

Environmental Health Scotland

The Journal of the Royal Environmental Health Institute of Scotland



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THE PRESIDENT'S VIEW



Lisa McCann.

I am writing this, my last Presidential View, on a warm September day. It gives me the opportunity to reflect on my time as President of the Institute and conclude it has been both rewarding and unique. Who would have thought that when Past President David Duffy passed the baton to me in 2019, a few months later we would be dealing with a global pandemic on a scale never seen before. This public health crisis, that we are still dealing with more than 18 months later, has seen the Environmental Health Community along with many others rise to the challenge.

Personally, this has resulted in time flying past, despite all the restrictions and curtailments needed to help protect public health. We have all had to adapt, with one of the biggest adaptations being the move to virtual working. REHIS was no exception to this: meetings of the Institute's Council, Committees, Working Groups, and the AGM all went virtual, as did many of our Approved Training Centres. All of this was possible due to the support and work of the Institute's staff led by Chief Executive Jackie McCabe.

While Scotland is now at what has been termed Beyond Level Zero, we are still feeling the effects of the COVID-19 pandemic. It does, however, give us the opportunity to look at the future and possible return of in-person events or even hybrid ones. Unfortunately, COVID-19 has directly impacted many people's lives, and my thoughts and condolences are with all who have lost loved ones.

Turning to more positive news, the Institute is delighted to welcome our new Director of Training Sandra Williamson who took up post in August of this year. Welcome to the Team.

September 2021 also saw the first cohort of third-year students from the University of the West of Scotland start their practical placements with Local Authorities. I wish them all the very best in their practical training and academic studies. This year has also seen a new Higher Certificate in Food Practice brought out by the Scottish Food Safety Officers' Registration Board which combines the previous three Higher Certificates.

I would like to thank all the Institute's Council Members, Officer Bearers, Staff Members and Northern & Southern Centres, with special mention to Martin Henry, Jackie McCabe and Tom Bell, for their invaluable support both during my time as President and also my years as Junior and Senior Vice-President.

I will conclude by wishing the next Presidential Team all the best, and offering my support as they take on the task of leading the Institute.

LILIANNE LAUDER - AN APPRECIATION

The Institute acknowledges with sadness the death of Lillianne Lauder, an Environmental Health Officer and former member of the Institute. An appreciation follows:

Remembering Lillianne Lauder by Alistair Somerville, REHIS Past President (and proud EHO)

Lillianne Lauder, husband of Vincent McBride and mother to Gerry and Marco, passed away peacefully in the early hours of Friday 13th August with Vincent, Gerry and Marco at her bedside. She was visited at home the day before by her brothers, Gordon and Ian and their wives, Sharon and Ann.

It is always a time of great sadness when family, friends and colleagues pass away. It is a particular shock when that person is as young and full of life, as Lillianne was. This news will have come as a complete surprise to many, as most were not even aware she had been ill. Lillianne did not want her condition known and, with the best of intentions, did not want to put people in the position of having to ask her how she was. This being the case, I think it is now appropriate to let you know about Lillianne over the past few years.

Lillianne's illness (ovarian cancer) was diagnosed in August 2017. There followed a course of chemotherapy, surgery and further chemotherapy. Other than her time in hospital and whilst recovering from surgery, Lillianne continued to work at Midlothian Council rarely missing a day. She was always a positive person and this, together with her cheerfulness and bravery, helped her and her family to cope. When Lillianne was recuperating in hospital from major surgery the ward sister, doing her nightly rounds, came to Lillianne and said *"I can usually tell how my patients are doing just by looking at them. But I can't do that with you because you are always smiling."*

Following a period in remission, she required further regular treatments in 2019, with some limited periods of success. In August 2020 she was admitted to hospital with acute stomach pains. Significant cancerous activity was detected which required aggressive chemotherapy to get the cancer back under some control. She hoped the ongoing treatment would allow her to return to work but the condition and treatments meant she felt too ill to do so.

Earlier this year she volunteered to take part in a European-wide trial of a new drug which offered a chance to improve her situation and contribute to research.

Lillianne started the drug trial but her general health was too poor to continue with her second treatment, which was planned for 9 August. It was clear Lillianne's condition was deteriorating rapidly and thanks to the medical team, the local GP, community nursing team and Marie Curie caring service, she was able to receive treatment and palliative care at home.

Lillianne was born in Whitburn on 21 October 1966, a daughter to Robert and Annette Lauder and sister to Ian and Gordon. She was a bit of a 'Tomboy' and evidently liked to prove her strength by carrying bricks around the garden. She enjoyed a happy home and many family holidays but sadly lost her father when she was just 14. To help her deal with the situation, Lillianne threw herself into her studies and did well at school and at university.

Lillianne started the BSc course in Environmental Health at Strathclyde University in 1984 and began her career as an EHO after graduating and gaining her REHIS Diploma in October 1988. It was while working as an EHO in Edinburgh that she met Vincent, who she later married in 1995. In 1996 Gerry was born and Marco, 18 months later. When Gerry and Marco were in their early years at primary school, Lillianne worked for a while as a learning assistant at St Ninians Primary School. This was a post she really enjoyed and in her short time there, was a popular member of staff. The two boys are now all grown up and a real credit to them both. Lillianne always encouraged Gerry and Marco in all they did and was extremely proud of all their achievements, be they academic, in sport and at work.

Lillianne loved singing and playing music and at various stages took up playing the recorder, the piano, the guitar and the violin. Her love of music and singing continued and a few years ago she joined the Portobello Community Choir, thoroughly enjoying the singing and friendliness of the group. Holidays at home and abroad, picnics on the allotment, outings and evenings in, all with her family and friends. These were what she enjoyed most of all.

During lockdown, Lillianne completed a distance learning course at Aberdeen University in Nutrition and Health. As well as her long standing interest in this subject, Lillianne hoped to gain an insight into how she might be able to improve her own health. Typical of Lillianne, she said wanted to develop her knowledge even further with a view to helping others improve their health and lifestyle choices through education and advice.

Lilianne's Environmental Health career included working for Edinburgh, Scottish Borders and Midlothian Councils. She was recognised as an expert in many aspects of her profession and served on various national committees / working groups and as an examiner, for both REHIS and the IOA (Institute of Acoustics). She became a Chartered EHO in 2005.

Lilianne's main area of interest was in acoustics and noise control. After moving to the specialist Noise and Planning Section in Edinburgh, she quickly became extremely knowledgeable in environmental noise surveys, noise nuisance, event noise control, vibration monitoring and sound insulation testing. Whilst in this Section, she assisted in organising the REHIS 'Noise Update Conferences' which many of you will have attended, and achieved an MSc in Acoustics at Heriot Watt University (1993). As well as putting this knowledge to use for the benefit of her employers, Lilianne also ran IOA accredited courses in environmental acoustics. Lilianne was consistently thanked by students for her patience and commitment as a tutor, as well as recognised for her technical expertise.

Since 2004 Lilianne worked for Midlothian Council, latterly as a Principal Officer which involved her undertaking her own case work, along with the managerial responsibilities for the full Public Health remit. She was well respected by her staff and colleagues for her knowledge, experience and supportive manner. Latterly, Lilianne also worked for a few years as a part-time lecturer on the Environmental Health BSc course at the University of West of Scotland. Although undergoing chemotherapy treatment, she continued with the lecturing responsibilities and the travel to Paisley as, having given the commitment to that job, she didn't want to let anyone down.

I have been an EHO colleague, line-manager, fellow tutor and friend of Lilianne's for many years. Throughout I have been witness to her being a public servant in its truest sense, as a professional practitioner, tutor, manager and being the proudest of mothers.

She always went the extra mile to assist colleagues, students and members of the public alike and to look out for her 'boys'. Lilianne loved her job as an EHO but

loved her family more!

Lilianne was a great supporter of REHIS and below are some members' quotes! Thank you to all who contributed.

"When I took on the Chair of PHHWG, it was always a relief when Lilianne attended the meetings because I knew there would be solid advice and experience to draw on."

"When the profession was looking for guidance, it was Lilianne who volunteered and through her dedication and diplomacy managed to get a disagreeing group of consultees to agree a guidance document which is still very much in use, some ten years later."

"At the SPCCC meetings, her knowledge and expertise in acoustics were readily sought and willingly given for many years."

