Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

DRINKING WATER QUALITY IN PUBLIC SUPPLIES

2021

ENVIRONMENTAL PROTECTION AGENCY

The EPA is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *Implementing regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *Providing high quality, targeted and timely environmental data, information and assessment to inform decision making.*

Advocacy: *Working with others to advocate for a clean, productive and well protected environment and for sustainable environmental practices.*

Our responsibilities include:

Licensing

- Large-scale industrial, waste and petrol storage activities;
- Urban waste water discharges;
- The contained use and controlled release of Genetically Modified Organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

National Environmental Enforcement

- Audit and inspection of EPA licensed facilities;
- Drive the implementation of best practice in regulated activities and facilities;
- Oversee local authority responsibilities for environmental protection;
- Regulate the quality of public drinking water and enforce urban waste water discharge authorisations;
- Assess and report on public and private drinking water quality;
- Coordinate a network of public service organisations to support action against environmental crime;
- Prosecute those who flout environmental law and damage the environment.

Waste Management and Chemicals in the Environment

- Implement and enforce waste regulations including national enforcement issues;
- Prepare and publish national waste statistics and the National Hazardous Waste Management Plan;
- Develop and implement the National Waste Prevention Programme;
- Implement and report on legislation on the control of chemicals in the environment.

Water Management

- Engage with national and regional governance and operational structures to implement the Water Framework Directive;
- Monitor, assess and report on the quality of rivers, lakes, transitional and coastal waters, bathing waters and groundwaters, and measurement of water levels and river flows.

Climate Science & Climate Change

- Publish Ireland's greenhouse gas emission inventories and projections;
- Provide the Secretariat to the Climate Change Advisory Council and support to the National Dialogue on Climate Action;
- Support National, EU and UN Climate Science and Policy development activities.

Environmental Monitoring & Assessment

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution, and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.
- Environmental Research and Development
- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

Radiological Protection

- Monitoring radiation levels and assess public exposure to ionising radiation and electromagnetic fields;
- Assist in developing national plans for emergencies arising from nuclear accidents;
- Monitor developments abroad relating to nuclear installations and radiological safety;
- Provide, or oversee the provision of, specialist radiation protection services.

Guidance, Awareness Raising, and Accessible Information

- Provide independent evidence-based reporting, advice and guidance to Government, industry and the public on environmental and radiological protection topics;
- Promote the link between health and wellbeing, the economy and a clean environment;
- Promote environmental awareness including supporting behaviours for resource efficiency and climate transition;
- Promote radon testing in homes and workplaces and encourage remediation where necessary.

Partnership and networking

- Work with international and national agencies, regional and local authorities, non-governmental organisations, representative bodies and government departments to deliver environmental and radiological protection, research coordination and science-based decision making.

Management and structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by advisory committees who meet regularly to discuss issues of concern and provide advice to the Board.

Drinking Water Quality in Public Supplies

2021

ENVIRONMENTAL PROTECTION AGENCY

An Ghníomhaireacht um Chaomhnú Comhshaoil
PO Box 3000, Johnstown Castle, Co. Wexford, Ireland
Telephone: +353 53 9160600 Fax: +353 53 9160699
Email: info@epa.ie Website: www.epa.ie
Lo Call 1890 33 55 99

Published by Environmental Protection Agency, Ireland

Disclaimer

Cover photo: *Vartry water treatment plant, Wicklow*. Photo courtesy of Irish Water

ISBN 978-1-80009-064-4

October 2022

CONTENTS

EXECUTIVE SUMMARY

Drinking water is sourced from our rivers, lakes, springs, and groundwater and must be treated to make it clean and safe to drink before it is supplied to people. Compliance with the microbiological and chemical standards for drinking water remains high at greater than 99.7%, which means the water in our public water supplies is safe to drink. While water quality remains high, drinking water treatment in many supplies is still not as resilient as it needs to be to ensure the supply is safe into the future.

There were two significant incidents during 2021 at Gorey water treatment plant and Ballymore Eustace water treatment plant. These incidents put approximately 885,000[1] people at risk, with community illness and hospitalisations occurring in the Gorey incident. These incidents highlighted failings in Irish Water's oversight and management of drinking water plants, as well as the need for increased vigilance regarding incident reporting, escalation, and training by Irish Water. Following these incidents, the EPA sought significant improvements by Irish Water in the management of incidents to ensure the public are provided with safe and secure drinking water. Actions taken by Irish Water in response to these incidents included training on incident awareness, escalation, and management for all staff – along with infrastructure improvement works at both sites. Better vigilance following this training has resulted in increased detection of problems by Irish Water. These problems have been managed by the temporary imposition of protective boil water notices, with 50% of the 2021 boil water notices issued in Q4, after these two significant incidents. This improved vigilance is a positive development and will result in a safer water supply for all consumers.

The EPA has identified a priority list of "at-risk" drinking water supplies, the Remedial Action List (RAL), that must be improved to ensure that water supplies continue to be safe to drink and are also secure in the future. A supply may be placed on the RAL if it cannot provide drinking water that is free from bacteria, protozoa [2], or chemical substances, or if the treatment plant is not operated effectively and correctly. People can become ill from drinking inadequately treated water and this can be very severe, particularly in vulnerable people (e.g. the young or elderly).

Irish Water has reduced the number of people served by RAL supplies from just over 1 million to approx. 375,000 which is very positive. Some key achievements in 2021 include the construction of a new plant at Vartry (serves approx. 127,000) and an upgrade of Leixlip (serves approx. 590,000) water treatment plants. These supplies were therefore removed from the RAL.

While the overall population served has reduced, the number of priority supplies on the RAL has increased during 2021 from 46 to 52. Significant supplies such as Cork City (serving over 90,000 people) and Wexford Town (22,300) remain on the RAL. The EPA requires that improvements are made to address this increased number of supplies on the RAL, and the time it takes to implement improvements. There are 5 RAL supplies that Irish Water has not submitted action programmes with completion dates for - despite being on the RAL for over 2 years.

1 All population figures are rounded to the nearest 1,000 as appropriate

2 parasitic micro-organisms that can cause illness

Drinking Water Priorities and Challenges

Ensure that water is free from bacteria. At the end of 2021 there was 1 supply on the RAL for bacterial failure. Irish Water continues to undertake upgrades to disinfection systems across the country to ensure the quality of drinking water is safeguarded and free from bacteria. Considering EPA audit findings, Irish Water needs to review all Disinfection Programme assessments to ensure disinfection contact time is adequate to protect public health and progress disinfection upgrades where assessments identify a need.

Ensure that water is free of protozoan organisms. At the end of 2021 there were 8 supplies on the RAL for inadequate treatment for protozoa. The combined number of detections of *Cryptosporidium/Giardia* have increased in 2021. The fact that protozoan organisms are still being detected in treated water is due to a failure to properly manage the treatment processes. It is critical that Irish Water put the appropriate control measures in place to ensure the correct operation of treatment processes.

Ensure that water is free of chemical substances. The number of people affected by persistent trihalomethane (THM) failures[3] (i.e. on the RAL) has decreased in 2021 due to investment in the Vartry water treatment plant which is welcomed by the EPA. At the end of 2021 there were 19 supplies on the RAL (serving 109,000) due to THM chemical failures. This is down one from 2020. Nevertheless, the number of individual THM exceedances identified has increased in 2021 which is an unwelcome change in the trend seen to this point. The European Commission is progressing infringement proceedings[4] against Ireland for failure to address THM compliance.

The continuing significant number of supplies where pesticides were detected (six supplies on the RAL due to pesticide detection) must be addressed. Irish Water must engage with multiple stakeholders[5] in the relevant catchments to prevent this problem at the source.

Ensure that water treatment plants are operated correctly. At the end of 2021 there were 24 supplies on the RAL for poor treatment control processes. While it is an essential step to have all required infrastructure in place, a water treatment plant must also be managed and operated correctly and be able to adapt and respond to changing conditions and incidents. Essential alarms, monitors and staff training are critical prerequisites for a well-run drinking water treatment plant. Inadequate response to plant alarms was a significant contributor to the incidents in the Gorey and Ballymore Eustace plants which resulted in illness and hospitalisations in 2021.

Protection of Human Health

Boil Water and Water Restriction Notices. Boil water notices increased significantly in 2021 and affected far more people than in 2020 (over 211,000 people affected compared to less than 75,000 during 2020), with improved vigilance after the Gorey and Ballymore Eustace incidents contributing to this increase. Almost half of the 2021 notices were in place for more than 30 days. One boil water notice in Longford in late 2021 affected 17,500 people for over a month. Assessments and improvements under Irish Water's National Disinfection Programme are continuing but have not proved sufficiently robust to mitigate the need for boil water notices.

3 A supply is placed on the RAL for persistent THM exceedances

4 *Infringement case number 2017/4007*

5 Including for example the Department of Agriculture, Food and Marine, Teagasc, the IFA, and local authorities

Reducing Exposure to Lead. Progress by Irish Water on individual lead connections recovered somewhat during 2021. However, this progress rate is still unacceptable and it will take 24 years to address the risks posed to public health from lead in drinking water at the replacement rate observed in 2021 which is a significant overrun of Irish Waters' original plan for completion in 2026. Additionally, the Department of Housing, Local Government and Heritage and the Department of Health have not yet published a progress report on the National Lead Strategy. The compliance limit for lead is set to be halved in 2036 which increases the challenge that needs to be addressed. Given the cumulative risk to human health posed by any level of lead in water supplies and the forthcoming reduced lead limit in the new EU Drinking Water Directive[6], leadership at a national level is required to address this urgent matter.

Drinking Water Safety Plans. Irish Water uses Drinking Water Safety Plans to identify and target the risks to our public water supplies. The new Drinking Water Directive will put the requirement for Drinking Water Safety Plans on a statutory footing. Implementation of the Drinking Water Safety Plan approach by Irish Water is strongly supported by the EPA and will lead to increased resilience and safety of water supplies into the future.

Summary of Key Actions Recommended

For Irish Water

- Complete upgrades to resolve issues with the drinking water supplies on the RAL to ensure risks to drinking water quality are addressed – and supply action programmes with completion dates for the supplies where these are lacking.
- Address the increase in THM exceedances at water supplies to ensure compliance with the THM standard in the Drinking Water Regulations and to protect public health.
- Progress the assessments of disinfection systems, including rechecking of the chlorine contact times, to ensure drinking water is adequately disinfected and free from bacteria. Critical alarms and monitors must always be functioning - with adequate training on incident response provided.
- Expedite lead connection replacements to address the risks posed to public health from lead in drinking water.
- Substantially progress drinking water safety plan assessments to identify risks at drinking water supplies to safeguard the long-term security of water supplies and mitigate risk.

For the Department of Housing, Local Government and Heritage, and the Department of Health

- The Department of Housing, Local Government and Heritage and the Department of Health need to publish the progress report on the National Lead Strategy as a driver in the national effort to address the risks posed to public health from lead in drinking water.

6 (EU) 2020/2184 - to be transposed into Irish law by January 2023

1. INTRODUCTION

This report by the Environmental Protection Agency (EPA) provides a summary of our assessment of drinking water quality in public supplies and public group water schemes in Ireland during 2021. Every day, drinking water is supplied to approximately 1.3 million households[7] (over 3.5 million people) from public supplies. Irish Water is the national water utility responsible for providing this essential service. Irish Water also provides water from its treatment plants to public group schemes. The EPA is the drinking water quality regulator[8], responsible for enforcing the Drinking Water Regulations[9]. The new Drinking Water Directive (EU) 2020/2184[10] is to be transposed into Irish law by January 2023 and it is anticipated that this will enact new requirements for water suppliers and regulators.

A drinking water supply includes the abstraction, treatment, storage, and distribution of water from the water source to the consumer's tap. The raw water sources, which are our rivers, lakes, springs, and groundwater, can be a source of contaminants if the water is not properly managed and treated at all stages of the process. Irish Water must ensure that the drinking water they supply meets the standards set out in the Drinking Water Regulations and therefore is safe to drink. Failure to meet those standards can put public health at risk. The Health Service Executive must be consulted by Irish Water where there could be a public health risk. In these events, a boil water notice (BWN) or water restriction notice (WRN) may be imposed.

Drinking water must be **safe** for people to drink, not just today, but every day. If a supply is meeting the drinking water standards today and is safe to drink, the supply also needs to be **secure** to prevent the risk of water quality failures in the future**.** The security of a supply is dependent on the risks to the supply, the adequacy of the water treatment infrastructure, and the management and operational controls in place. The EPA has identified a list of at-risk supplies called the Remedial Action List (RAL) (*Appendix A*) where either the safety and/or security of the supply is not acceptable and Irish Water are required to put an action plan in place to rectify the issues at each of these supplies. National programmes on improving disinfection and reducing trihalomethanes (THMs), pesticides, and exposure to lead are also ongoing. Irish Water have committed to the Drinking Water Safety Plan approach, to identify and mitigate risks at supplies and to improve the security of those supplies.

