidence approach to risk assessment (2019)
TB19 - Managing risks and liabilities associated with per- and polyfluoroalkyl substances (PFASs) (2019)
TB20 - An introduction to Natural Source Zone Depletion at LNAPL sites (2019)
TB21 - The GroundWater Spatiotemporal Data Analysis Tool (GWSDAT) for groundwater quality analyses (2019)
TB22 - An overview of the uses of PFAS to assist with identification of sites of concern (2023)

Case Study Bulletins (CSB)

CSB1 - Site characterisation in support of monitored natural attenuation of fuel hydrocarbons and MTBE in a chalk aquifer in Southern England (2002)
CSB2 - A constructed wetland to treat acid mine drainage from colliery spoils at Quaking Houses, County Durham (2002)
CSB3 - Portadown biological reactive barrier (2005)
CSB4 - Mine water treatment at Wheal Jane Tin Mine, Cornwall (2004)
CSB5 - Remediation trial at The Avenue using stabilisation/solidification and accelerated carbonation technology (2006)
CSB6 - Remediation trial at The Avenue using thermal treatment (2006)
CSB7 - Remediation trial at The Avenue using soil washing (2008)
CSB8 - Public affairs and communications on contaminated land projects (2007)
CSB9 - Remediation of a former landfill in Coventry: A practical application of the Definition of Waste: Development Industry Code of Practice in a cluster project (2011)
CSB10 - The development of risk based generic assessment criteria (GAC) for assessment of chronic human health risks from exposure to soil contaminants (2011)
CSB11 - Remediation of four sites in Northwest England: A successfully completed multi-site, multi-consultant cluster project (2013)
CSB12 - SEREBAR: A review of 11 years of operation (2018)

Research Bulletins (RB)

RB1 - Enhanced in situ bioremediation technique for manganese removal from mine waters (2003)
RB2 - FIRS Ferric Iron Remediation and Stabilisation: a novel electrokinetic technique for soil remediation and engineering (2003)
RB3 - Project SIReN: Research Projects (2006)
RB4 - Project SIReN – Future Research Needs (2006)
RB5 - Remediation of heavy metal pollution via bone meal amendments to soil: Field and laboratory trials (2007)
RB6 - Results of a laboratory microcosm study to determine the potential for bioremediation of chlorinated solvent DNAPL source areas (2006)
RB7 - Field Portable X-ray Fluorescence (FPXRF): A rapid and low cost alternative for measuring metals and metalloids in soils (2008)
RB8 - Modelling approaches for assessing risks associated with petroleum hydrocarbon spills in the UK Chalk aquifer (2009)
RB9 - Electrokinetic Ferric Iron Remediation and Stabilisation (FIRS) of hexavalent chromium contaminated soils: An ex situ field scale demonstration (2009)
RB10 - Bioremediation of heavy hydrocarbons – reducing uncertainty in meeting risk-based targets: laboratory to field scale (2010)
RB11 - Streamtube project overview: longitudinal transect assessment of the SABRE site DNAPL source zone (2010)
RB12 - Modelling food-chain transfer of contaminants in soil to terrestrial ecological receptors (2010)
RB13 - The utility of continuous monitoring in detection and prediction of "worst case" ground-gas concentration (2011)
RB14 - Generic human-health assessment criteria for arsenic at former coking works sites (2011)
RB15 - Generic human-health assessment criteria for benzo[a]pyrene at former coking works sites (2011)
RB16 - Generic human-health assessment criteria for benzene at former coking works sites (2011)
RB17 - A pragmatic approach to ground gas risk assessment (2012)
RB18 - Prioritisation of abandoned non-coal mine impacts on the environment (2014)
RB19 - Regeneration of Brownfield Land Using Sustainable Technologies (ROBUST) (2016)
RB20 - Investigating the potential for biostimulation to remediate uranium-contaminated groundwater (2015)
RB21 - Resource Recovery and Remediation of Alkaline Wastes (R3AW) (2019)

Site Bulletins (SB)

SB1 - MNA Bulletin (2005)
SB2 - SIReN (MNA) overview and description of projects (2005)
SB3 - Coal Mine Sites for Targeted Remediation Research:- The CoSTaR Initiative (2006)

Guidance Bulletins (GB)

GB1 - Stabilisation/Solidification for the treatment of contaminated soil (2005)
GB2 - Managing Japanese Knotweed on Development Sites: Code of Practice (2008)
GB3 - A Summary of the Definition of Waste: Development Industry Code of Practice (2023)
GB4 - Transport and Fate of LNAPL in the Subsurface (2015)