"Lilianne was an immense contributor to the PHHWG. She was also Chair of the South East Pollution Liaison Group from 2013 until she became ill. All of us attending that group learned a lot from Lilianne, particularly in relation to noise but also air quality and contaminated land."

"Lilianne was someone who excelled in all aspects of her professional life, dedicated to a fault and always went the extra mile to help her colleagues and students."

"Thankfully, there was a friendly face at the back of the room that I recognised, Lilianne."

"Lilianne was always patient, diplomatic and tenacious."

"Lilianne has been a tremendous support to me over the years."

"I can't overstate Lilianne's knowledge and commitment and I have been lucky to have learned from an extraordinary talent."

"She always had a cheery smile!" (A universal quote from all who knew her).

MANAGEMENT COMMITTEE

by Louise Cunningham, Senior Vice-President and Chair

The Management Committee is responsible for the general administration of the Institute's affairs, staffing matters, finances and public relations conducted through four meetings each year, all of which this year have been held via Microsoft Teams. Any urgent matters that arise are dealt with swiftly via email and I would like to thank the members of the committee for making themselves available to ensure all business is attended to in a professional and timely manner.

This will be my final article as Senior Vice-President ahead of my final Council meeting before, all being well, taking up the role of President at the forthcoming AGM. Even with the additional year in post, there are still many things I am learning and will continue to learn during my time with the Institute. I would like to take this opportunity to express my thanks to Jackie, Karen and the staff for their work and the effort that goes into preparing all our committee meetings.

Even with a gradual return to offices and the opportunity to meet in person now being available, as decided earlier in the year, we will continue to utilise video conferencing technology to host all forthcoming committees and meetings.

Strategic Review

A Strategic Review is undertaken by the Senior Vice-President every three years and this year that task has fallen to me. The themes I hope to incorporate in the review are as follows:

- Learnings from the Pandemic
- The Royal Charter
- Engagement with Partner Organisations

The time is right with restrictions having been lifted to take account of how the Institute operated under

restrictions by holding Council meetings, committees and training all via video conferencing, and to capture the positives and negatives noted by the members of Council during this time. Council members will be surveyed to take account of their experiences in relation to this.

The review will be available for consideration and comment later in the year. Future work resulting from the review will require the support of the membership to ensure the Institute continues to grow and strengthen our position at the forefront of Environmental Health in Scotland and internationally.

Recruitment

It is with great pleasure that, following a series of interviews, the Management Committee can confirm the appointment of Sandra Williamson to the role of Director of Training. Sandra, who commenced her new role on Monday 23 August 2021, comes with a wealth of knowledge and experience in Community Training, having previously been an Approved Presenter for several years. The Management Committee look forward to supporting her in the new role.

The Future of Environmental Health

We are approaching the end of a second year where the profile of Environmental Health continues to be discussed widely thanks to our response to COVID, the challenges of Brexit that have so far been met by over-stretched services and our all-round flexibility in adapting to and dealing with situations as and when they arise. Now we need to ask ourselves, how do we build from here? How do we work together to continue to strengthen the profession and community built around it?

PUBLIC HEALTH SCOTLAND'S PREPARATIONS FOR COP26

by Leigh Taylor

COP26, the 26th United Nations Climate Change Conference, will be hosted in Glasgow from 31 October to 12 November 2021 and will bring partners together to accelerate the goals of the Paris Agreement and tackle climate change.

The focus of Public Health Scotland (PHS) for the last 18 months has been on supporting the national response to the COVID-19 pandemic. In tandem, PHS is working with stakeholders to ensure plans are in place and we are ready to play our part in supporting the successful and safe delivery of COP26.

During COP26 tens of thousands of delegates and visitors will be welcomed to Scotland. Working with organisers, the UK Government, Scottish Government, NHS boards and other public health bodies, PHS will be conducting enhanced health surveillance throughout the period to identify any health protection issues.

Effective surveillance and response systems are already in place to identify and manage public health

issues. We gather and examine information from GPs, hospitals, laboratories and NHS Boards for a range of infections and threats, including COVID-19, to the health of people in Scotland. The surveillance undertaken during COP26 will allow us to identify and support investigations into any potential incidents.

If a public health risk is identified, PHS, NHS Boards and other stakeholders will jointly undertake investigations and take appropriate action. By combining national oversight and expertise with local knowledge, we are confident that any health protection risks will be addressed.

Environmental Health plays a crucial role in health protection, so we are also ready to participate in COP26. Decisive action must be taken now to limit global warming and ensure urgent climate action is taken. We look forward to hearing what commitments are made to tackle climate change at the COP26 summit, and remain dedicated to promote and drive real action.

* * *

NORTHERN CENTRE UPDATE

by Alan Yates, Northern Centre Chair

Moving into Autumn and Winter 2021 the Northern Centre are looking to arrange some lunchtime sessions over MS Teams. This format has been popular, especially given the geography and workload challenges we all face. Subjects being considered include an Asbestos Update and the implementation of the new Animal Licensing regime.

The Northern Centre AGM was held on Wednesday 29 September, and included a presentation on the potential challenges for Environmental Health from the new legislation on short term lets.

In early 2022 longer events are planned, including a course on Nuisance Investigation and one on Law and Practice for Health and Safety at Work Enforcement. We are also liaising with the Southern Centre on courses for 2022.

Please don't hesitate to get in touch if you have any suggestions for training or would like to assist the centre. REHISNorthernCentre@rehis.com.

HEALTH AND SAFETY EXECUTIVE

by Tara Burgess, Local Authority Unit, Health and Safety Executive

You may remember in the Summer REHIS article Lisa McCann, REHIS President and member, talked about the Environmental Health & Trading Standards COVID-19 Expert Group (ETC-19 Group). The group was set up for local authority officers to discuss their enforcement responsibilities with other enforcement bodies under Scottish coronavirus legislation and the Health and Safety at Work etc. Act 1974 (HSWA). HSE was part of this group and participated on a weekly basis. It has proven to be an invaluable source of news about what is happening and what is coming up in terms of changing Scottish coronavirus legislation and guidance. The regular discussions have allowed the enforcement community to agree consistency of approach in seeking compliance and to resolve any confusion on who has powers and under what legislation.

ETC-19 has had a major influence on the Scottish Government's approach, advising on what is reasonable and enforceable, and has paved the way for HSE to advise on a range of Scottish sectoral guidance and specific topics.

And thanks to the group's informality and good humour, it has lightened the mood with tales from the frontline such as when, early on in lockdown, one EHO had to stop a hairdresser from continuing to operate leaving his client with only half a haircut!

The group has raised the profile and value of public health and health and safety regulatory powers under Scottish and UK legislation, and proved so effective that it won an OPSS Highly Commended Award.

Fatal injuries in Agriculture

With coronavirus still at the forefront of everyone's mind, the devastating impact of "traditional" health and safety issues cannot be forgotten as HSE publishes the **"Fatal Injuries in Agriculture, Forestry and Fishing in Great Britain 2020/21"**.

Sadly, agriculture has the highest rate of fatal injuries across all industry sectors. As common farm equipment involves moving machinery such as tractors, ploughs and movers, it is no surprise that "transport – overturning vehicles or being struck by moving vehicles", caused the most deaths.

During 2020/21, 41 people were killed as a result of farming and shockingly the youngest person killed was just 2 years old. The published statistics and report can be found on the HSE website: <https://www.hse.gov.uk/agriculture/resources/fatal.htm>.

In keeping with the "traditional" health and safety theme, you may have read in the local news about an asbestos removal company fined £8,000 after a worker fell off a garage roof and fractured one of the vertebrae in his back. An investigation by the HSE found that the company (based in Elgin, Scotland) had failed to provide a suitable work platform from which to work to prevent employees falling from, or through, the roof of the garage.

HSE inspector Elizabeth Hunter said: *"Falls from height remain one of the most common causes of work-related fatalities in this country and the risks associated with working at height are well known."*

This is just another stark reminder of how putting suitable safety measures in place can prevent all-too-common accidents at work.

HSE statutory consultee for building safety

Back in Spring 2020, I updated you regarding plans to establish the new Building Safety Regulator (BSR) within HSE, overseeing the design, construction and occupation of high-risk buildings.