7 CSO, Census 2016 - with an average of 2.75 people in a household

8 The Commission for Regulation of Utilities is Irish Water's economic regulator.

9 European Union (Drinking Water) Regulations 2014, S.I. 122 of 2014 (as amended)

10 *https://eur-lex.europa.eu/eli/dir/2020/2184/oj*

2. DRINKING WATER QUALITY

Water Quality in Public Supplies

99.96%	Microbiological parameters
99.60%	Chemical parameters
99.29%	Indicator parameters

Irish Water monitors drinking water quality in public supplies to ensure that it meets the standards set out in the Drinking Water Regulations and is safe to drink. Sample compliance rates remain consistently high year to year, with results for 2021 summarised here.

The results show that water quality from public supplies remains very good and people can be confident that it is safe to drink. A summary of the results can be found in *Appendix B*. Irish Water also carry out non-regulatory monitoring (investigative and operational monitoring) and may find failures, which must also be notified to the EPA and investigated by Irish Water.

Irish Water is also required under the Radioactive Substances in Drinking Water Regulations[11] to monitor for radioactivity parameters.

Water Quality in Public Group Schemes

99.89%	Microbiological parameters
99.06%	Chemical parameters
99.24%	Indicator parameters

Irish Water also provides water to public group schemes. Local authorities regulate these supplies and ensure that monitoring is carried out. Water quality from public group schemes is also very good and sample compliance rates remains consistently high year to year, with results for 2021 summarised here.

A summary of the results can be found in *Appendix C*.

An audit of laboratories undertaken by Irish Water in 2022 indicated that there was an issue with the accreditation status of certain parameters in limited cases (<1% of regulatory samples collected). These results could not be accepted by the EPA, as only accredited results are accepted

11 European Union (Radioactive Substances in Drinking Water) Regulations 2016, S.I. 160 of 2016)

for regulatory monitoring purposes. This means that in the case of approx. 50 supplies there was a shortfall of results for a small number of parameters[12]. EPA have required Irish Water to ensure all samples are accredited and that there are no shortfalls in 2022.

12 Generally, between 1 to 3 parameters out of 48 parameters required.

3. PRIORITIES FOR DRINKING WATER SUPPLIES

The EPA's Remedial Action List (RAL) is a priority list of at-risk supplies that require significant corrective action, and Irish Water are required to put an action plan in place to rectify the issues at each of these supplies. A supply may be placed on the RAL if it fails to meet any of the four criteria set out in Table 1.

Table 1: Remedial Action List criteria

Drinking Water	
Criteria 1:	Ensure that water is free of bacteria
	▶ Inadequate disinfection ▶ Failure to meet *E. coli/Entercocci* standard
Criteria 2:	Ensure that water is free of protozoan organisms
	▶ Inadequate Treatment for Cryptosporidium ▶ Supply identified by the HSE where further investigation or improvement may be required
Criteria 3:	Ensure that water is free of chemical substances
	▶ Disinfection by-products (trihalomethanes) ▶ Pesticides
Criteria 4:	Ensure that water treatment plants are operated correctly
	▶ Excessive levels of aluminium in the treated water ▶ Poor turbidity removal ▶ EPA Audit Observation / Treatment and Management Issues

When Irish Water has shown that the issue has been fixed, a supply can be removed from the list. The RAL is updated biannually, and you can keep up to date with it through the EPA's website at *https://www.epa.ie/publications/compliance--enforcement/drinking-water/* (see also Figure 2).

Findings for 2021

The overall population receiving water from supplies on the RAL reduced from just over 1 million to approx. 375,000 since 2020 (see Figure 1). This is very positive progress, and is principally due to the successful removal of two large supplies from the RAL:

- an upgrade of the Leixlip water treatment plant (approx. 590,000) and
- construction of a new water treatment plant at Vartry (approx. 127,000).

This means that an additional 717,000 people now have a safe and resilient supply of water. However, the number of supplies on the RAL increased from 46 in 2020 to 52 in 2021. This reverses a downward trend in the number of supplies on the RAL since 2017 which leaves no room for complacency. Significant supplies such as Cork City (serving over 90,000 people) and Wexford Town (22,300) remain on the list. Details can be seen in Appendix A and also here on the EPA website.

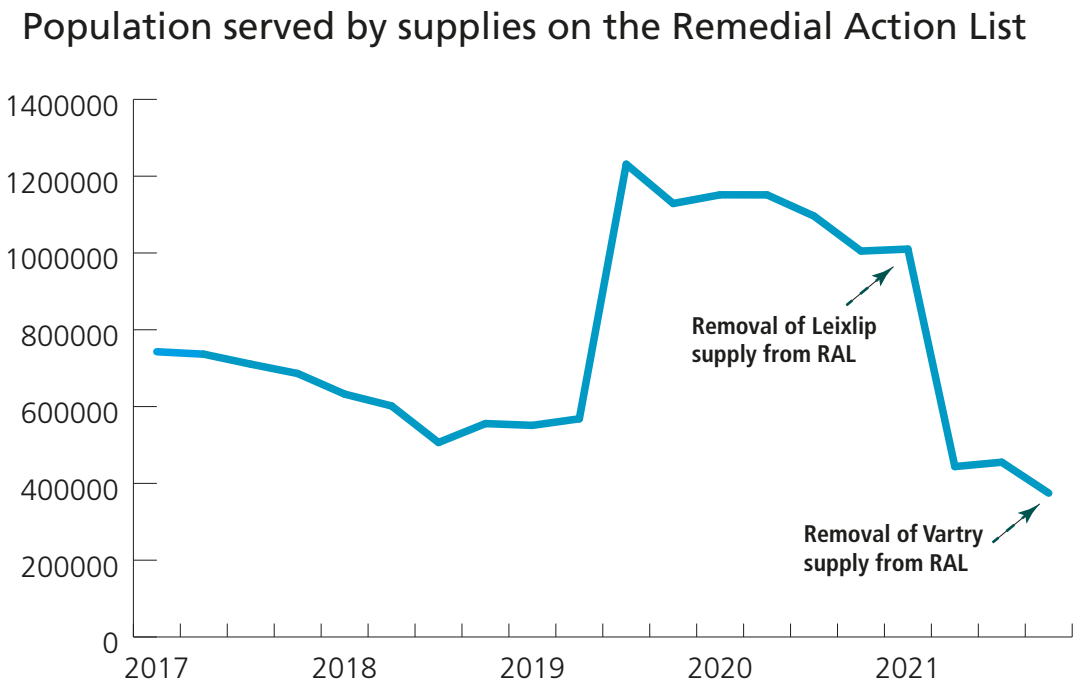


Figure 1: Population being served by supplies on the RAL from 2017-2021

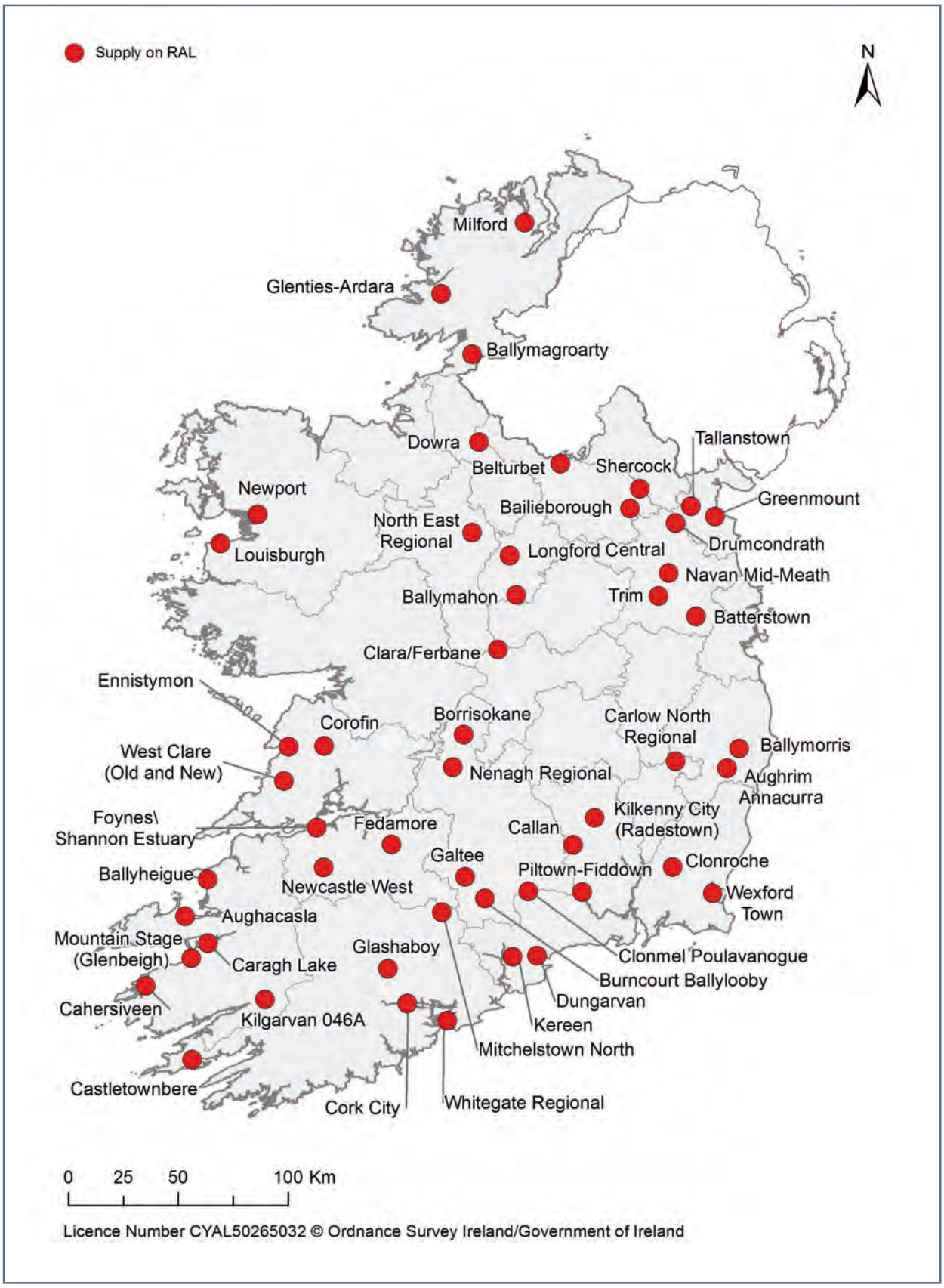


Figure 2: Supplies on RAL at the end of 2021.

Notwithstanding the above progress, the length of time it takes to implement improvements at supplies in not acceptable to the EPA. Irish Water has not submitted action programmes with completion dates for 5 supplies despite being on the RAL for over 2 years. It is particularly

important that completion dates are identified for each of these supplies given they have been on the RAL for over 2 years. Other supplies on the RAL for a lesser time (12 supplies) also require action programmes with completion dates.

In 2021, the EPA issued nine legally binding Directions (*Appendix D*) to Irish Water where supplies needed improvements. Five of these Directions were for supplies with persistent THM failures, with the remaining Directions related to a mix of issues including pesticide exceedances, plant operation/treatment and disinfection. Most of these nine Directions relate to plants on the RAL.

There continues to be delays in completing action programmes for supplies on the RAL – where dates have been provided. Five supplies have delays for 6 months or greater (i.e. delays past the original date planned) with the Dungarvan supply[13] work delayed for a further 5 years into the future. Other examples include Galtee Regional[14] which still has an uncertain completion date and has been on the RAL since 2019. Clonmel-Poulavanogue[15] is another example, which will not now be completed until 2026 - but has been on the RAL since 2008. These delays occur where initial dates are provided without sufficient evaluation of possible solutions, and later prove to be unrealistic in terms of time required or the treatment solution is not considered appropriate. This has occurred more than once for both Galtee Regional and Clonmel Poulavanogue supplies, and where this happens it compounds delays highlighted in previous reports.

Actions Required

While Irish Water has made good progress on reducing the population served on the RAL at the end of 2021, they must provide plans for all supplies on the RAL and take all necessary measures to resolve these issues without any further delays.

13 population supplied >12,000

14 population supplied >11,750

15 population supplied 2,750

Drinking Water Criteria 1: Ensure that water is free of bacteria

Disinfection is the most important step of the water treatment process. It keeps our water supplies safe from pathogens such as bacteria. Disinfection can be carried out using chlorination and ultra-violet light, to kill or deactivate pathogens.

Irish Water is implementing a National Disinfection Programme[16] to ensure that standard specifications for disinfection systems are met at all 'sites', that is, water treatment plants or other locations such as chlorine booster stations.

A supply may be placed on the RAL if critical disinfection infrastructure is absent or if there is persistent presence of *E. coli* or *Enterococci* in the treated water.