DoW CoP Bulletins (DoW CoP)

DoW CoP1 - Implementing the waste hierarchy at the Thames Tideway Chambers Wharf site (2019)

DoW CoP2 - Experience of using an MMP framework and staged declaration approach to MMPs on HS2 Align (2025)

Treatability Bulletins (TrB)

TrB1 - Soil washing (2011)

TrB2 - Permeable reactive barriers (2011)

TrB3 - Chemical oxidation (2013)

ADVOCATE Bulletins (AB)

AB1 - Remediation of TCE contaminated groundwater using permeable reactive barriers (2014)

AB2 - Selecting reactive materials for permeable barriers to remediate groundwater contaminated with heavy metals and BTEX: batch and column experiments (2014)

AB3 - Enhancing bioremediation of groundwater by microbial interaction with a solid state electrode: proof-of-concept (2014)

AB4 - River flows and riparian vegetation dynamics (2014)

AB5 - Balancing the Pillars of Technology Sustainability in Soil and Groundwater Remediation

AB6 - Nitrogen biotransformation in horizontal subsurfaceflow constructed wetlands treating contaminated groundwater (2015)

AB7 - Vadose zone characterisation at industrial contaminated sites (2015)

AB8 - The plume fringe: a zone of increased potential for biodegradation in contaminant plumes (2015)

AB9 - Delineating groundwater-surface water interaction (2015)

AB10 - Dual C-Cl isotope analysis to distinguish processes affecting chlorinated ethenes at field scale (2015)

AB11 - Water quality management on a catchment scale (2016)

EiCLaR Bulletins (EiCLaR)

EiCLaR01 – Overview (2025)

EiCLaR02 - Electro-nanobioremediation (2025)

EiCLaR03 - Monitored bioaugmentation (2025)

EiCLaR04 - Bioelectrochemical remediation (2025)

EiCLaR05 - Enhanced phytoremediation (2025)

EiCLaR06 - Decision support tool (2025)

INSPIRATION Bulletins (IB)

IB1 - Use of a novel integrated passive flux sampler to monitor the spreading of solutes in groundwater (2020)

IB2 - Development of sensors for monitoring nitrate in groundwater (2019)

IB3 - The proportional contribution of nitrate sources in surface water in a mesoscale river catchment with a land-use gradient (2019)

IB4 - Micropollutants as tracers for anthropogenic impacts on groundwater quality and recharge sources on a local scale – the case study of Fehraltorf, Switzerland (2019)

IB5 - Geological consistency in self-optimising groundwater models using nested particle filters (2019)
IB6 - Analysing N sources and transformation processes in groundwater under agricultural areas (chalk aquifer, Belgium) (2019)
IB7 - Experimental quantification and kinetics of nitrate reduction potential by reduced species in soil samples obtained from sandy aquifers (2019)
IB8 - Bio-restoration of metal-contaminated soil using biochar to enhance the productivity of marginal land (2019)
IB9 - Developing biosensors to measure the bioavailability of heavy metals in soil remediation (2019)
IB10 - Investigating the effects of biochar and brown coal waste on productivity of maize (2019)
IB11 - A decision support tool to select media to mitigate nutrients in farm drainage water (2019)
IB12 - Indicators for the selection of filter media options for phosphorus recycling to agricultural soils (2019)
IB13 - Isotope techniques for the analysis of δ18O of inorganic phosphate within aquatic ecosystems (2019)
IB14 - Integrated use of meta-analytical data to identify management trade-offs on crop growth, soil quality and environmental quality in agriculture (2019)
IB15 - Identification of priority areas to target pesticide pollution mitigation measures (2019)

NanoRem Bulletins (NanoRem)

NanoRem1 - Nanotechnology for Contaminated Land Remediation – Possibilities and Future Trends Resulting from the NanoRem Project (2016)
NanoRem2 - Appropriate Use of Nanoremediation in Contaminated Land Management (2017)
NanoRem3 - Generalised Guideline for Application of Nanoremediation (2017)
NanoRem4 - A Guide to Nanoparticles for the Remediation of Contaminated Sites (2016)
NanoRem5 - Development and Application of Analytical Methods for Monitoring Nanoparticles in Remediation (2017)
NanoRem6 - Forecasting Nanoparticle Transport in Support of In Situ Groundwater Remediation (2017)
NanoRem7 - NanoRem Pilot Site – Spolchemie I, Czech Republic: Nanoscale zero-valent iron remediation of chlorinated hydrocarbons (2017)
NanoRem8 - NanoRem Pilot Site – Spolchemie II, Czech Republic: Remediation of BTEX compounds using Nano-Goethite (2017)
NanoRem9 - NanoRem Pilot Site – Solvay, Switzerland: Nanoscale zero-valent iron remediation of chlorinated solvents (2017)
NanoRem10 - NanoRem Pilot Site – Balassagyarmat, Hungary: In Situ Groundwater Remediation Using Carbo-Iron® Nanoparticles (2017)
NanoRem11 - NanoRem Pilot Site – Neot Hovav, Israel: Transport of Iron Nanoparticles in Fractured Chalk (2017)
NanoRem12 - NanoRem Pilot Site – Nitrastur, Spain: Remediation of Arsenic in Groundwater Using Nanoscale Zero-valent Iron (2017)