From 1 August this year, HSE took on a new statutory consultee role for planning applications that involve relevant high-rise residential buildings. Planning Gateway One (PGO) is the first stage of the new building safety regime. It will help to make sure that fire safety issues relevant to land use planning are considered by applicants and decision makers, and forms part of wider changes to the building safety regime for England.

More details about PGO can be found on gov.co.uk: <https://www.gov.uk/guidance/fire-safety-and-high-rise-residential-buildings-from-1-august-2021>.

Advice for pre-application for developers can be found at hse.gov.uk: <https://www.hse.gov.uk/landuseplanning/fire-safety.htm>.

PROFESSIONAL DEVELOPMENT

by Karen Keeley, Director of Professional Development

University of the West of Scotland Undergraduate Degree

The new accredited course at the University of the West of Scotland, BSc (Hons) in Environmental Health with Professional Practice, is progressing well. The first of the students completing practical training as part of the course commenced their placements across 10 different local authorities at the beginning of September. This dominates the third year of the degree programme, and will see a significant proportion of the practical training completed, with the final portion being completed at the end of the fourth year.

Officers working in local authorities with any student and/or graduate trainee EHOs are encouraged to get involved in training the EHOs of the future.

Masters Route to becoming an Environmental Health Officer

Unfortunately, there has not yet been progress with regards to establishing a Masters in Environmental Health programme which contains all the required academic elements and can be completed by students in Scotland. Work in this area is still progressing and the Institute is aware that this route to becoming an EHO is highly desired.

Chartered Environmental Health Officers

This Journal contains the list of those EHOs who have achieved or maintained Chartered status through compliance with the REHIS Scheme of Continuing Professional Development (CPD). The most recent submissions related to calendar year 2020. Due to the date of introduction of the requirement to submit a written submission, in addition to annual CPD hours, to hold Chartered EHO status, a number of written submissions were due for the period January 2018-December 2020. These have been very well received and show the significant variety of work in which Chartered EHOs are involved and constantly learning. A selection will continue to appear in Journals, with the permission of the writer.

Those achieving or maintaining Chartered status should be exceptionally proud as the status shows a real commitment to their profession and a commitment to on-going professional development. It is a clear way to evidence that you hold a qualification and have continued to achieve ongoing learning, which is of huge value should you be called upon to evidence your professional competence.

All Chartered EHOs are reminded to make use of the title and/or logo in the format as advised in the letter/email accompanying the award confirmation.

Title of 'Environmental Health Officer'

One of the three objectives of the Institute, as stated in the Royal Charter, is "maintaining, by examination or otherwise, high standards of professional practice and conduct on the part of Environmental Health Officers in Scotland".

Use of the title "Environmental Health Officer" in Scotland is restricted to those who have achieved the required qualifications/standards as determined by the Institute. The words "Student", "Graduate Trainee" or "Chartered" may pre-fix the title, where appropriate, as the requirements for each of these are prescribed in the Institute's Royal Charter and Bye Laws. The title should not be prefixed by any other terms, which are not included in the Royal Charter and/or Bye Laws.

The protection of a professional title is key to maintaining a profession and ensuring it retains its position as a "profession". As readers will be aware, the Review of Public Health in Scotland clearly defined Environmental Health Officers as core public health professionals and the correct use of the title should be acknowledged.

REHIS Scheme of Professional Practice

The REHIS Scheme of Professional Practice for Student/Graduate Trainee Environmental Health Officers has been subject to slight amendment and the current version is dated August 2021. The revised version has been sent to currently registered Students, Graduate Trainees and their Professional Practice Advisors.

Professional Interviews

Due to the COVID-19 pandemic, the date of the next professional interviews was changed. They will now take place on 3-5 May 2022. After this date, it is hoped the normal schedule will return with the following diet in the Autumn. The Autumn date is likely to be in September 2022.

SFSORB Higher Certificate in Food Practice

We have started receiving new registrants for the Scottish Food Safety Officers' Registration Board new qualification, the Higher Certificate in Food Practice. This replaces the three Higher Certificate qualifications: Food Premises Inspection, Food Standards Inspection

and Official Control. These will remain available for the foreseeable future to allow those who hold one or two of the Higher Certificates to complete the three, should they wish, but new registrants will register for the new qualification.

The new qualification requires specific academic knowledge to be evidenced, practical training with a local authority for a period of at least eight months, completion of a food inspection course, completion of a case study and two reports and presenting for two professional interviews.

Institute Professional Courses

Since the previous Journal, there was a request for an additional session of the COVID Compliance and General Enforcement training, which was delivered with Chartered EHO Chris Seyfried in July. This course was developed specifically for officers being employed into COVID/Public Health Compliance Officer roles and received very positive feedback.

The Institute's annual Health and Safety Update took place on the morning of Wednesday 8 September. The event was very well attended, and the variety of topics covered was welcomed by delegates, ranging from an update from HSE, overview of Safety Groups UK, accident investigation, local authority perspective in planning a closed road rally, safety in swimming pools and challenges faced by the beauty industry. The presentations will be made available on the members-only section of the REHIS website and can be a valuable CPD resource for those who were unable to make the event.

Should there be any queries regarding the above or indeed any other professional development matter, please contact the Director of Professional Development, karen.keeley@rehis.com.

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FOOD STANDARDS SCOTLAND



Pre-Packed for Direct Sale (PPDS) Legislation

New legislation which will require food businesses to include the product name and full ingredients list on food sold prepacked for direct sale (PPDS) comes into force on **1 October 2021** in Scotland and the rest of the UK. The new legislation will improve information about allergens and other ingredients in food prepared and packed in advance, mainly at the same place where it is sold, before being offered to consumers.

Businesses must include the name of the food along with the ingredients list with any of the 14 food allergens required to be declared by law emphasised on it if they are ingredients of the food.

Examples of PPDS foods include sandwiches placed into packaging by the food business and sold from the same premises, wrapped deli counter goods such as cheese and meats, and boxed salads placed on a refrigerated shelf prior to sale.

These allergens can be emphasised by:

- a different **text colour**
- writing in **bold**
- underlining.

For further support and guidance and access to a short video explaining the legislation change, please visit:

www.foodstandards.gov.scot/prepacked.

REHIS DIPLOMA IN ENVIRONMENTAL HEALTH AND SFSORB HIGHER CERTIFICATE AWARDS

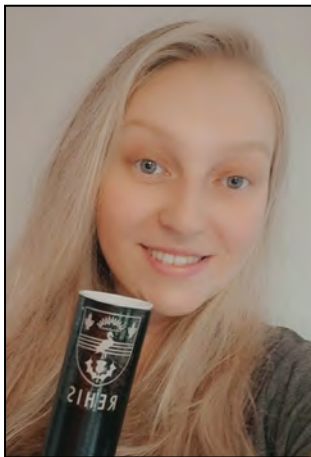
The professional examination diet took place on 18-20 May 2021. The successful recipients of the Diploma in Environmental Health and SFSORB Higher Certificate received their awards by post. The Institute would like to congratulate all the recipients.