Findings for 2021

Disinfection systems have been upgraded and commissioned at a total of 316 sites to date, with 39 of these sites delivered in 2021.

However, the EPA through its audit programme continues to find issues with inadequate disinfection contact time[17], which were not properly addressed by Irish Water as part of its disinfection programme. These deficiencies in disinfection processes were highlighted in the Ballymore Eustace and Gorey incidents (see Box 1 - page 25).

There is currently 1 supply on the RAL under this criteria (Ballymorris, Co. Wicklow). This is a small supply serving 18 people. Irish Water plan to connect Ballymorris to the Arklow public supply by December 2023. Apart from this supply all plants have some form of disinfection in place before the water is provided to people.

Nevertheless, additional infrastructure is required in some cases. In other cases, the management and control of existing processes is inadequate as evidenced by detection of pathogenic bacteria in the supply. This is due to a need for a combination of: installation of more effective chlorination dosing and control, better chlorine monitoring, and a requirement for alarms and automatic shut-downs systems where disinfection is not adequate. Of boil water notices in place during 2021, approx. one third of them were in place due to disinfection issues affecting almost 32,000 people.

Actions Required

The National Disinfection Programme is of fundamental importance in identifying and addressing issues with disinfection in water supplies. Irish Water must continue to undertake improvements to disinfection systems across the country to ensure that the quality of drinking water is safeguarded.

- Where significant issues are found, for example, inadequate contact time, these should be resolved immediately, to protect public health;
- Considering EPA audit findings, Irish Water needs to review all Disinfection Programme assessments to ensure disinfection contact time is adequate to protect public health;
- Where disinfection upgrades are completed, Irish Water should ensure those systems are commissioned and operated properly, with the appropriate training provided to operatives in a timely manner.

16 Available at *https://www.water.ie/projects-plans/national-projects/national-disinfection-programme/*

17 Where chlorine is used in disinfection, it needs time (known as contact time) to fully kill any bacteria or viruses, before it reaches the first consumer on the distribution network.

Drinking Water Criteria 2: Ensure that water is free of protozoan organisms

While the disinfection step deals with many pathogens, chlorination on its own is insufficient to kill or deactivate protozoan organisms such as *Cryptosporidium* and *Giardia* which can cause serious gastro-intestinal illness. The Drinking Water Regulations do not explicitly require monitoring of these organisms however, Irish Water is required to determine if there is a risk that they could be present in raw water sources. If so, then appropriate treatment processes (referred to as a 'barrier') must be put in place. C*ryptosporidium* and *Giardia* may be detected in treated water where:

- there is no treatment barrier in place at the water treatment plant; or
- the treatment barrier is not being properly operated, or maintained, or is inadequate.

A supply may be placed on the RAL if detection of protozoan organisms is persistent or a barrier is not in place.

Findings for 2021

Leixlip was on the RAL under this criteria and supplies over 590,000 people. The Leixlip supply was removed from the RAL in July 2021 following filter upgrades and the installation of UV disinfection which provided adequate treatment for protozoan organisms.

Irish Water detected *Cryptosporidium* or *Giardia* in 24 supplies during 2021, up from 18 supplies in 2020 (see Figure 3). Of these 24 supplies, 12 were placed on a boil water notice. In the case of two supplies, new water treatment works (Vartry WTP construction) and temporary UV treatment (Cork City Water Supply) have been installed.

At the end of 2021 there were eight supplies on the RAL for inadequate treatment for *Cryptosporidium* (supplying approx. 17,200 people). Action plans for dealing with these issues are generally UV-treatment or provision of alternative supplies. Completion dates for four supplies are during 2022, a further two in 2023, and the remaining during or after 2026.

Actions Required

The EPA is disappointed at the increased number supplies with protozoa detections in 2021 and remains concerned that the failure to properly manage treatment barriers is causing a risk to public health because of possible breakthrough of parasites into treated water. These protozoa detections are due either to barriers not being in place, or because barriers aren't functioning correctly. It is critical that Irish Water put the appropriate control measures in place to ensure the correct operation of treatment barriers.

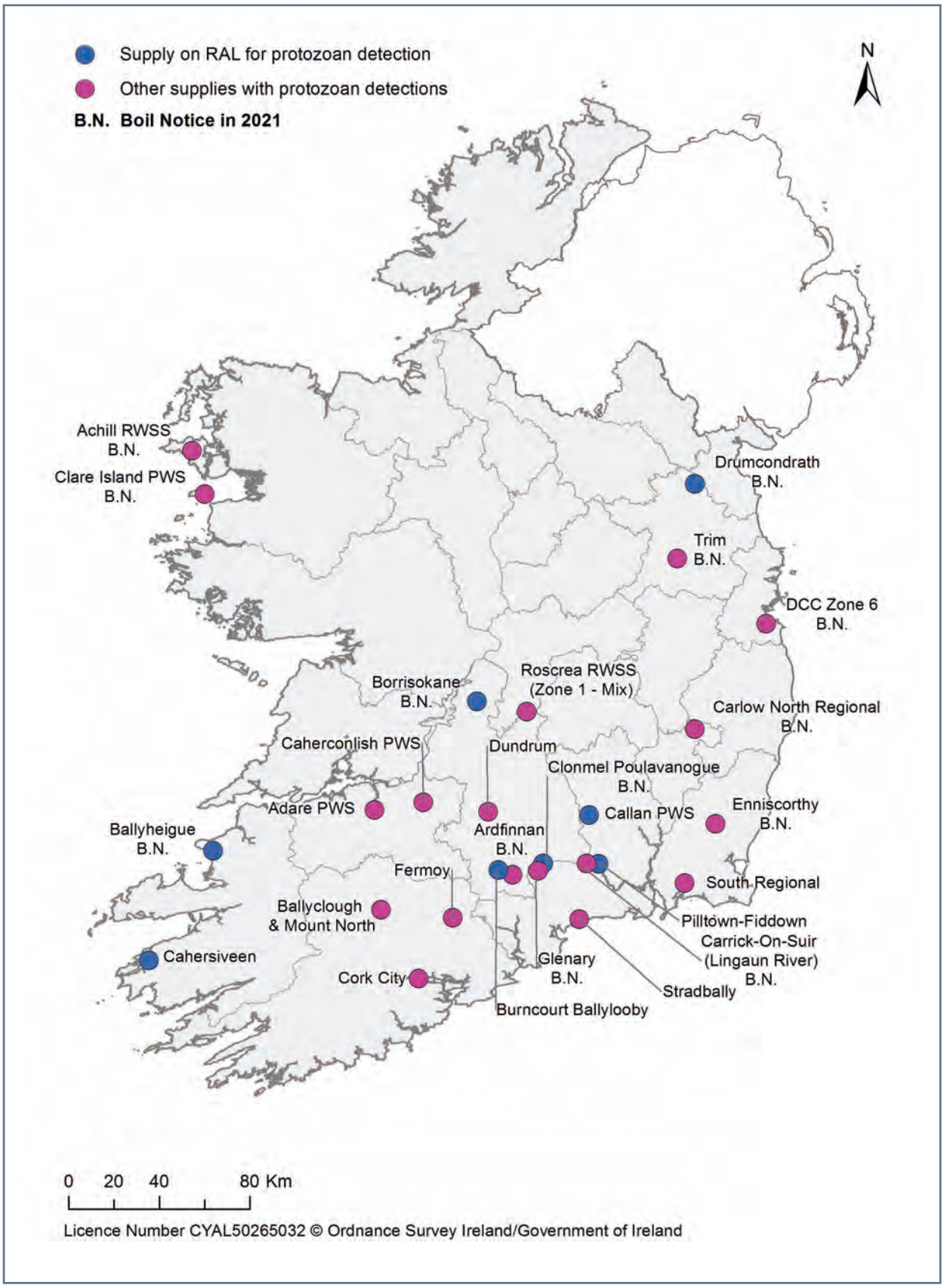


Figure 3: Supplies on RAL for inadequate treatment for protozoa or with protozoa failures during 2021.

Drinking Water Criteria 3: Ensure that water is free of chemical substances (trihalomethanes and pesticides)

Trihalomethanes (THMs) form when natural organic matter in the water source, such as rotting vegetation, reacts with chlorine used in the disinfection treatment process. Long term exposure to THMs may cause health risks. For this reason, it is important to remove as much organic matter as possible from the raw water using processes at the water treatment plant. THMs are a particular issue in Ireland where about 80% of our drinking water is abstracted from rivers and lakes. A supply may be placed on the RAL if there is a persistent failure to meet the 100µg/l limit and processes are not sufficiently robust to reliably maintain THM levels below that level.

The European Commission started infringement proceedings against Ireland in 2015 for failure to comply with the THM standard in the Drinking Water Directive. In 2020, the Commission escalated its infringement proceedings against Ireland by issuing a Reasoned Opinion stating Ireland had failed to take the measures necessary to ensure THM compliance in 31 public water supplies and 13 private group water schemes.

Pesticides are found in drinking water due to the incorrect use of such products in the catchment of water bodies used for drinking water abstraction. The term 'Pesticides' includes a wide range of products, but in Ireland, it is herbicides that are most commonly found, in particular, MCPA[18] which is used for rush control in grassland. Where pesticide failures are found, monthly monitoring must be carried out during the spraying season of April to November. A supply is considered to have a persistent pesticide problem if failures are found during four or more of the monthly sampling events. A supply may be placed on the RAL if failures are persistent and initial investigations fail to resolve the issue.

Findings for 2021

Trihalomethanes

58 **public supplies** failed to meet the standard for THMs compared to 35 in 2020 reversing an improving trend on THM compliance since 2017 (See graph). At the end of 2021 there were 19 supplies *serving almost 110,000 people* on the RAL for THMs *(1 supply was removed serving over 60,000 people at the end of 2020).*

18 2-methyl-4-chlorophenoxyacetic acid

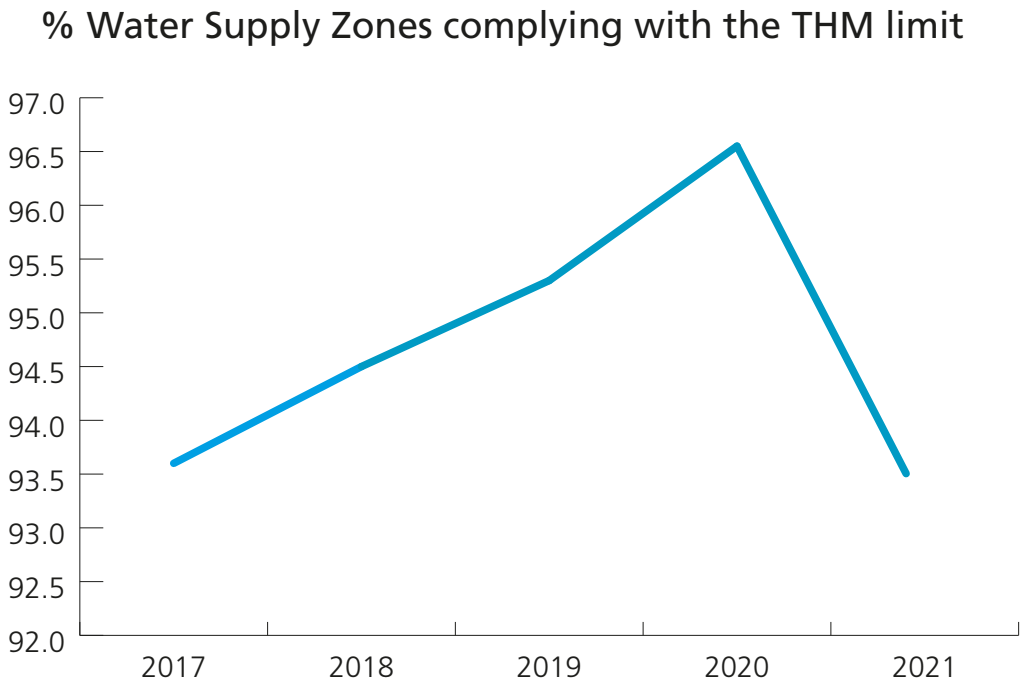


Figure 4: Percentage of water supplies complying with the Trihalomethane limit

While the number of people affected by persistent THM failures[19] (i.e. on the RAL) has decreased, nevertheless the overall number of supplies with THM exceedances has increased. This is an unwelcome change in the trend seen to this point. Given the possible health impacts of THMs the precautionary approach dictates that the concentration of THMs in supplies is minimised and meets the standard in the Drinking Water Regulations as a minimum.

In total there are 13 open Directions issued by the EPA relating to THMs exceedances (as of end Q2 2022). In these cases, Irish Water is required to submit or complete action programmes to address persistent THMs exceedances. For further details on these open Directions see **Appendix D-2**.