SABRE Bulletins (SAB)

SAB1 - Project SABRE (Source Area BioRemediation) – an Overview (2010)
SAB2 - Site investigation techniques for DNAPL source and plume zone characterisation (2010)
SAB3 - Results of laboratory column studies to determine the potential for bioremediation of chlorinated solvent DNAPL source areas (2010)
SAB4 - Insights and modelling tools for designing and improving chlorinated solvent bioremediation applications (2010)
SAB5 - Overview of the SABRE field tests (2010)
SAB6 - Source Area DNAPL Bioremediation: performance monitoring and assessment (2012)

SUBR:IM Bulletins (SUB)

SUB1 - The role of the development industry in brownfield regeneration (2006)
SUB2 - Uncovering the true impacts of remediation (2007)
SUB3 - Climate change, pollutant linkage and brownfield regeneration (2007)
SUB4 - Measuring sustainability: What's in a number? (2007)
SUB5 - Avoiding future brownfield sites through design for deconstruction and the reuse of building components (2007)
SUB6 - Communicating risk on contaminated sites: How best to engage with local residents (2007)
SUB7 - Acid Tar Lagoons (2008)
SUB8 - Community Engagement, Urban Regeneration, and Sustainability (2008)
SUB9 - Quality in Land Remediation: Indicators and Protocols for Brownfield Land (2008)
SUB10 - The Use of Compost in the Regeneration of Brownfield Land (2008)
SUB11 - Integrated remediation, reclamation and greenspace creation on brownfield land (2009)
SUB12 - SUBR:IM (Sustainable Urban Brownfield Regeneration: Integrated Management) - An overview (2009)

UK Sustainable Remediation Forum (SuRF-UK) Resources

SuRF-UK: A Review of Published Sustainability Indicator Sets: How applicable are they to contaminated land remediation indicator-set development? (2009)
SuRF-UK: A Framework for Assessing the Sustainability of Soil and Groundwater Remediation (2010)
SuRF-UK: Annex 1 - The SuRF-UK Indicator Set for Sustainable Remediation Assessment (2011)
SuRF1 bulletin: Sustainability Assessment: Shell Terminal Facility, Madeira (2013)
SuRF2 bulletin: Upper Heyford - Remediation Options Appraisal (2013)
SuRF3 bulletin: Helpston Contaminated Land Project (2013)
SuRF4 bulletin: Phase 3 outputs (2014)
SuRF-UK: Sustainable Management Practices for Management of Land Contamination (2014)
SuRF-UK, NICOLE: A Review of the Legal and Regulatory Basis for Sustainable Remediation in the European Union and the United Kingdom (2015)
SuRF-UK: Certification of Sustainable Remediation Assessment (2019)
SuRF-UK:Terms of Reference (2019)

SuRF-UK: Supplementary Report 1 (SR1) of the SuRF-UK Framework: A General Approach to Sustainability Assessment for Use in Achieving Sustainable Remediation (2020)
SuRF-UK: Supplementary Report (SR2) of the SuRF-UK Framework: Selection of Indicators/Criteria for Use in Sustainability Assessment for Achieving Sustainable Remediation (2020)
Sustainable Management Practices for Management of Land Contamination (2021)
SuRF-UK Tier 1 Sustainability Assessment tool version 2 (2021)
SuRF5 bulletin: Resilience and Adaptation for Sustainable Remediation (2022)
SuRF6 bulletin: How sustainable remediation concepts align with ISO 14001:2015 environmental management systems (2023)
SuRF7 bulletin: Introduction to sustainable remediation (2023)
SuRF-UK: A Framework for Assessing the Sustainability of Soil and Groundwater Remediation (2025)