REHIS Diploma in Environmental Health

- Frances Anne Gillies
- Alice Love
- Claire Mills
- Adeyemi Hilary Roland

SFSORB Higher Certificate in Food Standards Inspection

- Susan Messem



*Frances Anne Gillies
Diploma in Environmental Health.*



*Alice Love
Diploma in Environmental Health.*



*Claire Mills
Diploma in Environmental Health.*



*Adeyemi Hilary Roland
Diploma in Environmental Health.*



*Susan Messem
Higher Certificate in Food Standards Inspection.*

CHARTERED ENVIRONMENTAL HEALTH OFFICERS 2021

The following Environmental Health Officer members have been designated as Chartered Environmental Health Officers for 2021:

Beatrice Aitken	Ann Dalziel	Paul Kerr
Rachel Allan	Martin Diamond	John W Laird
Oyunn Anshus	Neil A Doherty	Kenneth A Lang
Brian Auld	Andrew M Douglas	Andrew Lansdowne
Evonne M Bauer	Jeffrey Duffield	Michael Lapsley
John N Bell	Jake Fenton	Gordon Lauder
Lynne M Bissett	Rachael Flanagan	Sharon Lauder
Robert Bowditch	Bernard J Forteath	Brian Lawrie
Paul Bradley	Peter Fowler	Elaina J Leach
Aileen A Brodie	Kim Fricker	John M Lee
David W Brown	Steven Glass	Sharon I Lindsay
Catherine Busson	Lynsey Glover	John Love
Douglas A Caldwell	Alan H Gow	Kenneth MacDonald
Andrew Campbell	Cheryl Graham	Martin MacNiven
Andrea Carson	David A Gray	Moira Malcolm
Fiona M Chapman	Lindsey E Green	Dawn Manson
Angus J Clark	Tanya Grosle	Anna M Martin
Carrie Cooper	Laura Gunning	Hannah J Mason
Graeme G Corner	Fiona M Hamilton	Ralph N McAleer
Maria Corrigan	Joseph Harkin	Cameron McAuley
Paul Couper	Luke Henderson	Lisa McCann
Catriona Cowan	Ruth Catherine Horan	Alan McCormick
Courtney Jack Craig	Nicole Hume	Lorna J McCoull
Laura Craig	Coila Hunter	Gail McElroy
Lynn Crothers	David Hunter	Emma McGuinness
Alasdair Cruickshank	Andy Hurst	Rachel McInnes
Jacqueline Cunningham	Clare Ireland	Jim McIntyre
Louise Cunningham	Martin D Keeley	James G McLennan
Christopher Dalrymple	Karen Keeley	Lindsey-Anne McNeil

Margaret J McWhinnie
 Nicola A Medalova
 Arlene Montgomery
 Alan Morrison
 Christine Morrison
 Ann-Marie Murray
 John E Murray
 Craig D Myles
 Alexander S Ness
 Lynn Parsler
 Eilidh S Paton
 Fiona Prentice
 Christopher Ratter
 Sheena Redmond

Graham Robertson
 Mark Robertson
 Ruth M Robertson
 Christopher Seyfried
 Crawford Sibbald
 Rhianon Sinclair
 Lynn S Slight
 Andrew Smith
 Carolyn Smith
 Emilie L Smith
 Fraser Smith
 Alana C Steven
 William S I Stobie
 Archibald C Strang

Marion T Summers
 Alan R Tait
 Monica Tait
 Nigel A Taylor
 Catherine Trebbi
 Susan Wadsworth
 Carol Ann Walker
 Mark Walsh
 Stephen A Williamson
 Alan Yates
 Christina Yildirim
 Andrew R Young

* * *

ENVIRONMENTAL HEALTH UPDATE & AGM FRIDAY 19 NOVEMBER 2021 THE CARNEGIE CONFERENCE CENTRE



The Carnegie Conference Centre, Halbeath Road, Dunfermline will be the venue for this year's Environmental Health Update and AGM. The event is free to REHIS members and REHIS course presenters of Approved Training Centres. There will also be an option to join remotely by MS Teams. Full details will be available soon on the Institute's website www.rehis.com.

INTERNATIONAL FEDERATION OF ENVIRONMENTAL HEALTH

by Bernard Forteath, REHIS Council representative to IFEH



During the current COVID pandemic, the IFEH, like other organisations worldwide, has only been able to meet by using Zoom or Microsoft teams. Although essential to keep in contact with members, I think most, if not all, organisations look forward to the day when we can meet in person again. Meetings do tend to be shorter because they lack the usual interchange of ideas and experiences during coffee and lunch breaks.

The most recent meeting of the IFEH Council and the AGM took place in the afternoon of Saturday 21 August and lasted just over five hours. And yes, the REHIS representatives stayed the course! The Council meeting itself was reasonably well attended with more than 30 individuals from 14 member organisations in attendance. As usual more delegates joined as the meeting progressed. The Africa Group, in particular, was very well represented. For the New Zealand delegate, a 13:00 GMT (14:00 BST) start meant joining the meeting at 01:00 on the Sunday morning...and she was still there at the end of the meeting!

The Council meeting is split into progress sections and updates from member organisations. These updates outlined what environmental health colleagues are involved in now. It is no surprise that everyone is fully engaged with work associated with COVID, although not at the same level as in the UK. From what we heard, it is clear that in Scotland, environmental health professionals are well to the fore and currently with restrictions being eased, officers are involved in the ongoing delivery of COVID testing, managing COVID cluster investigations, assisting education with COVID monitoring, and in planning environmental health work for recovery.

In many countries the levels of vaccination are still at a low level and this does determine the rate by which they come out of lockdown. The 2020 World Environmental Health Congress, due to be held in Kuala Lumpur, had to be postponed and is now planned for August 2022. Our Malaysian colleagues will make a final decision by mid-December on whether or not to proceed with an event in Kuala Lumpur or hold the congress via Zoom.

One piece of good news for the Federation is that we have received an invitation to attend the 26th UN

Climate Change Conference (COP26) in Glasgow on 31 October-12 November 2021. The COP26 summit will bring parties together in an attempt to accelerate action towards the goals set out in the Paris Agreement and the UN Framework Convention on Climate Change. The Federation will be represented at the conference by the IFEH President, Professor Susana Paixão, from the Portuguese Society of Environmental Health.

The Annual General Meeting took place at the end of the Council meeting. The main business of this meeting was the approval of the annual accounts, approving the budget for the following year, and for the re-appointment of a number of honorary posts such as the Webmaster, Journal Editor and also the Company Secretary.

A motion to alter the procedures manual of the Federation, which concerned the production of meeting minutes, was proposed by REHIS. Minutes of meetings should be produced within a month of the meeting taking place. Unfortunately, over the past two years this has not been happening and in order to tighten up on this aspect of the Federation's business, the motion proposed that all minutes of IFEH meetings should be circulated to members within three weeks of the meetings taking place. The motion was unanimously accepted.

The Federation was conceived in 1982 with three original member organisations, REHIS being one, and has since grown to almost 50 member organisations representing over 40,000 environmental health professionals worldwide. The purpose of the Federation is to bring together national associations of environmental health professionals so that, collectively, they can promote environmental health as a vital part of sustainable development and share knowledge and experience.

The IFEH encourages member organisations to work together in regions – Europe, Americas, Africa, Middle East and Asia Pacific – on regional projects and seminars and workshops. REHIS is a prominent member of the European Federation of Environmental Health (EFEH) and in the past has had representatives who have acted as chair and also secretary of the group. The next meeting of the EFEH will be held virtually over the weekend of the 25/26 September 2021 and a report from this meeting will feature in a future edition of this Journal.

SCOTTISH ENVIRONMENT PROTECTION AGENCY (SEPA)

by SEPA

RNA Testing

The Scottish Environment Protection Agency (SEPA) was amongst the first European agencies to begin exploratory work to pinpoint fragments of coronavirus' ribonucleic acid (RNA) in local wastewater samples across Scotland. Our scientific capabilities and expertise in designing and implementing monitoring networks made us ideally suited to contributing to the national effort to combat COVID-19. Partnership working was central to the delivery of the work. With the backing of Scottish Government and Public Health Scotland (PHS), we worked alongside Scottish Water, CREW (Centre of Expertise for Waters) and academic partners from the University of Edinburgh's Roslin Institute and Heriot-Watt University.

The wastewater monitoring programme run by SEPA and Scottish Water identifies when genetic material from the virus is present in wastewater.

While these "genetic fragments" present no known risk of infecting people with COVID-19, it is possible to link these results to specific areas and highlight where infections are increasing or decreasing, helping Scotland to understand the prevalence and distribution of the virus.

Find out more about SEPA's work by visiting media.sepa.org.uk.

Tackling waste crime

Scotland's waste industry worked hard to keep services running in challenging circumstances throughout the pandemic-induced lockdown.



Everyone is responsible for the safe and correct disposal of their own waste. Fly-tipping is a crime that can save criminals thousands of pounds in disposal costs, creating a burden for those delivering essential services, blighting our rural land and countryside and putting the health and wellbeing of our communities at risk.

A new waste crime trend has emerged in Scotland as seven lorries of waste were found in North Lanarkshire in recent months. Similar instances of waste being placed into trailers and being abandoned at roadsides and industrial locations has been seen in England over recent months. Working alongside partners through the Serious Organised Crime Taskforce and the Joint Unit for Waste Crime, SEPA has been tracking this growing trend across the UK since last year, but seven trailers in eight months indicates this may now be a new disposal route for waste criminals in Scotland.