During 2021 Ireland responded to the Commission, providing details and timeframes by which Irish Water will complete works to address persistent THMs exceedances in some public water supplies. In this context, the re-addition of 5 public water supplies (Kilgarvan, Carragh Lake, Longford Central and Ballymahon and North East Regional Public Water Supplies) to the Remedial Action List during 2021 is concerning. In these cases, Irish Water had installed treatment to remove THMs, but the treatment installed did not resolve the issue. The EPA will continue to target THM compliance as part of their enforcement activities. Progress on these supplies continues to be tracked and reported to the European Commission as part of the THM Infringement Proceedings against Ireland.

Failure to meet the THM standard for a **public group scheme** may be due to the quality of the water supplied by the parent public supply or it may be that the THMs were formed in the public group scheme network.

19 A supply is placed on the RAL for persistent THM exceedances

In 2021, exceedances of the THM standard were found at 28 public group schemes across four counties (see *Appendix E* for the full list). This is an increase from 20 schemes in 2020. In Clare, 16 schemes with exceedances are fed by West Clare Regional Water Supply (WCRWS) (old and new plant). The WCRWS is on the EPA RAL for THMs and continues to fail to meet the THM standard, thus affecting the group schemes which they supply. The EPA issued a Direction to Irish Water to resolve the THM issue at the WCRWS, and Irish Water has substantially progressed works – with an expected completion date in 2022. This will mean the supply will have full treatment to remove THMs and its associated Public Group Water Schemes will come into compliance shortly thereafter[20].

20 See relevant EPA audit report - *https://www.epa.ie/publications/compliance--enforcement/drinking-water/audit-reports/clare/West-Clare-RWS-(new-WTP)-Audit-Report.pdf*

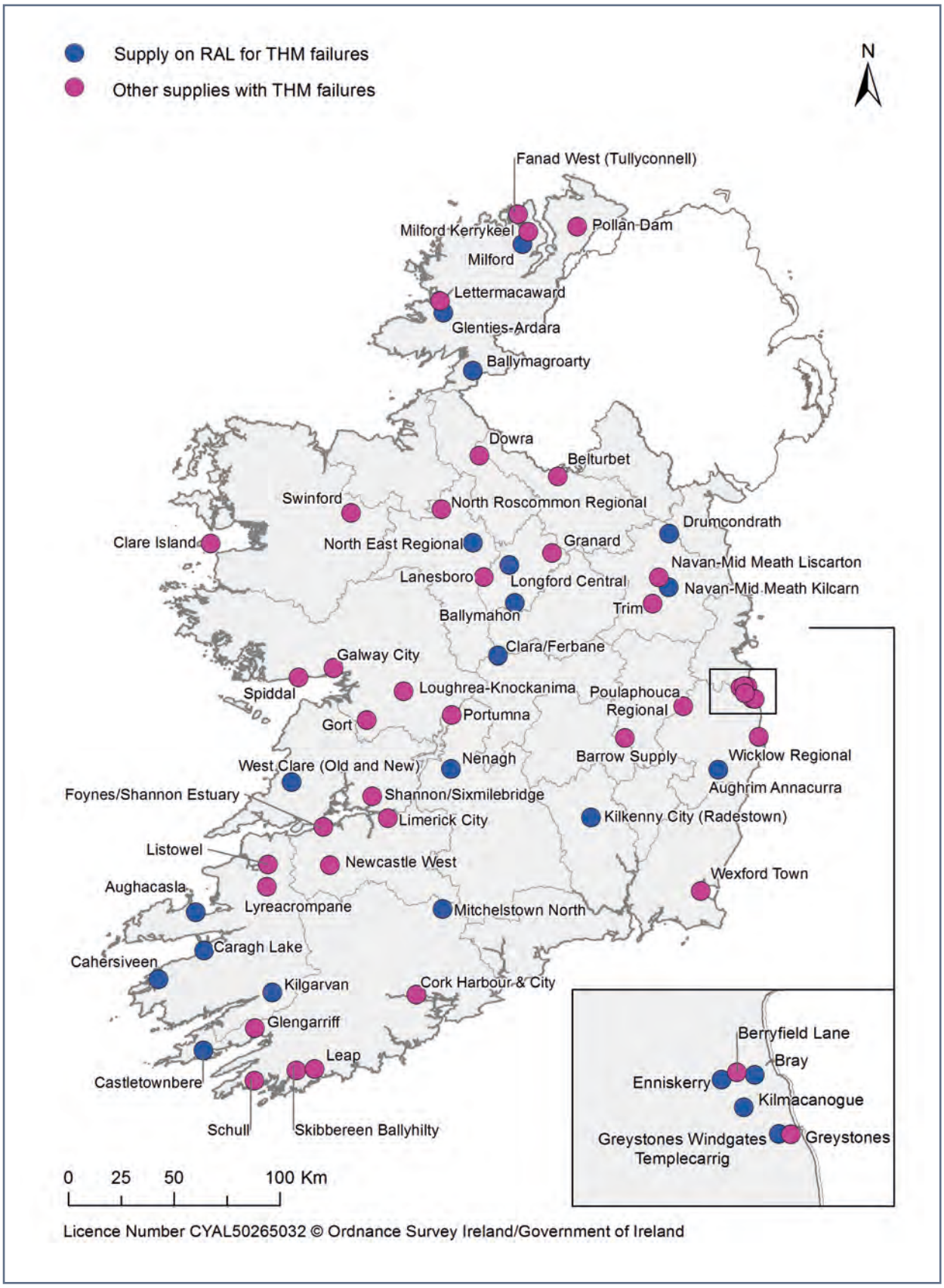


Figure 5: Public supplies on RAL for THM or with THM failures during 2021.

Pesticides

There were 31 water supplies[21] that failed to meet the Pesticide standard in 2021, compared to 33 supplies in 2020. The herbicide MCPA[22] continues to dominate. There are six supplies on the RAL for pesticides at the end of 2021. Five of these have Catchment Focus Groups in place (an increase from three in 2021), that bring relevant stakeholders together to promote responsible pesticide use within those catchments.

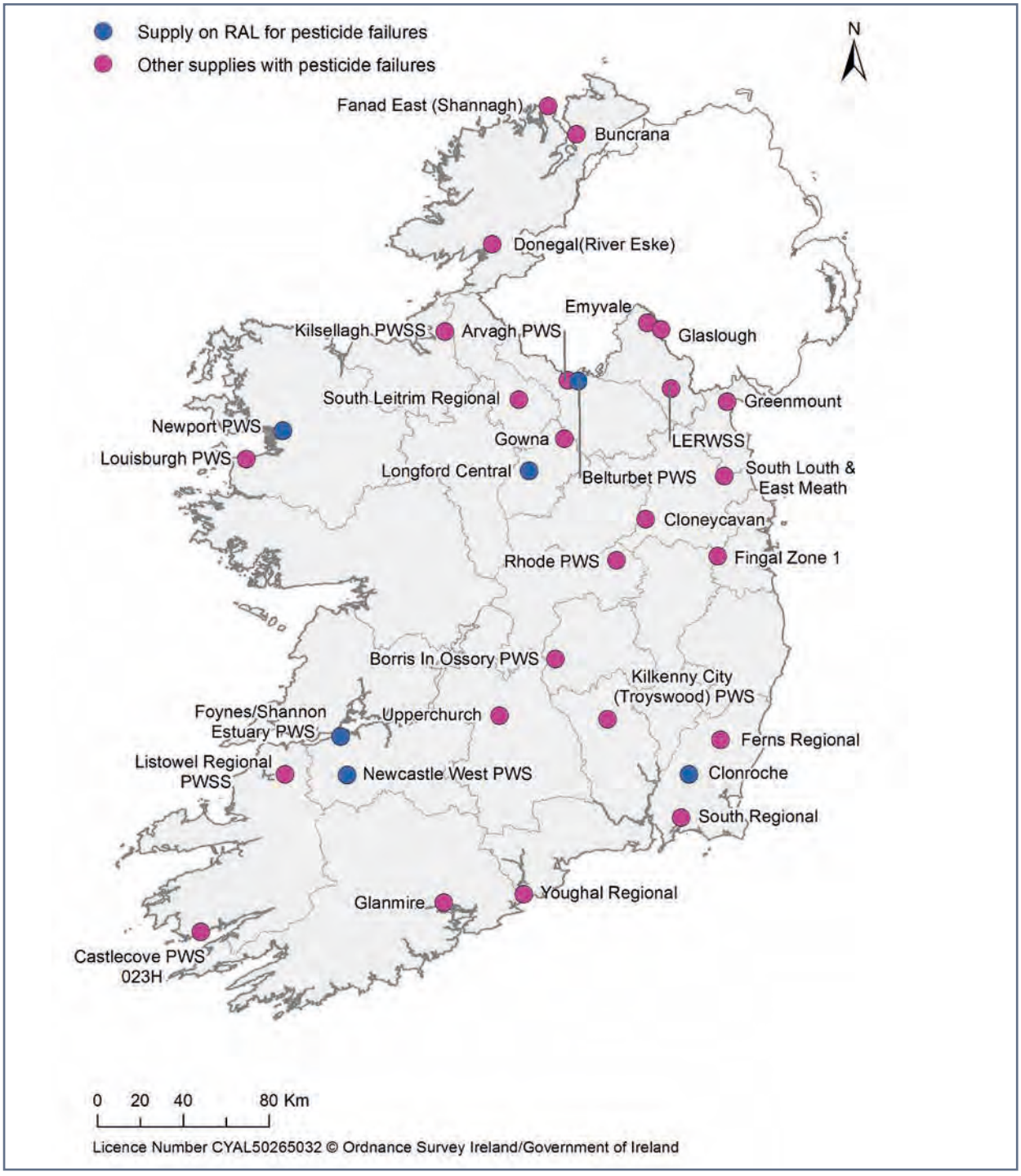


Figure 6: Supplies on RAL for pesticides or with pesticides failures during 2021.

21 48 individual exceedances notified

22 2-methyl-4-chlorophenoxyacetic acid. A common herbicide, often used to control rushes

Actions Required

To protect public health and to ensure compliance with the THM standard in the Drinking Water Regulations it is critical that Irish Water take action to address the increase in THM exceedances at water supplies. This will also serve to address the THM issues raised by the European Commission. More specifically, EPA expects Irish Water to comply with the requirements of the 13 open THM related Directions issued by the EPA within the timeframes outlined.

Local authorities must investigate any THM failures in public group schemes to determine whether the cause is the quality of the water from the parent supply or the conditions in the group scheme network, so that the appropriate corrective action is taken.

In July 2021, Irish Water published an Interim Pesticide Strategy[23] for 2021-2024, building on work that has been going on for several years. The Strategy has three pillars: (1) Collaboration with stakeholders; (2) Understanding risk; and (3) Managing risk. It is crucial that Irish Water implement the strategy and consider treatment options where other measures fail to achieve compliance.

23 *Interim Pesticide Strategy | Strategic Plans | Irish Water*

Drinking Water Criteria 4: Ensure that water treatment plants are operated correctly

Persistent aluminium and turbidity failures are indicative of poor control over treatment processes. EPA audits can also identify control and management issues at supplies, such as issues with critical alarms and monitors. These can result in situations where disinfection, protozoal removal/ deactivation, or other processes are not optimised. This was highlighted by the significant incidents in Gorey and Ballymore Eustace (*see Box 1 – page 25*).

A supply may be placed on the RAL if aluminium or turbidity failures are persistent or if an EPA audit finds that poor control or management pose a risk to the reliable treatment of the water.

Findings for 2021

During 2021, seven supplies were removed, and nine supplies were added to the RAL due to Aluminium/turbidity issues or following an audit. At the end of 2021 there were 24 supplies on the RAL for poor treatment control processes (compared to 22 in 2020) with over 80% of these issues being identified through audits.

The number of sites on the RAL for poor operational control increased in 2021. This indicates a trend in the wrong direction. EPA audits continued to identify issues at water treatment plants that need to be addressed.