Concawe Bulletins

CON1 - Sustainable Remediation of a Former Vehicle Maintenance Facility for Mixed Use Development (2023)
CON2 - Natural Source Zone Depletion Assessment: UK Large-Scale Field Case Study (2023)
CON3 - Sustainable In Situ Thermal Remediation (2023)
CON4 - Sunshine on the Tyne – Sustainable Hydrocarbon Remediation (2023)
CON5 - Reactive Mat in Canal Catches Groundwater Contaminants (2023)
CON6 - Sustainable Remediation of a Petrol Release in a Chalk Aquifer (2023)
CON7 - Biosparge of Benzene and Orthodichlorobenzene in Groundwater: A Sustainable Remedy (2023)
CON8 - Sheen Mitigation Using an Oleophilic Bio Barrier - A New and Sustainable Remediation Technique (2023)
CON9 - Natural Source Zone Depletion in a Dismantled Petrol Station (2023)
CON10 - Sustainability Assessment Case Study – Groundwater Remediation Close-Out (2023)

Other Publications

UK Trade & Investment/EISU & CL:AIRE Trade Guide (2006)
CIEH & CL:AIRE Guidance on Comparing Soil Contamination Data with a Critical Concentration (2008)
The Definition of Waste: Development Industry Code of Practice (2008)
AGS, EIC & CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (2010)
Defra's "Contaminated Land Remediation Report" (2011)
The Definition of Waste: Development Industry Code of Practice (2011)
Defra's "A Risk/Benefit Approach to the Application of Iron Nanoparticles for the Remediation of Contaminated Sites in the Environment" (2012)
Cluster Guide (2012)
Gasworks Profiles (2014)
An Illustrated Handbook of LNAPL Transport and Fate in the Subsurface (2014)
Defra's "An Examination of Contaminated Land Sector Activity in England and Wales" (2015)
Soil and Groundwater Remediation Technologies for Former Gasworks and Gasholder Sites (2015)

Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance (2016)
Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological risk assessment methodologies (2017)
CL:AIRE 20th Anniversary Conference Special Publication (2020)
Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration (2020)
Good practice for risk assessment for coal mine gas emissions (2021)
Category 4 Screening Levels: Vinyl Chloride (2021)
Category 4 Screening Levels: Tetrachloroethene (PCE) (2021)
Category 4 Screening Levels: Trichloroethene (TCE) (2021)
Category 4 Screening Levels: 1,2-Dichloroethane (2022)
Category 4 Screening Levels: cis-1,2-Dichloroethene (2024)
Category 4 Screening Levels: trans-1,2-Dichloroethene (2024)
Category 4 Screening Levels: Naphthalene (2024)
Interim Category 4 Screening Levels for per- and polyfluoroalkyl substances (PFAS): perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorohexane sulfonic acid (PFHxS) and perfluorooctane sulfonic acid (PFOS) (2024)
Category 4 Screening Levels: Inorganic Mercury (2024)
National Brownfield Forum Survey Report (2024)
Guidance on the Assessment and Monitoring of Natural Attenuation of Contaminants in Groundwater (2024)
Guidance on Natural Source Zone Depletion (2024)
Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (2025)
National Brownfield Forum Report: Interactions Between Government Policies Affecting the Planning and Development of Brownfield Land in England (2025)

Podcasts & Webinars

The SuRF-UK framework for sustainable remediation (2011)
Continuous monitoring of ground-gas (2011)
CL:AIRE DNAPL site characterisation webinar (2011)
CL:AIRE DNAPL site remediation webinar (2011)
Using quality compost webinar: Soil manufacture and improvement in brownfield regeneration (WRAP, 2011)
Using quality compost webinar: Achieving successful biomass production on brownfield land (WRAP, 2011)
CL:AIRE LNAPL Illustrated Handbook videos (2016)
Screening Vapour Intrusion Risks at Petroleum Underground Storage Tank Sites webinar (2017)
Verification of Gas Protection Measures webinar (2019)
SuRF-UK Animation – Sustainable Remediation Explained (2019)
CL:AIRE 20th Anniversary Conference Presentation videos (2019)
Introduction to the Definition of Waste: Development Industry Code of Practice (2020)
Gas Protection Verification Accreditation Scheme (2021)
Category 4 Screening Levels Phase 2 (2021)
Good Practice for Risk Assessment for Coal Mine Gas Emissions (2021)
Procurement of Ground Gas Services (2025)
Piling and Ground Improvement on Contaminated Land - guidance overview (2025)

eLearning Modules

Remediation Technologies and Options Appraisal (2012)
Asbestos in Soil Awareness (2018)
Introduction to Brownfield Site Investigation (2021)
Introduction to Soil and Groundwater Risk Assessment (2021)
Sustainable Remediation Appraisal (2021)

All of the Publications and Online Training are available from the CL:AIRE website.