This type of crime has a real impact on local communities, legitimate business and public agencies. A high proportion of individuals or companies that are involved in waste crime are also associated with other criminality and sadly this activity has continued during the pandemic.

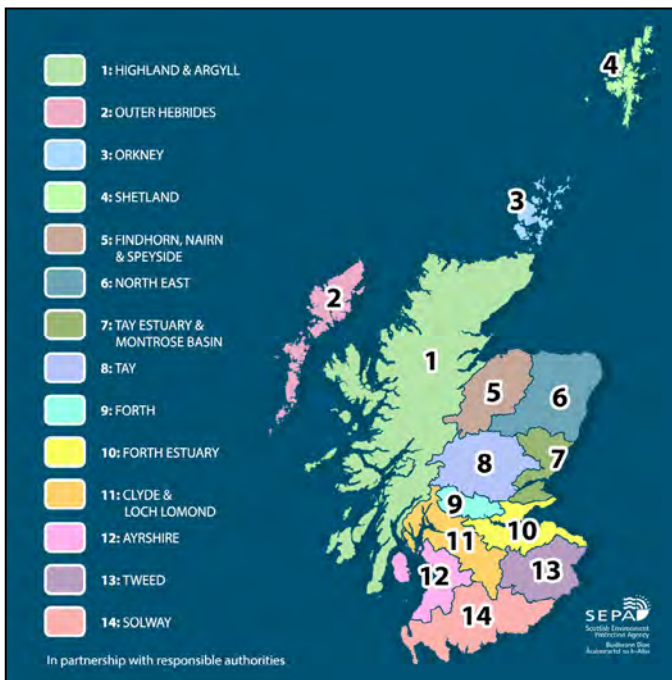
Householders and businesses can help to tackle these issues and have a legal duty to check that anyone collecting their waste is registered.

If you transport waste or arrange waste management services for others, you must be registered as a waste carrier or broker.

You can check whether a business is currently a registered waste carrier or broker on the SEPA website, sepa.org.uk/wastecarriers.

Consultation on the Flood Risk Management Plans and Local Flood Risk Management Plans

SEPA and local authorities are currently consulting on the flood risk management plans and local flood risk management plans for Scotland. The plans set the short to long-term objectives and establish how actions will be delivered to manage the devastating impact of flooding. They embed information on climate change to establish the actions required now to adapt to future flood risk and ensure Scotland is resilient to flooding.



There are currently 284,000 homes, businesses, and services at flood risk in Scotland and climate change is projected to increase this number by an estimated 110,000 by the 2080s.

Following feedback from this consultation, SEPA will publish a flood risk management plan for each of the 14 Local Plan Districts. Each plan will confirm the immediate priorities for flood risk management as well as set out the future direction to be taken by all responsible authorities.

The consultation was launched on 30 July and members of the public and businesses have until 31 October to comment on it. We encourage you to share your views and shape the way that flood risk is managed in Scotland.

Have your say by visiting our consultation hub: consultation.sepa.org.uk.

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MEMBERSHIP

ENVIRONMENTAL HEALTH PROFESSIONALS

REHIS exists to improve and protect public health in Scotland through education, training and qualifications in Environmental Health.

REHIS is a UK Competent Authority and the awarding body for the professional titles 'Environmental Health Officer' and 'Chartered Environmental Health Officer', and has members across the UK and further afield.

NEW MEMBERS ALWAYS WELCOME

www.rehis.com

DIRECTOR OF TRAINING



Sandra Williamson.

Sandra Williamson was appointed Director of Training in August 2021, succeeding Jackie McCabe who took up the role of Chief Executive in 2020. Prior to this appointment, Sandra was a freelance training consultant for many years, identifying, delivering, and applying training solutions in response to business needs for clients across the public and private sector.

Following her graduation from Queen Margaret College with a HND in Hotel and Institutional Management and a short time as a self-employed caterer, she took up the position of Head Housekeeper in the Dragonara Hotel, Edinburgh. This role required operational and budgetary responsibility for all housekeeping and laundry services, ongoing monitoring of hygiene, health and safety standards and recruitment and selection of staff. As a key member of the Management Team, she carried out duty management shifts for the whole hotel. She greatly enjoyed working in what was, at the time, regarded as the best hotel in Edinburgh. Meeting artistes such as David Bowie, Eric Clapton and Meat Loaf amongst many others allowed access to tickets for their concerts and a great staff perk. Some stories and anecdotes about certain guests are committed only to memory!

Her next job role was Catering Counsellor with the Hotel and Catering Industry Training Board (HCITB), the lead body for the industry (now People 1st). In the Kirkcaldy

then Stirling training centres, Sandra was responsible for the recruitment and training of suitable candidates to government Youth and Adult programmes and engaging with industry to secure appropriate work placements. Unique from other providers of these schemes, the HCITB delivered the off-job training element in their training centres and Sandra used her knowledge gained from college and industry to facilitate this task. She also delivered a range of licenced programmes to the trainees' workplace supervisors and managers, ensuring that they had the necessary skills to train and assess their trainees. Sandra's own development during this employment allowed her to gain her Training Diploma, Training Practice & Assessment, Training Certificate and Training Techniques Development qualifications.

While working for the HCITB Sandra met her future husband, and when a job was advertised by Lothian Regional Council for a Training Officer in their newly formed Catering and Cleaning Direct Service Organisation (formed to respond to the challenge of Competitive Tendering) she took the opportunity to separate working and personal lives. When all services were retained in-house, Sandra was promoted to Training Manager where her key remit was to determine a strategy to establish and manage a training department within the service, which would ensure that the training and development plan met the needs of the business plan. The key training needs identified were food hygiene for all levels of catering staff and skills training for cleaning staff. Sandra quickly gained her REHIS Advanced Food Hygiene Diploma to kickstart that process with her field trainers gaining their diplomas shortly afterwards along with their Advanced Health and Safety qualifications. She and her team worked in partnership with other accredited bodies such as British Institute of Cleaning Science (BICS) and the local colleges. When the Catering and Cleaning Departments gained BS5750 respectively, Sandra was a member of both Quality Management teams and became a BS5750 Auditor.

The Catering and Cleaning department along with the Training Department was fragmented when local government re-organisation was introduced. At that point, Sandra was expecting her first child and while on maternity leave with her daughter, she made the decision to leave local authority and establish herself as a freelance training consultant. It was a fortuitous decision as two years later she had her son and shortly afterward the Williamson family moved to Leven in Fife.

As a long-standing member of REHIS and a REHIS Approved Training Centre, she continued throughout her freelance career to deliver three levels of Food Hygiene Courses and was asked to assist in the early piloting of the REHIS Elementary Food and Health Course. She gained her RIPH Diploma in Nutrition and Health (Health in the Community) which updated her nutrition knowledge, and became a member of the working party. Sandra also delivered the REHIS Joint Award course in Allergy Awareness and could offer the REHIS Control of Infection course. On occasion she was contracted as an associate trainer for other training centres and colleges.

Sandra strongly believes that knowledge and training and development in areas such as Food, Health and Wellbeing and Control of Infection will play a pivotal role in how Scotland can start to recover from the devastation of COVID-19 as well as the continued promotion of Food Safety and HACCP, Cleaning and Disinfection and Health and Safety. She will work closely with Approved Training Centres and those wishing to become centres and presenters, and use her training experience, communication skills and public health knowledge to support Community Training which will align and continue to add value to the culture and core values of REHIS.

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REHIS SECONDARY SCHOOLS INITIATIVE



REHIS Secondary Schools Initiative is announced as a finalist for the FDF Awards 2021

The REHIS Secondary Schools Initiative, which is co-funded by the Institute and Food Standards Scotland, has been shortlisted as a finalist in the Education category for the Food and Drink Federation (FDF) Awards 2021. The FDF Awards recognise and reward excellence for innovation, competitiveness and talent in the food and drink industry. Each year, organisations from across the food and drink supply chain in the UK enter the FDF Awards.

The Institute has worked in partnership with Food Standards Scotland for many years to make the REHIS Elementary Food Hygiene Course and latterly the REHIS Elementary Food and Health Course available to secondary schools all over Scotland.