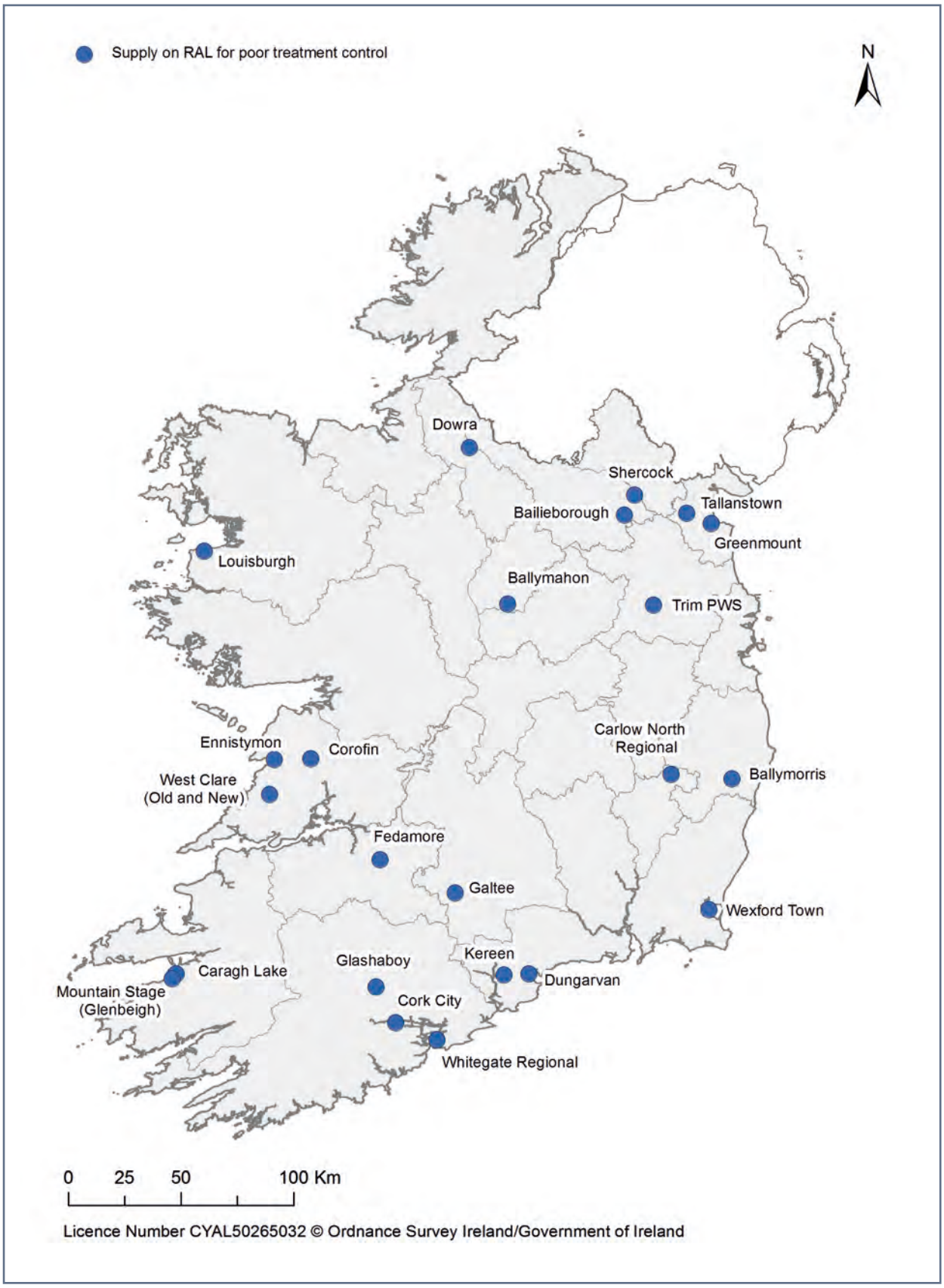


Figure 7: Supplies on RAL for poor water treatment process control during 2021.

Actions Required

Irish Water must ensure that consistent and documented operational control and management measures are in place at all supplies, including;

- Monitors and alarms with appropriate set points in place and operational at all times;
- Staff trained and available to respond to alarms and incidents;
- Operational monitoring to assess plant performance on an ongoing basis.

4. PROTECTION OF HUMAN HEALTH

Boil Water and Water Restriction Notices

A failure or incident at a supply can put the water quality at risk. The Health Service Executive is responsible for public health and must be consulted by Irish Water where a water quality failure or incident could result in a public health risk. In these events, a boil water notice (BWN) or water restriction notice (WRN) may be imposed.

It is critical that such failures or incidents are responded to promptly. Failure to adequately respond and take the appropriate actions up to and including the imposition of a boil water or water restriction notice can have a significant impact on public health. The consequences of consuming inadequately treated water can be very severe, particularly in vulnerable people, such as the young, the elderly, and those with underlying conditions.

While a boil water notice or water restriction causes inconvenience to people, they are necessary to ensure that members of the public do not consume water that could be contaminated and make them ill. Irish Water must also take prompt action to ensure that the duration of the notice period is as short as possible.

Table 2: Boil Water Notices from 2017 to 2021

Year	Number of notices in place	In place for > 30 days[24]	Total population affected during year
2017	42	19	21,700
2018	44	18	97,200
2019	68	59	696,900[25]
2020	43	27	75,000
2021	70	29	211,000[26]

During 2021, 70 **boil water notices** were in place at 59 supplies across 18 counties - up from 4327 in 2020. These notices affected 211,00028 people in 2021. (Appendix F, Table 1).

- 29 were in place for more than 30 days, with 11 in place for more than one year;
- Five supplies which had notices in 2020, had notices again in 2021;
- 36 (over 50%) of these were issued in the last quarter of 2021 (after the incidents at Gorey and Ballymore Eustace)

24 As of end of 2021

25 This includes the 657,000 people supplied by Leixlip water treatment plant, affected by two notices in 2019.

26 Where multiple notices are issued for the same supply in 2021 – the population affected is counted only once

27 Affecting almost 75,000 people in 2020

28 Note that where multiple notices are issued for the same supply during 2021 – the population affected is counted only once in 'total population affected' figures to avoid duplication.

Even though drinking water quality has remained consistently very good since 2017, Table 2 shows that there has been no overall reduction in boil water notices despite the Irish Water Disinfection Programme having commenced in 2016. While EPA do not want to see the number of BWNs increasing, they are essential to protect public health when supplies are compromised. The EPA sought significant improvements in Irish water's management of incidents following the issues at Gorey and Ballymore Eustace. Irish Water's improved incident awareness, escalation and management has contributed to the increased number of boil water notices. This is considered a positive development, as increased vigilance, better awareness of escalation procedures and more targeted monitoring by Irish Water will result in a safer water supply for all consumers. The EPA will continue to monitor this in the coming years.

Table 3: Water Restriction Notices from 2017 to 2021

Year	Number of notices	In place for > 30 days [29]	Total population affected during year
2017	4	3	230
2018	15	7	14,600
2019	8	4	9,200
2020	17	10	4,200
2021	26	9	17,900

During 2021, 26 **water restrictions** were in place on 18 supplies across nine counties, affecting 17,900 people (*Appendix F, Table 2*).

- 9 were in place for more than 30 days, with one in place for more than one year;

Reasons for these notices include:

- cast iron mains giving rise to inadequate chlorine in a supply
- four related to a Manganese issue in a single supply (Cavanhill, Louth).

At the end of 2021, 2 water restrictions notices were still in place affecting 32 people - one of which is a disputed supply between Irish Water and the local authority (Ballydermody, Co. Waterford).

These Boil Water and Water Restriction Notices are important to protect human health.

Box 1 on the next page illustrates the impact of poor plant operation – and it is important to note that illnesses and hospitalisations resulted from the Gorey incident.

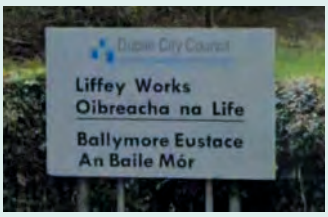
29 As of end of 2021.

Box 1 - Gorey and Ballymore Eustace incidents

The EPA investigated two separate incidents during 2021 at drinking water treatment plants in Gorey (Creagh water treatment plant) and Ballymore Eustace (BME) following the late notification of these incidents by Irish Water. These investigations revealed the abject failure of managerial oversight, operational control and responsiveness by Irish Water and local authorities in terms of their respective roles to deliver safe and secure drinking water.

Incident details:

- In the case of the **Gorey plant** there was a power failure leading to a chlorine pump failure. This compromised the disinfection system at the water treatment plant. Combined with a deterioration of the raw water quality this compromised the water quality provided to the public.



- In the case of the **BME plant** there was a coagulant dosing pump failure which affected filtration. The effectiveness of disinfection and the plant's *Cryptosporidium* barrier was therefore compromised.
- Irish Water's failure to notify both EPA and HSE meant there wasn't an opportunity to put in place boil water notices to protect public health.

These incidents meant that approximately 885,000 people were left unaware of the risks they faced and did not have the opportunity to protect themselves. In the case of the Gorey incident, there were over 50 confirmed cases of illness. These illnesses included VTEC which is a very dangerous form of E. coli, and several people were hospitalised.

The EPA is satisfied that both plants have returned to normal operation since the incidents. However, immediate and significant improvement in the provision of water services by Irish Water and local authorities was required by the EPA to ensure the public were provided with safe and secure drinking water and that public health was protected. EPA requirements to be carried out by Irish Water at a national level included:

- improving management oversight of operations at drinking water supplies;
- training of staff on incident response and verification of alarms;
- review of alarm settings and automatic shutdowns at plants.

Better vigilance and incident management following this training has resulted in wider detection of problems by Irish Water – which are managed by the temporary imposition of protective boil water notices.

The EPA audit reports for both plants contain specific recommendations for Irish Water to address to ensure there isn't a reoccurrence of these incidents (available on the EPA website for both the BME plant[30] and the Gorey plant[31]). Work on improving management oversight, verification of alarms, incident response and training at these plants has been carried out and EPA considers that this will require ongoing vigilance from Irish Water to ensure this doesn't happen again.

EPA will continue to focus enforcement on a risk-basis and will follow up on requirements Irish Water must implement in the light of these cases through:

- audits focusing on incident awareness, reporting and escalation procedures at plants;
- audits focusing on plants where Irish Water state disinfection programme works are complete – to confirm such completion;
- ongoing risk-based auditing of Irish Water drinking water treatment plans.

Ballymore Eustace Drinking Water Plant Clarifiers

30 *https://tinyurl.com/22vxxvsa*

31 *https://tinyurl.com/mrxe9uyk* and *https://tinyurl.com/5f4rk6fc*

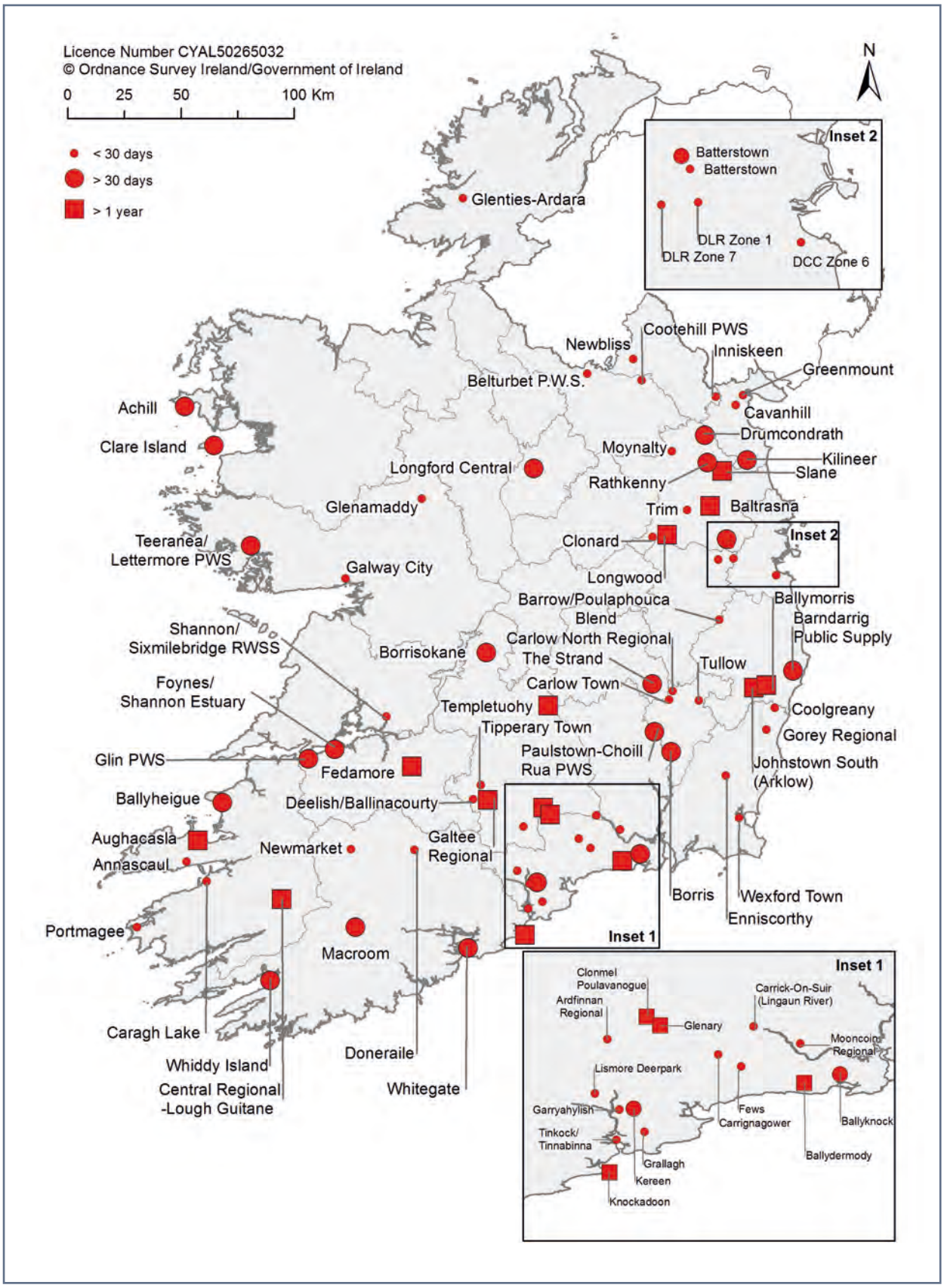


Figure 8: Supplies with notices (Boil Water/Water Restriction) in place in 2021 & their duration

Reducing Exposure to Lead

The Irish Government published a *National Lead Strategy*[32] in June 2015. The strategy sets out actions to reduce people's exposure to lead from lead piping or connections in buildings and homes, with reporting on these actions required jointly by the Department of Housing, Local Government and Heritage, and the Department of Health.