The Initiative has reached 150,000 secondary school pupils in over 200 secondary schools in Scotland to give the opportunity to gain two nationally, industry-recognised qualifications, providing skills to benefit them and local employers. For many students who leave by S5, the qualifications have provided an opportunity to gain employment in local food businesses. According to teachers the Initiative has given pupils a sense of achievement, increased self-esteem and helped with progression in senior school, offering them new career paths, lifelong skills in food safety and nutrition and part-time jobs in hospitality, and supporting careers in the food industry.

Winners were announced at the FDF Awards ceremony on 16 September 2021 but unfortunately the Institute's Initiative just lost out to the Chilled Food Association who won for their Chilled Education programme.

THE PANDEMIC AND THE THIRD SECTOR

by Fiona Mhairi Hamilton, Chartered Environmental Health officer

I am a chartered Environmental Health Officer working in the Third Sector, and was employed by the Scottish charity Food Train from October 2019 until mid-December 2020. This was my first term of employment in the Third Sector. I had heard about the work of Food Train at a REHIS event some years before and was interested in their ethos and the services provided.

When we think about Public Health in the wider sense, the provision of food and preventing malnutrition in the population are key to ensuring that good health is achieved. Food Standards Scotland was created in 2015 and one of their three objectives is to improve the extent to which members of the public have diets conducive to good health. Whilst there is an emphasis in Scotland, as in many countries, on reducing obesity in the population, in my opinion, improving health includes the prevention of malnutrition. Loss of dentition, dexterity, and physical strength as well as lack of access can be factors leading to food insecurity and potential malnutrition in the elderly.

Access to food and challenging food insecurity is where Food Train are leading. They are a membership organisation providing a weekly grocery delivery service for adults over 65 years of age in seven Local Authority areas: Glasgow, Renfrewshire, East Renfrewshire, West Lothian, Dundee, Stirlingshire, and Clackmannanshire. The organisation started in Dumfries in 1995 with a volunteer workforce and have gone from strength to strength, most recently providing service in the East Renfrewshire and Clackmannanshire areas.

Residents of the Local Authority areas where there is a Food Train branch may refer themselves for the grocery delivery service, usually by telephone. Referrals are also received from various health professionals, social work staff and family members and these may be made by telephone or electronically using the website www.thefoodtrain.co.uk.

As an enforcement officer for more years than I will admit to, working in the Third Sector has been a serious learning experience. Even though I have years of very varied personal volunteering experience and have worked in varying Local Authority areas, the commitment and work ethic I experienced was incredible. The workforce are mostly volunteers, which is staggering and humbling, and this important work is funding-dependent, strenuous and emotionally challenging.

I realised early on that the gap between what Local

Authorities would like to offer in relation to emergency food provision, and what they can deliver, widened during the pandemic. In the area I was employed to develop (pre the global pandemic) there was no longer a shopping service provided by homecare staff and when meeting potential clients and other Third Sector partners, this came up time and time again.

The number of adults over 65 years of age in the population is increasing year on year. As the population ages, many are forced to rely on external services to provide that most basic of human needs, a supply of fresh food.

The Mid Year Population Estimates Scotland mid 2018 published on 25 April 2019 advises that over the last 35 years the proportion of people aged 65 years or over has increased from 14% to 19% of Scotland's population by mid-2018. The increase in the population of older age groups has been much higher than younger age groups over the last 20 years. The largest increase has been in the 75 years or over age group (+ 31%).*

*NRS Scotland mid 2018 population estimate

<https://www.nrscotland.gov.uk/files/statistics/population-estimates/mid-18/mid-year-pop-est-18-pub.pdf>.

When you consider that the population aged 70 years or over were advised to stay at home in early 2020 due to the global pandemic, it is no surprise that this impacted directly on all of those involved in food provision services.

The ability to purchase food remotely requires a knowledge of technology that in my experience at Food Train, is not always available to those aged over 65 in many communities. The use of internet ordering systems, telephone ordering and mobile phone apps and other web-based services are not suitable for those with impaired sight or hearing, poor dexterity and no router or other means of connecting to the world wide web. These services and the required technology that we take for granted were out of reach for many customers. I will never forget taking a customer's grocery list and discussing what they would like, when they told me they had no idea what was available in the supermarket as they had not been shopping for years due to ill health and mobility issues.

In November 2018, Eat Well Age Well (which is a Food Train project), commissioned the University of Glasgow working in partnership with Food Train to complete a research study on older people's health and wellbeing:

The Role of Food Security and Malnutrition Risk with Psychosocial Indicators of Healthy Ageing in Place: The Food Train Service and the Eat Well Age Well Partnership Project*

This study

- *was a mixed methods study to understand the problem of malnutrition*
- *scoped the extent of malnutrition and risk factors*
- *trialled different measures and obtained qualitative perceptions around food access, preparation and use of technology.*

The research highlighted that food insecurity is putting older people in Scotland at risk of becoming underweight and malnourished

- *Barriers such as loneliness and the changing nature of the high street are leading to a lack of reliable access to healthy and nutritious food*
- *Many older people reported finding cooking at home more challenging, often relying on cold and convenience food such as sandwiches*
- *The result was four calls to action documented in the pdf below.*

https://www.eatwellagewell.org.uk/gustudy*

<https://www.eatwellagewell.org.uk/images/4CallstoAction.pdf>

In November 2020, the branch where I was employed passed the milestone of 35,000 deliveries, having been in operation for just seven years. This figure does not include all the emergency shopping trips, for example when new customers seek assistance and they literally have no food at home. Those leaving hospital may be fortunate enough to receive a food package from the Red Cross but this service is not available in all areas. This may mean elderly patients returning home to an empty fridge following discharge from hospital. This is where Food Train receives many referrals from health professionals, and good relationships were established with the discharge teams at local hospitals.

At the onset of the public lockdown response to the COVID-19 pandemic, the number of enquiries requesting the grocery delivery service grew dramatically, and a 70% increase in workload was experienced. In common with all workplaces, Food Train were required to help prevent the spread of COVID-19, while still delivering vital food supplies to the vulnerable client group. Prior to this, new referrals were being received in steady numbers but of a much smaller magnitude.

A perfect storm, you may say, and most definitely a Public Health emergency. Like many, I had not experienced this type of public health risk before. The risks to health from COVID-19 have been well publicised, and as a non-medic, I will not seek to explain these.

What is perhaps less obvious is the potential Public Health emergency due to malnutrition in the most vulnerable in the community. Lack of access to food was exacerbated by the global pandemic, and by government advice to stay indoors, especially for those over 70 because the risk to their health was so great. Many of the new referrals we received had previously been able to shop independently and were now fearful of doing so. Access to fresh food was about to become even more difficult for adults in this age group.

Clients called constantly seeking reassurance. They were frequently upset and concerned that they would go hungry. We were extremely fortunate that the level of volunteer enquiries also grew, often from those who had never volunteered but felt compelled to help. The effect on the service was profound as we were now experiencing an unprecedented number of daily calls from not only new clients, but also existing members worried about food shortages. As a very caring work force, this was physically and emotionally tiring, and we were fortunate that we had caring and compassionate management. The lack of online shopping availability, for those who were previously able to use this service, meant that they relied on Food Train even more and for those unable to access the internet or suffering physical impairment, there was often no help available when lockdown commenced.

The humanitarian response from Local Authorities had yet to be formalised and implemented. Emergency funding from the Scottish Government meant that further temporary staffing was provided at Food Train branches to alleviate the massive operational pressure arising from delivering the service to so many extra households.

The humanitarian response from community groups and Local Authorities began to have an impact and this included free food packages and home delivery, but in those first few weeks this was all unclear, and to those not placed in the shielding category there was great uncertainty.

Our delivery service had to adapt, and quickly. Restrictions meant that rather than the standard team of three volunteers on each vehicle, only two were permitted. This was coupled with a strict regime of face coverings, social distancing, hand sanitiser usage and increased cleaning and disinfection of hand contact surfaces, including the delivery crates used. Having had a sustainable delivery model for some time, Food Train were already using reusable crates rather than single use bags. However this did require an increased cleaning regime including the cool bags used for temperature control.

A doorstep delivery model, required to help prevent community spread of the virus, proved difficult for those with severe mobility issues and those that were bed bound. Policies and procedures required adaptation

in order that those that were unable to move groceries from the doorstep to the kitchen were able to safely receive their food. Prior to the pandemic, volunteers had unpacked groceries, put them away and spent time with the Food Train members and so this was also an adjustment for those who looked forward to the weekly blether at delivery time.

In conjunction with the grocery delivery service, Food Train also provide a meal-sharing model in Meal Makers. Established in 2012, this has so far provided over 42,000 food shares. As this offers an opportunity for the diner and the cook to share a meal and have a chat, the impact from COVID-19 was devastating for those depending on this contact. Having assessed the impact of this lack of contact in all service areas and the risks associated, new services were very quickly established where volunteers called Food Train members by telephone and offered a weekly chat to try to alleviate rising levels of loneliness and isolation. This new service quickly grew and by the end of July 2020, over 10,000 check-in calls had been made to members.

Throughout this, the many teams within Food Train were adapting to home working and all the resulting challenges and pressures. New channels of communication were established and although the grocery delivery service continued to operate from the local branches, routine meetings had to be carried out online. The furlough scheme was not an option for staff as the delivery services must be provided 52 weeks a year.

Further funding was sought and the Food Train Connects service started in Autumn 2020 whilst still in

the throes of rising COVID numbers and a pandemic that seemed to have a vice grip on the country. The new services provide one-to-one shopping for clients where there is no local Food Train grocery service, and a telephone befriending service. The search for more volunteers commenced and all the background checks and interviews were done at great speed with new teams working from home being established and work systems put into place.

Throughout these changes a few branches received electric vehicles by way of a successful Scottish Power Green Economy Funding bid. Whilst installation of some charging points was seriously delayed by the pandemic, all works were completed in 2020, and the charge points in use daily. This substantial investment further demonstrated and maintained the charity's commitment to sustainability.

2020 was the 25th anniversary of Food Train and it is certain that everyone will remember this year but possibly not for the anniversary, all planned celebrations having been cancelled. I am very hopeful that the next milestone will be fully celebrated.

My time with them was enjoyable and memorable, and counts as one of the best employment experiences I have had.

Editor's Note: Fiona is a Chartered EHO and submitted the full report in compliance with the REHIS Scheme of Continuing Professional Development, showing personal new learning/development in the subject of public health.

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AN EVALUATION OF RECENT DRINKING WATER QUALITY INCIDENTS RELATING TO ALGAL BLOOMS IN SCOTLAND

by Moira Malcolm, Drinking Water Specialist, DWQR

Introduction

In Scotland the effects of climate change are becoming noticeable which is having a variety of effects on drinking water, including:

- private water supplies – especially in the northeast of the country – are becoming less reliable with groundwater supplies not being fully replenished over winter;
- the pH balance of water sources is becoming less acidic which has the effect of releasing more organic compounds into the water which are difficult to remove by the treatment methods put in place at these treatment works (which were often designed 40+ years ago for a very different water chemistry); and
- raw waters previously not affected by algal growth have been experiencing taste and odour problems noticeable to the local population.

This paper shall document several recent water quality incidents relating to algal growth and examine how they were managed and what mitigation measures can be put in place to prevent future issues.

Description

Over the summer months when the source (“raw”) water is warmer, naturally present algal levels can increase in surface waters used as drinking water sources such as lochs and reservoirs. On their degradation they produce chemical by-products including the compounds geosmin and 2-Methylisoborneol (MIB) which impart an “earthy/musty” taste and odour to the water and are difficult to remove during the water treatment process at water treatment works (WTW). They can also produce toxins such as microcystin from cyanobacteria which can be harmful to health.

Geosmin and MIB can be detected by the human palate down to 5ng/l. As it is a requirement (The Public Water Supplies (Scotland) Regulations 2014) that drinking water supplied by Scottish Water must be “acceptable to consumers”, it is important that Scottish Water ensure drinking water is free of even very low levels of algal products.

Scottish Water undertake routine checks on their raw waters and take regular samples where algae are known to be an issue. Recently taste and odour complaints have been received in areas which have never had such problems in the past. It is the assumption that this

is due to climate change, and therefore it is anticipated that these issues will increase in the future.

Case Study 1: Rosebery

Scottish Water began to receive complaints of an earthy/musty taste and smell from consumers in the Rosebery water supply zone in East and Midlothian at the end of May 2018 which continued until September. A total of 106 consumer contacts for earthy/musty taste or smell were recorded over this period.

Weekly raw water monitoring is undertaken from Gladhouse reservoir for MIB. MIB showed elevated levels on 7 June, and an increase in consumer complaints was recorded from 28 June. These results led process science staff to investigate changing the blend of water serving Rosebery WTW from 45% Megget, 55% Gladhouse; to 55% Megget, 45% Gladhouse which was undertaken on 2 July.

The blend was further changed on 23 July to 60% Megget, 40% Gladhouse following a rise of MIB in both the raw and final water and a further increase in consumer contacts. This coincided with a reduction in MIB levels and algal counts in the raw water (as the peak of the warmest water had passed).

Monitoring for MIB in the raw and final water, and in distribution, continued throughout the summer. Elevated MIB levels and algal growth were exhibited in the raw water, but these were removed by the treatment process for the majority of the summer. MIB in concentrations detectable by the average person (>10ng/l) were only found in the final water for one week at the end of July, although levels >5ng/l (detectable by sensitive palates) were found from May-August.

A site meeting was called on 6 August to discuss the options available for the WTW, given that a similar event had occurred at Carron Valley WTW in 2017. The option used at Carron Valley, namely temporary powdered activated carbon (PAC) dosing on the rapid gravity filters (RGFs), was not considered appropriate due to the scheduled filter upgrade at Rosebery using “Filtralite” media. Several long-term mitigation measures were investigated. Further actions were agreed to relieve pressure on the WTW: changes in the network were made to reduce the output of Rosebery to 2MLD; a raw water feed of 2.5MLD from Megget reservoir was opened to assist with the aeration and dilution of Gladhouse reservoir; and a temporary overland run to waste was installed to prevent recycling of the supernatant to the head of the works.

A further blend change to 70% Megget, 30% Gladhouse was made on 13 August. This was the maximum blend available as Megget also supplies other WTWs, and Marchbank WTW was experiencing low pressure.

MIB concentrations in distribution fell below 5ng/l by the end of August and consumer contacts also tailed off at this time.

The incident was caused by MIB released by algae in the raw water at Gladhouse reservoir. This was exacerbated by the structural condition of the reservoir which meant it was kept at a level of 1 metre below the spill level. The combination of the shallow reservoir and the hot weather experienced in summer 2018 gave optimal conditions for algal growth. The weather event was unprecedented. However given that the Drinking Water Safety Plan for Rosebery lists the likelihood of geosmin and MIB as “almost certain” and acknowledges that current treatment processes will not remove them, and that a similar incident occurred at Carron Valley the previous year, it is disappointing that no planning had been done to prepare for such an event.

Case Study 2: Tullich

On Saturday 25 May 2019 the operator on site at Tullich WTW in Oban noticed a musty taste from his water bottle. He informed his team leader and they checked that the works had no ongoing performance issues. It was escalated to the Water Operations North Manager and the Public Health Team (PHT) where it was discussed as a possible algal issue. During the conversation it was noted that nine taste and odour contacts had been received from 23-25 May, so sampling for algae and geosmin and a catchment review were scheduled. The operator checked the source at Loch Na Gleann A Bhearraidh but found nothing of significance.

By Monday 27, 23 consumer contacts had been received. An incident team discussed and planned to change the source water to Loch Nell, which had been used during the commissioning of the new WTW and as a result was still connected to the works.

On Tuesday 28, the sampling confirmed that the source loch had geosmin levels of 383.0ng/l and there were elevated levels in the filtered and final water at Tullich WTW (13.3 and 15.1ng/l), and in the zone (15.7ng/l). This indicated that the treatment process was removing the majority of geosmin, but was not eliminating it. In addition the supernatant return was recirculating water with a level of 34-46ng/l to the head of the works and this was diverted to waste. The proposed alternative source – Loch Nell – had very low levels of geosmin and these results were consistent over the next few days of sampling. On 28 May, the plans to change the source water to Loch Nell were agreed with SEPA and finalised. The pipework was flushed and Water Operations input was increased to manage the new raw water and optimise treatment control. The source was

then changed on 29 May, and an immediate decrease in geosmin levels was demonstrated through the treatment stages, with interstage, final water and zonal samples reducing the following day to <5.0ng/l. Elevated levels were found in service reservoirs over the next few days and by 6 June all samples demonstrated normal levels of geosmin. The final consumer contact was recorded on 8 June.