In May 2017 Irish Water published its *Lead in Drinking Water Mitigation Plan*[33] which sets out Irish Water's plan to achieve the removal of all public side lead pipework by 2026. Irish Water estimated that there were 180,000 lead service connections, i.e. 140,000 connections from water mains and 40,000 backyard service connections.

The new Drinking Water Directive (EU) 2020/2184 is to be transposed into Irish law by January 2023 and will include a reduction in the lead limit from 10 µg/l to 5 µg/l; to be achieved by January 2036. Compliance with this limit will most likely not be achievable without the replacement of all lead connections.

Findings for 2021

The Department of Housing, Local Government and Heritage and the Department of Health have not yet published a report on progress towards carrying out the actions within the National Lead Strategy. This means the number and location of public buildings affected; the number of people exposed; and plans to remove lead are still not known. The necessity to finalise and publish this report on an annual basis has been highlighted in previous EPA reports, and it must be progressed.

Just over 5,800 individual lead connections were replaced by Irish Water in 2021, compared to 3,000 in 2020[34]. This brings the total number of connections replaced to approx. 41,500 by end of 2021 – approx. 23% of the total targeted to be replaced by Irish Water.

This progress rate is a significant overrun of Irish Waters' original plan for completion in 2026 and is unacceptable. It will take 24 years to address the risks posed to public health from lead in drinking water at the replacement rate observed in 2021. Additionally, some sample locations are likely to fail to meet the reduced limit for lead in the new Drinking Water Directive without intervention on both the public and private side.

Ortho-phosphate dosing[35] is being carried out in three water supplies during 2021. There are 15 further supplies at which o-P treatment facilities are completed – but not yet commenced as of Q4 2021. There are 14 other supplies where its either being commissioned or under construction at the end of 2021. While o-P treatment is effective at reducing lead levels, it is an interim measure. The only sustainable long-term option is lead replacement in the public mains network (by Irish Water), and on the private side by property owners.

32 Available at *https://www.gov.ie/en/publication/f76ee-national-lead-strategy-june-2015/*

33 Available at *https://www.water.ie/projects-plans/our-plans/lead-mitigation-plan/*

34 The last pre COVID figure was 15,000 in 2019

35 Ortho-phosphate dosing can create a lining that limits the amount of lead from the pipe surface.

Actions Required

Any level of lead in drinking water causes a cumulative risk to human health. The forthcoming reduced lead limit in the new Drinking Water Directive, the slow rate of lead replacement and the lack of updates as required under the National Lead Strategy emphasises the need for leadership at a national level. The EPA is calling for more urgency on the issue, both by Irish Water under their Mitigation Plan and the Department of Housing, Local Government and Heritage/Department of Health under the National Lead Strategy. It is not acceptable that these works are being delayed – as they are the only sustainable way to reduce people's exposure to lead in drinking water and deliver such an important public health outcome. The EPA acknowledges the impact COVID-19 has had on the lead connection replacement measures undertaken by Irish Water, and that the rate of replacement has recovered somewhat in the latter part of 2021 – nevertheless the pace remains too slow.

Homeowners can also take action when they are informed by Irish Water that they have lead in their water. They can make use of the *Lead Remediation Grant Scheme* which is available through local authorities to assist with the costs of replacing lead plumbing. The grant is currently means tested. A review of the eligibility criteria by the Department of Housing, Local Government and Heritage to allow more people to avail of it to replace their lead pipework has been anticipated since 2020 but there is no reported progress on this at the current time.

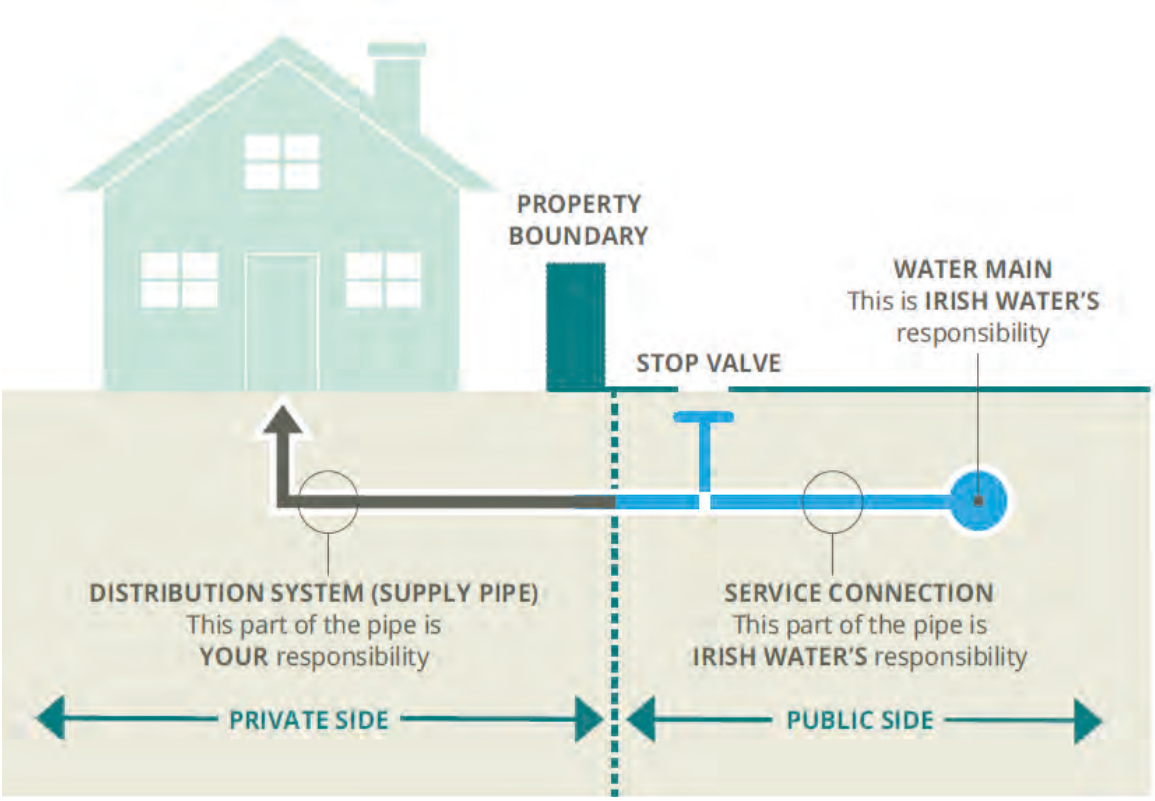


Figure 9: Responsibility for water distribution systems (*graphic courtesy of Irish Water*)

Drinking Water Safety Plans

Irish Water are undertaking a comprehensive review, known as a Drinking Water Safety Plan, of all public supplies. Drinking Water Safety Plans are a proactive approach to ensuring that a water supply is not only **safe**, but also **secure**, thus providing greater certainty for the consumer that their drinking water supply will remain safe to drink. A Drinking Water Safety Plan identifies:

- all the things that could go wrong (hazards);
- how serious it would be if it did go wrong (severity); and
- how likely it is that it could go wrong (likelihood).

This assessment is made at each step in the water supply process, from the water source to the consumer's tap. The aim is to identify, manage and mitigate risk. Irish Water is carrying out assessments of all public water supplies, by assessing and calculating the risk of any hazards occurring, using the severity and likelihood information. Once risks are identified, actions must be taken to mitigate those risks. A national overview can be taken to ensure that the highest risks are dealt with first, under the relevant Irish Water programmes.

The new Drinking Water Directive (EU) 2020/2184 is to be transposed into Irish law by January 2023 and it is anticipated that this will put the requirement for Drinking Water Safety Plans on a statutory footing.

Findings for 2021

At the end of 2021, Irish Water report that they have substantially completed a treatment/ distribution risk assessment of 148 water supply zones (from 72 in 2020) which covers 70% of people supplied by Irish Water.

Actions Required

Irish Water needs to continue to progress drinking water safety plan assessments to identify risks at drinking water supplies and to safeguard the long-term security of water supplies. Where assessments have been completed, Irish Water must ensure the highest risks identified are prioritised for action so that they can be addressed in a timely manner.

5. CONCLUDING REMARKS

The quality of drinking water in public supplies and public group water schemes remained very high in 2021. Irish Water has reduced the number of people served by RAL supplies which is very positive. In addition, the number of people affected by persistent THM failures[36] (i.e. on the RAL) has decreased in 2021. However, these successes are tempered by the fact that the number of priority supplies on the RAL has increased during 2021 and five RAL supplies (on the RAL for more than 2 years) have no submitted action programmes with completion dates.

Better vigilance and improved incident management by Irish Water has resulted in increased detection of problems. These problems have been managed by the temporary imposition of an increased number of protective boil water notices. This is considered a positive development, and this vigilance will result in a safer water supply for all consumers.

People will continue to be exposed to lead in their drinking water, until approx. 140,000 remaining connections are replaced. At Irish Water's current replacement rate, it will be decades before this issue is resolved. The EPA is therefore calling for stronger leadership at a national level on the Lead Strategy, especially given the forthcoming reduced limit in the new Drinking Water Directive. Significant improvement in the collective efforts of all stakeholders is required.

While the number of people affected by persistent THM failures has decreased, nevertheless the overall number of supplies with THM exceedances has increased. Progress on improving these supplies must be made.

Irish Water must continue to progress the use of drinking water safety plans across their entire portfolio of water treatment infrastructure to determine the highest risks. This is essential in targeting actions to address those risks and to ensure a resilient public water supply.

Although the quality of our water is safe to drink today, in order for it to be secure into the future Irish Water must resolve the priority supplies on the RAL and ensure future actions are targeted where they are most needed to protect public health.

36 A supply is placed on the RAL for persistent THM exceedances

APPENDIX A REMEDIAL ACTION LIST AT THE END OF 2021

County	Supply	Population	Date supply put on the RAL	Completion date for action plan	Reason
Carlow	Carlow North Regional	10,089	Q2 2021	March 2024	Upgrade of water treatment plant
Cavan	Bailieborough	8,028	Q4 2019	Complete and awaiting verification of the effectiveness of the action programme	Upgrade of water treatment plant
Cavan	Belturbet	1,986	Q4 2018	EPA Direction required compliance by December 2020. Monitoring underway to verify effectiveness of the action programme.	Complete catchment-focussed engagement actions involving Irish Water and the relevant stakeholders (as set out in Irish Water's response to EPA Direction) to achieve compliance with the limits for pesticides
Cavan	Shercock	734	Q1 2019	Upgrade works at the treatment plant (which is operated under a private Group Water Scheme) have been approved, but no completion date provided.	To be confirmed - relates to private Group Water Scheme (not the responsibility of Irish Water)
Cavan	Dowra PWS	95	Q1 2019	Upgrade works at the treatment plant (which is operated under a private Group Water Scheme) have been approved, but no completion date provided.	To be confirmed - relates to private Group Water Scheme (not the responsibility of Irish Water)
Clare	Corofin	1,316	Q4 2015	June 2022	Upgrade of water treatment plant
Clare	Ennistymon RWS	7,179	Q4 2015	March 2023	Upgrade of water treatment plant
Clare	West Clare RWS (New WTP)	11,587	Q3 2017	EPA Direction requires compliance by December 2021. Irish Water has now provided a completion date of June 2022.	Upgrade of water treatment plant
Clare	West Clare RWS (Old WTP)	3,995	Q2 2021	To be submitted by Irish Water	Decommission and connect to West Clare RWS (New WTP)

County	Supply	Population	Date supply put on the RAL	Completion date for action plan	Reason
Cork	Mitchelstown North	2,379	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Cork	Castletownbere	2,370	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Cork	Glashaboy	24,602	Q1 2020	June 2024	Upgrade of water treatment plant
Cork	Whitegate Regional	9,897	Q1 2021	To be submitted by Irish Water	To be submitted by Irish Water
Cork City	Cork City Water Supply	97,176	2008	January 2022	Upgrade of water treatment plant
Donegal	Ballymagroarty	756	Q2 2020	February 2022	Installation of GAC system for removal of organics to minimise THM formation
Donegal	Glenties-Ardara	3,647	2008	September 2023	Installation of membrane filtration system to address the raw water colour and organic content, and minimise THM formation
Donegal	Milford	2,681	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Kerry	Ballyheigue	2,543	Q4 2019	Complete and awaiting verification of the effectiveness of the action programme	Installation of UV disinfection
Kerry	Aughacasla	353	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Kerry	Cahersiveen	1,413	Q4 2019	UV disinfection system installed and awaiting verification data. December 2023 to address THM risk.	Installation of UV disinfection to address Cryptosporidium risk. Irish Water to submit solution to address THM risk.
Kerry	Caragh Lake	1,958	2008	June 2022	Upgrade of pressure filtration and installation of GAC
Kerry	Kilgarvan 046A	825	Q1 2021	To be submitted by Irish Water	To be submitted by Irish Water

County	Supply	Population	Date supply put on the RAL	Completion date for action plan	Reason
Kerry	Mountain Stage	866	2008	Complete but awaiting ESB connection to the water treatment plant	Upgrade of treatment plant to include filtration plus coagulation and/or UV.
KIlkenny	Callan	2675	Q3 2021	December 2022	Installation of UV disinfection
Kilkenny	Kilkenny City (Radestown) WS	15,344	2008	EPA Direction requires compliance by 30th June 2022. Irish Water has now provided a completion date of March 2024.	Abandon source of water supply and replace with Troyswood PWS
Kilkenny	Pilltown-Fiddown	3,047	Q2 2019	December 2022	Develop new groundwater source
Limerick	Foynes/Shannon Estuary PWS	7,242	Q4 2020	EPA Direction requires compliance by April 2023	To be submitted by Irish Water
Limerick	Fedamore	507	Q1 2020	April 2022	Develop new groundwater source
Limerick	Newcastle West	9,939	Q4 2017	EPA Direction required compliance by June 2020. Monitoring underway to verify effectiveness of the action programme.	Complete catchment-focussed engagement actions involving Irish Water and the relevant stakeholders (as set out in Irish Water's response to EPA Direction) to achieve compliance with the limits for pesticides
Longford	Ballymahon	8,247	Q3 2021	January 2022	Reinstatement of pH correction
Longford	Longford Central	17,500	Q1 2020	March 2022 for THM compliance. EPA Direction on pesticides required compliance by December 2019. Monitoring underway to verify effectiveness of the action programme.	Upgrade of water treatment plant. Pesticides: Complete catchment-focussed engagement actions involving Irish Water and the relevant stakeholders (as set out in Irish Water's response to EPA Direction) to achieve compliance with the limits for pesticides.
Louth	Greenmount	4,964	Q2 2019	To be submitted by Irish Water	To be submitted by Irish Water

County	Supply	Population	Date supply put on the RAL	Completion date for action plan	Reason
Louth	Tallanstown	2,040	Q3 2019	EPA Direction required compliance by December 2020. Irish Water has now provided a completion date of September 2022.	Replacement of supply with Cavanhill PWS
Mayo	Louisburgh	793	Q3 2021	To be submitted by Irish Water	Abandon source and connect to Westport PWS (via Murrisk Group Water Scheme)
Mayo	Newport PWS	705	Q3 2019	EPA Direction required compliance by December 2021. Monitoring underway to verify effectiveness of the action programme.	Complete catchment-focussed engagement actions involving Irish Water and the relevant stakeholders (as set out in Irish Water's response to EPA Direction) to achieve compliance with the limits for pesticides
Meath	Batterstown	96	Q3 2021	June 2022	Replacement of UV disinfection system to address bromate exceedances
Meath	Drumcondrath	1,219	Q3 2015	EPA Direction requires compliance by June 2023	Develop new groundwater sources or install coagulation, flocculation & clarification at water treatment plant
Meath	Navan - Mid Meath Kilcarn PWS	6,412	2008	To be submitted by Irish Water	To be submitted by Irish Water
Meath	Trim PWS	11,539	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Offaly	Clara/Ferbane RWSS	7,700	Q2 2019	June 2024	Upgrade of water treatment plant
Roscommon	North East Regional	8,191	Q4 2021	To be submitted by Irish Water	To be submitted by Irish Water
Tipperary	Borrisokane	1,807	Q2 2021	June 2022	Installation of UV disinfection
Tipperary	Burncourt Ballylooby	1,807	Q2 2021	June 2022	Installation of UV disinfection

County	Supply	Population	Date supply put on the RAL	Completion date for action plan	Reason
Tipperary	Clonmel Poulavanogue	2,750	2008	December 2026	Investigating feasibility of expanding the well field at Monroe to allow rationalisation of Clonmel Poulavanogue water treatment plant
Tipperary	Galtee Regional	11,793	Q3 2019	To be submitted by Irish Water	Further upgrade works proposed by Irish Water
Tipperary	Nenagh Regional	15,161	Q2 2021	To be submitted by Irish Water	To be submitted by Irish Water
Waterford	Dungarvan	12,116	Q3 2020	September 2026	Construction of new water treatment plant
Waterford	Kereen	27	Q2 2021	March 2023	Abandon source and connect to Cappoquin PWS
Wexford	Clonroche	538	Q4 2018	EPA Direction required compliance by January 2021. Monitoring underway to verify the effectiveness of the action programme.	Complete catchment-focussed engagement actions involving Irish Water and the relevant stakeholders (as set out in Irish Water's response to EPA Direction) to achieve compliance with the limits for pesticides
Wexford	Wexford Town	22,337	Q4 2021	To be submitted by Irish Water	Upgrade of water treatment plant
Wicklow	Aughrim / Annacurra	1,644	2008	EPA Direction requires compliance by December 2023	Abandon source and connect to Arklow water treatment plant
Wicklow	Ballymorris	18	Q1 2021	December 2023	Abandon source and connect to Arklow water treatment plant

APPENDIX B MONITORING AND COMPLIANCE SUMMARY FOR PUBLIC WATER SUPPLIES IN 2021

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
E. coli	753	4	99.47	8301	4	99.95
Enterococci	616	0	100.00	1014	0	100.00
Chemical[37]						
1,2-dichloroethane	622	0	100.00	1020	0	100.00
Antimony	622	0	100.00	1021	0	100.00
Arsenic	622	1	99.84	1025	1	99.90
Benzene	622	0	100.00	1021	0	100.00
Benzo(a)pyrene	622	0	100.00	1021	0	100.00
Boron	622	0	100.00	1018	0	100.00
Bromate	622	2	99.68	1026	2	99.81
Cadmium	622	0	100.00	1020	0	100.00
Chromium	622	0	100.00	1021	0	100.00
Copper	622	2	99.68	1022	2	99.80
Cyanide	622	0	100.00	1045	0	100.00
Fluoride	609	23	96.22	1007	23	97.72
Lead	622	10	98.39	1023	11	98.92
Mercury	622	0	100.00	1021	0	100.00
Nickel	622	0	100.00	1022	0	100.00
Nitrate	595	0	100.00	954	0	100.00
Nitrite (at tap)	592	1	99.83	950	1	99.89
PAH	600	0	100.00	991	0	100.00
Pesticides - Total	622	1	99.84	1020	1	99.90
Selenium	622	0	100.00	1021	0	100.00
Tetrachloroethene & Trichloroethene	617	0	100.00	1012	0	100.00
Total Trihalomethanes	622	40	93.57	1022	48	95.30
Indicator						
Aluminium	639	39	93.90	6387	61	99.04
Ammonium	635	1	99.84	1096	1	99.91
Chloride	622	1	99.84	1021	1	99.90
Clostridium perfringens	622	2	99.68	1023	2	99.80
Coliform Bacteria	753	41	94.56	8302	43	99.48
Colony Count @ 22°C	753	86	88.58	6941	100	98.56
Colour	750	50	93.33	8135	76	99.07
Conductivity	753	0	100.00	8216	0	100.00
Iron	753	50	93.36	8197	63	99.23
Manganese	636	14	97.80	1107	17	98.46
Odour	753	0	100.00	7439	0	100.00
pH	753	108	85.66	8218	219	97.34
Sodium	621	1	99.84	1018	1	99.90
Sulphate	622	0	100.00	1020	0	100.00
Taste	752	1	99.87	7409	1	99.99
Total Organic Carbon	621	5	99.19	1020	5	99.51
Turbidity (at tap)	753	13	98.27	7990	14	99.82

37 One supply showed an exceedance for radioactivity parameters in 2021 and this is being investigated

APPENDIX C MONITORING AND COMPLIANCE SUMMARY FOR PUBLIC GROUP WATER SUPPLIES IN 2021

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
E. coli	347	0	100.00	735	0	100.00
Enterococci	157	1	99.36	163	1	99.39
Chemical						
1,2-dichloroethane	107	0	100.00	112	0	100.00
Antimony	125	0	100.00	142	0	100.00
Arsenic	125	0	100.00	142	0	100.00
Benzene	110	0	100.00	116	0	100.00
Benzo(a)pyrene	108	0	100.00	114	0	100.00
Boron	125	0	100.00	142	0	100.00
Bromate	108	0	100.00	114	0	100.00
Cadmium	125	0	100.00	142	0	100.00
Chromium	124	0	100.00	141	0	100.00
Copper	125	0	100.00	142	0	100.00
Cyanide	108	0	100.00	114	0	100.00
Fluoride	67	1	98.51	74	1	98.65
Lead	142	0	100.00	179	0	100.00
Mercury	106	0	100.00	112	0	100.00
Nickel	124	0	100.00	141	0	100.00
Nitrate	168	0	100.00	189	0	100.00
Nitrite (at tap)	201	0	100.00	314	0	100.00
PAH	108	0	100.00	114	0	100.00
Pesticides - Total	108	0	100.00	114	0	100.00
Selenium	125	0	100.00	142	0	100.00
Tetrachloroethene & Trichloroethene	110	0	100.00	116	0	100.00
Total Trihalomethanes	153	28	81.70	161	28	82.61
Indicator						
Aluminium	287	3	98.95	571	3	99.47
Ammonium	191	1	99.48	300	1	99.67
Chloride	110	0	100.00	119	0	100.00
Clostridium perfringens	157	0	100.00	163	0	100.00
Coliform Bacteria	347	11	96.83	735	11	98.50
Colony Count @ 22°C	348	18	94.83	710	21	97.04
Colour	348	7	97.99	689	8	98.84
Conductivity	350	0	100.00	734	0	100.00
Iron	335	6	98.21	696	8	98.85
Manganese	189	6	96.83	225	6	97.33
Odour	349	0	100.00	737	0	100.00
pH	350	4	98.86	734	4	99.46
Sodium	138	0	100.00	169	0	100.00
Sulphate	110	0	100.00	119	0	100.00
Taste	342	0	100.00	715	0	100.00
Total Organic Carbon	108	0	100.00	114	0	100.00
Turbidity (at tap)	349	1	99.71	723	1	99.86

APPENDIX D-1 DIRECTIONS ISSUED IN 2021

County	Supply	Issue	Date Direction issued	Date Direction to be complied with	Status at end of 2021
Kerry	Cahersiveen	THMs and Crypto/ Giardia	16/4/21	30/6/21	Direction complied with
Waterford	Dungarvan	Elevated turbidity	16/4/21	30/6/21	Direction complied with
Donegal	Glenties/Ardara	Trihalomethanes	16/4/21	30/6/21	Direction complied with
Limerick	Foynes/Shannon Estuary	Pesticide exceedances	16/4/21	Final report & compliance by 30/4/23	Date in the direction has not yet been reached
Donegal	Ballymagroarty	Trihalomethanes	16/4/21	30/6/21	Direction complied with
Meath	Drumcondrath	Provide new supply or upgrade existing supply to resolve issues with THMs	16/4/21	Final report & compliance by 14/7/23	Date in the direction has not yet been reached
Dublin	Leixlip	Upgrade water treatment controls and infrastructure within the plant	16/4/21	Final report & compliance by 7/7/23	Date in the direction has not yet been reached
Wicklow	Aughrim Annacurra	Provide new supply or upgrade existing supply to resolve issues with THMs	16/4/21	31/12/23	Date in the direction has not yet been reached
Louth	Kilineer	Requires installation and validation of UV disinfection system.	9/4/21	15/6/21	Deadline passed - further enforcement action not being pursued as satisfactory UV disinfection system provided during 2021.