Geosmin levels in Loch Na Gleann A Bhearraidh had dropped to 58ng/l by 4 June, but remained elevated around this level until the end of June. After several off-line trials to ensure that low level (30-40ng/l) of geosmin from Loch Na Gleann A Bhearraidh could be removed by the WTW, the raw water was returned to this source in mid-August, where the geosmin level in the loch was now 5ng/l.

During the incident a total of 39 taste and odour consumer contacts were received.

The incident was caused by high levels of geosmin in the raw water from Loch Na Gleann A Bhearraidh, which was not removed by the WTW and persisted in the network – despite the change of source water – for two weeks. Scottish Water was unaware that geosmin was a potential issue in the raw water, as the previous WTW used a different mix of treatment solutions including ozonation which would have removed any geosmin present. Following the incident a full catchment management survey was undertaken which found no significant issues. However the loch is quite shallow so it may be susceptible to geosmin formation.

The incident could have been reduced in length by the scouring and flushing of service reservoirs. This was not undertaken at the time as there were concerns that the Clear Water Tank (CWT) had dropped following the flushing of the pipework from Loch Nell, and it was assumed the new water would be pulled through the whole network within 24 hours. In reality it took 10 days to achieve this.

Case Study 3: Rawburn

A scheduled raw water sample from the Watch Water reservoir on 20 April 2020 noted an increase in total algal cells (3190/ml) which prompted further sampling from the raw and final water of Rawburn WTW at Eyemouth and weekly visual checks of the reservoir. Throughout April and May sampling continued and the plant was optimised as no specific treatment is available at Rawburn for the removal of algae or associated taste and odour compounds. Algal cell counts continued to increase and by the end of June, raw water geosmin was also increasing.

Consumer contacts started to be received for “earth/musty” taste and odour consistent with geosmin from 6 July and prompted distribution sampling which began on 9 July. This corresponded with a peak in raw water

geosmin of 143.5ng/l and corresponding 18.0ng/l in the final water on 10 July. The peak in distribution was on 14 July at 17.7ng/l.

An operations meeting was called on 14 July to discuss potential interventions, resulting in increased sampling in the raw and final waters and in distribution, and the draw-off point at the reservoir was changed to minimise surface water algae entry at the intake. Investigations were also made in the use of specialist PAC treatment and samples from an alternative source were analysed to see if this could be used but the geosmin levels were comparable to Watch Water.

Sampling continued throughout August and September, with levels in distribution finally dropping below the detectable taste and odour threshold at the end of August. Consumer contacts were recorded until 18 August. Investigations into the water quality continued, and a catchment visit was made in September to assess the catchment and any potential further interventions required.

Across July and August, a total of 32 consumer contacts were received.

Considerations

Mitigation Methods

In all drinking water quality incidents, Scottish Water commit to actions to bring the incident to conclusion, prevent recurrence of the issue to protect public health and comply with the legislation. In addition to these actions, DWQR also make recommendations which are actioned by Scottish Water. All actions and recommendations have completion dates which are tracked and the incidents are not signed off by DWQR until these are complete and DWQR is content.

In the above case studies, several actions were taken by Scottish Water. During the incidents this included:

- Increased monitoring of the raw, final and water in distribution to accurately record and monitor the progress of the incident;
- Rezoning of the network (where available) to dilute with water from a different treatment works;
- Changing the source of raw waters to reduce the amount of algal products entering the WTW;
- Stopping any supernatant flow to the head of the works. There is often a portion of water that is recirculated from the backwash water to the head of the works which assists with formation of a floc for coagulation, and reduces the impact of waste for further processing or discharge. However this also will recirculate any algal by-products removed by filtration and reintroduce the compounds into the water from treatment.

A number of actions were implemented to prevent a recurrence of the incidents. These included:

- Increased monitoring of the raw water throughout future summer months and lower trigger levels for action when algal counts or by-products start to rise
- The installation of a “bubble curtain” at the intake on one reservoir. This prevents the algae entering the WTW and also disrupts and mixes the water column reducing algal build up
- Providing more permanent “run to waste” options at WTWs to prevent affected water from entering distribution
- Installing new treatment options for the removal of algal by-products at the WTW. Specifically powdered activated carbon (PAC) which adsorbs the algal products within a filter column and removes them from the water.

All actions are site specific to each WTW and tailored to the individual needs of the WTW and water chemistry. There are a number of other options available for algal prevention/removal that were not considered appropriate in these circumstances.

- The ‘Resmix’ system circulates water throughout a reservoir and mixes it vertically within the water column, thus reducing the amount of time any algae have to grow and also disrupting the settlement of phosphate and other nutrients required for algal growth;
- The prevention of livestock to gain access to the catchment directly next to the reservoir to reduce nutrient loading. In the cases featured there is no agricultural land adjacent to the raw water sources;
- Using straw bales in the reservoir to adsorb active algae and remove them from the water.

Following the incidents detailed above, Scottish Water have set up a working group to examine the issue across Scotland and to anticipate where algal problems will occur to ensure that mitigation methods are put in place thus ensuring that drinking water quality remains compliant. This includes more detailed monitoring of a number of reservoirs with no previous history of algal issues and are not thought to be at risk of developing them. This group includes the three sites examined in this paper.

Outcomes

The European Council ratified the recast Drinking Water Directive (2017/0332) in October 2020 which the Scottish Government has two years to transpose into national legislation. As the Directive was ratified before the UK left the European Union it is required to be transposed into UK law. In addition to this, Scottish Ministers have instructed the Scottish Government to “keep pace” with European legislation and to transpose it in full by January 2023.

This Directive includes a number of articles relating to catchment management and changes in the sampling and analysis requirements which are applicable to algal management and removal. A full risk assessment of the catchment, including raw water sampling, is required where warranted by the risk assessment. In addition the maximum level of 10µg/l of microcystin has been added as a parameter in raw water. This is derived from new World Health Organisation guidance on algae and cyanobacteria toxicity which was published in March 2021.

Both Scottish Water and DWQR are involved in a water sector research group on reservoirs, specifically looking at issues with algae. This group is comprised of water providers, regulators and a number of research institutions and is currently bidding for NERC grants to look at the issues involved with algal growth, the impacts of currently used mitigation methods and the development of new mitigation methods that can be used by the water industry as a whole.

Conclusion

There is a growing problem of algal growth and by-product production in Scottish reservoirs which impacts directly on drinking water quality. Scottish Water have dealt with a number of drinking water quality incidents over the last few years where algal growth has negatively impacted the water quality, causing consumers to reject the water due to taste and odour issues. DWQR has assessed these incidents and Scottish Water have put in place a number of actions to mitigate the issue and prevent recurrence at these sites, and is conducting research on the wider issue of algal growth throughout Scottish surface waters. Legislative changes to monitor and act on this information will be introduced into Scottish legislation following the transposition of the recast Drinking Water Directive by January 2023.

Editor's Note: Moira is a Chartered EHO and submitted the full report in compliance with the REHIS Scheme of Continuing Professional Development, showing personal new learning/development in the subject of environmental public health.



Air Curtain 2.



Air Curtain 3.



Bubble Curtain 7.

* * *

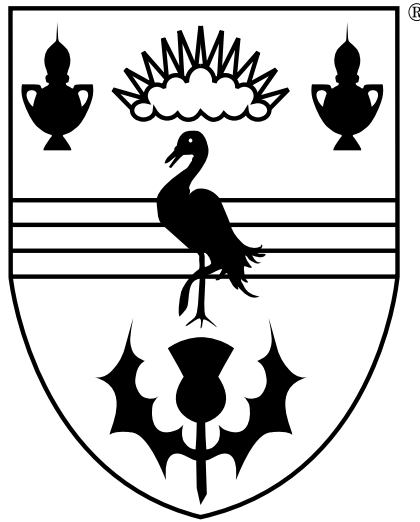
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