APPENDIX D-2 DIRECTIONS OPEN RELATING TO THM COMPLIANCE (END Q2 2022)

Water Supply Zone	County	Date for Compliance with Direction
Caragh Lake	Kerry	30/06/2022
Aughrim/Annacurra	Wicklow	31/12/2023
Kilkenny City (Radestown)	Kilkenny	30/06/2022
Drumcondrath	Meath	30/06/2023
Nenagh	Tipperary	30/06/2022
West Clare RWS (New WTP)	Clare	31/12/2021[38]
Clara/Ferbane	Offaly	30/06/2024
North East Regional	Roscommon	30/06/2022
Kilgarvan	Kerry	30/06/2022
Mitchelstown North	Cork	30/06/2022
Milford	Donegal	30/06/2022
Castletownbere	Cork	30/06/2022
Cahersiveen	Kerry	31/12/2023

38 Direction deadline for Wed Clare RWS (New WTP) has passed and the Agency has continued to be notified of further THMs exceedances during 2022. However, an audit conducted by EPA has confirmed work has substantially progressed on this site

APPENDIX E PUBLIC GROUP SCHEMES TRIHALOMETHANE FAILURES IN 2021

County	Public group scheme name	Supplied by public scheme
Clare County Council	Annagh	West Clare RWS Old
Clare County Council	Ballymakea	West Clare RWs New
Clare County Council	Ballymarkham, Kildrum	Sixmilebridge RWS
Clare County Council	Brisla	West Clare RWS Old
Clare County Council	Caherkine	Sixmilebridge RWS
Clare County Council	Cappa Rossmanagher	Sixmilebridge RWS
Clare County Council	Clonadrum	West Clare RWS New
Clare County Council	Cross, Kilbaha	West Clare RWS New
Clare County Council	Doonmore	West Clare RWS Old
Clare County Council	Dunsallagh, Killeran	West Clare RWs Old
Clare County Council	Glendine	West Clare RWS Old
Clare County Council	Killimer	West Clare RWS New
Clare County Council	Knocknagoug	Sixmilebridge RWS
Clare County Council	Lisdeen	West Clare RWS New
Clare County Council	Manusmore	Sixmilebridge RWS
Clare County Council	Moyasta	West Clare RWS New
Clare County Council	Querrin	West Clare RWS New
Clare County Council	Rahone	West Clare RWS New
Clare County Council	Rathfolan	Sixmilebridge RWS
Clare County Council	Schragh	West Clare RWS Old
Clare County Council	Silverhill/Glendine	West Clare RWS Old
Clare County Council	Tiernaglohane	West Clare RWS Old
Kerry County Council	Dawros	Dawros GWS[39]
Kerry County Council	Lyreacrompane	Lyreacrompane PWS
Limerick City & County Council	Clorane Public	Foynes Shannon Estuary
Mayo County Council	Emlybeg Common/Carne	Erris
Mayo County Council	Moyrahan	Erris
Mayo County Council	Treannagleragh	Kiltimagh

39 This water supply is not sourced from a public supply

APPENDIX F BOIL WATER AND WATER RESTRICTION NOTICES IN PLACE DURING 2021

Table 1: Boil Water Notices in place during 2021

County	Scheme Name	Reason	Date Notice Issued	Date Notice Lifted	Population Affected[40]
Carlow	Borris	Elevated turbidity	20/10/2021	19/11/2021	560
Carlow	Carlow North Regional	Elevated turbidity	08/07/2021	14/07/2021	10,089
Carlow	Carlow Town	Elevated turbidity	09/07/2021	14/07/2021	20,551
Carlow	Tullow	Elevated turbidity	08/07/2021	14/07/2021	3,125
Cork	Doneraile	Inadequate disinfection	29/09/2021	04/10/2021	2,388
Cork	Knockadoon	Inadequate contact time	31/07/2019	20/01/2022	27
Cork	Macroom	Aluminium	20/10/2021	15/12/2021	4,148
Cork	Newmarket	Elevated turbidity	07/12/2021	10/12/2021	9,529
Cork	Whitegate Regional	Elevated turbidity	25/12/2021	03/06/2022	-
Cork	Whitegate Regional	Elevated turbidity	28/10/2021	05/11/2021	9,897
Cork	Whitegate Regional	Elevated turbidity	31/01/2021	12/03/2021	-
Donegal	Glenties-Ardara	Elevated turbidity	07/12/2021	14/12/2021	3,518
Dublin	DCC Zone 6	Inadequate chlorination	06/12/2021	10/12/2021	17,497
Galway	Galway City PWS	Inadequate chlorine residual in part of network	24/09/2021	29/09/2021	194
Galway	Galway City PWS	E. coli bacteria	17/06/2021	24/06/2021	2,389
Galway	Glenamaddy	Deterioration in raw water quality	30/09/2021	18/10/2021	818
Galway	Teeranea/Lettermore PWS	Treatment plant operational issues	20/02/2021	26/03/2021	911
Kerry	Annascaul PWS 002D	Power outage/plant breakdown (storm event)	07/12/2021	11/12/2021	467
Kerry	Aughacasla PWS 005D	Power outage/plant breakdown (storm event)	07/12/2021	16/12/2021	42
Kerry	Aughacasla PWS 005D	Inadequate contact time	09/06/2020	29/06/2021	353
Kerry	Ballyheigue	Cryptosporidium	11/10/2021	19/11/2021	2,292
Kerry	Caragh Lake PWS 022A	Power outage/plant breakdown (storm event)	07/12/2021	11/12/2021	1,958
Kerry	Portmagee PWS 064H	Elevated turbidity	09/10/2021	12/10/2021	1,000
Kilkenny	Mooncoin Regional PWS	Inadequate chlorination	12/11/2021	16/11/2021	5,866
Kilkenny	Paulstown-Choill Rua PWS	Cryptosporidium	17/12/2020	15/07/2021	205
Laois	The Strand PWS	Inadequate contact time	13/11/2020	03/09/2021	6

40 Where multiple notices are issued for the same supply during 2021 –population affected is counted once in total population affected figures to avoid duplication.

County	Scheme Name	Reason	Date Notice Issued	Date Notice Lifted	Population Affected[40]
Limerick	Fedamore PWS	Elevated turbidity	02/12/2019	17/12/2021	492
Limerick	Foynes/Shannon PWS[41]	Inadequate chlorination	05/10/2021	15/12/2021	500
Longford	Longford Central	Elevated turbidity	03/11/2021	06/12/2021	17,500
Louth	Kilineer	UV not validated	26/01/2021	31/08/2021	35
Mayo	Achill RWSS	Precautionary BWN for duration of upgrade works at water treatment plant	01/02/2021	26/03/2021	2,447
Mayo	Clare Island PWS	Cryptosporidium	18/06/2021	24/09/2021	-
Mayo	Clare Island PWS	Cryptosporidium	12/03/2021	22/03/2021	165
Meath	Abbeyfields Housing Estate Clonard	Treatment plant operational issues	04/06/2021	16/06/2021	328
Meath	Baltrasna[42]	E. coli bacteria and Manganese	22/12/2014	-	9
Meath	Batterstown	Inadequate disinfection	13/12/2021	-	96
Meath	Drumcondrath	Elevated turbidity	28/12/2021	08/02/2022	1,227
Meath	Drumcondrath	Elevated turbidity	26/07/2021	11/10/2021	-
Meath	Longwood	Inadequate disinfection	05/07/2019	12/08/2021	6
Meath	Slane	Inadequate disinfection	05/07/2019	12/08/2021	3
Meath	St Louis, National School, Rathkenny	UV not validated	05/02/2021	-	48
Meath	Trim	Treatment plant operational issues	16/12/2021	20/12/2021	10,293
Monaghan	Inniskeen	Coliform bacteria	11/11/2021	17/11/2021	5
Tipperary	Ardfinnan Regional	Elevated turbidity	06/08/2021	12/08/2021	11,542
Tipperary	Borrisokane	Cryptosporidium	01/04/2021	03/06/2021	1,752
Tipperary	Carrick-On-Suir (Lingaun River)	Elevated turbidity	26/12/2021	19/01/2022	3,954
Tipperary	Carrick-On-Suir (Lingaun River)	Cryptosporidium	02/11/2021	06/11/2021	-
Tipperary	Clonmel Poulavanogue	Inadequate disinfection	11/10/2018	-	96
Tipperary	Galtee Regional	Inadequate chlorine levels (cast iron mains)	30/10/2019	11/02/2022	307
Tipperary	Glenary	Elevated turbidity	05/10/2021	08/10/2021	45
Tipperary	Glenary	Inadequate chlorine levels (cast iron mains)	04/05/2021	11/06/2021	3
Tipperary	Glenary	Inadequate chlorine levels (cast iron mains)	16/09/2019	28/04/2021	10,564
Tipperary	Tipperary Town Supply	Elevated turbidity	10/12/2021	23/12/2021	4,818
Waterford	Ballyknock	Inadequate disinfection	02/11/2021	15/12/2021	11

41 This is a private side issue (a manufacturing site) and therefore is a matter for the user to resolve, rather than Irish Water.

42 This is a disputed supply.

County	Scheme Name	Reason	Date Notice Issued	Date Notice Lifted	Population Affected[40]
Waterford	Carrignagower	UV not validated & inadequate chlorine contact time.	22/12/2021	-	35
Waterford	Deelish/Ballinacourty	Elevated turbidity	28/10/2021	11/11/2021	362
Waterford	Fews	Elevated turbidity	28/10/2021	09/11/2021	188
Waterford	Garryahylish	UV not validated. No chlorination.	22/12/2021	-	2
Waterford	Grallagh	Elevated turbidity	29/10/2021	17/11/2021	67
Waterford	Kereen	Elevated turbidity	19/02/2021	-	28
Waterford	LCB Lismore Deerpark	Inadequate disinfection	17/09/2021	01/10/2021	1,671
Waterford	Tinkock/Tinnabinna	UV not validated and inadequate contact time	22/12/2021	-	43
Wexford	Coolgreany	Inadequate chlorination	29/11/2021	02/12/2021	1,042
Wexford	Enniscorthy	Elevated turbidity	07/12/2021	10/12/2021	11,187
Wexford	Enniscorthy	Elevated turbidity	30/10/2021	05/11/2021	-
Wexford	Gorey Regional Creagh	Elevated turbidity	28/10/2021	18/11/2021	7,241
Wexford	Wexford Town	Elevated turbidity	30/10/2021	17/11/2021	-
Wexford	Wexford Town	Inadequate chlorination	21/10/2021	26/10/2021	25,196
Wicklow	Ballymorris Public Supply	Elevated turbidity	18/07/2019	-	17
Wicklow	Johnstown South (Arklow) Public Supply[43]	Coliforms	04/06/2015	-	6

43 This is a disputed supply.

Table 2: Water Restriction Notices in place during 2021

County	Supply Name	Reason	Issued	Rescinded	Population Affected
Cavan	Cootehill PWS	Manganese	30/07/2021	13/08/2021	2191
Cavan	Belturbet P.W.S.	Manganese	10/09/2021	15/09/2021	1986
Clare	Shannon/Sixmilebridge RWSS	Manganese	07/08/2021	17/08/2021	7648
Cork	Whiddy Island	Manganese	06/09/2021	15/02/2022	30
Dublin	DLR Zone 7	Manganese	21/09/2021	15/10/2021	3
Dublin	DLR Zone 1	Manganese	28/10/2021	19/11/2021	3
Dublin	DLR Zone 1	Manganese	09/09/2021	22/09/2021	100
Dublin	DLR Zone 1	Manganese	15/10/2021	27/10/2021	3
Kerry	Central Regional-Lough Guitane (H) 400F	Iron (cast iron mains)	13/10/2020	05/11/2021	4
Kerry	Central Regional-Lough Guitane (H) 400F	Iron (cast iron mains)	16/10/2020	05/11/2021	6
Kerry	Central Regional-Lough Guitane (H) 400F	Iron (cast iron mains)	18/11/2020	05/11/2021	6
Kildare	Barrow/Poulaphouca Blend	Manganese	09/07/2021	20/07/2021	3
Kildare	Barrow/Poulaphouca Blend	Manganese	07/07/2021	15/07/2021	3
Limerick	Glin PWS (Con Bruder Fitted Kitchens)[44]	Raw water with no treatment	16/07/2021	01/11/2021	25
Louth	Cavanhill	Manganese	24/08/2021	06/09/2021	200
Louth	Cavanhill	Manganese	13/08/2021	25/08/2021	3
Louth	Greenmount	Chlorine depletion	01/12/2021	10/12/2021	3955
Louth	Cavanhill	Manganese	25/06/2021	01/07/2021	3
Louth	Cavanhill	Manganese	16/06/2021	21/06/2021	3
Meath	Batterstown	Bromate	16/09/2021	13/12/2021	96
Meath	Moynalty	Over-chlorination	20/06/2021	22/06/2021	191
Monaghan	Newbliss	Manganese	27/07/2021	13/08/2021	424
Tipperary	Templetuohy	Nitrate	31/01/2020	30/10/2021	819
Waterford	Kereen	Borehole Collapse and pump breakdown	28/04/2021	10/05/2021	27
Waterford	Ballydermody[45]	Nitrate	12/12/2013	-	2
Wicklow	Barndarrig Public Supply	Nitrite	09/02/2021	16/07/2021	220

44 This is a private side issue (a manufacturing site) and therefore is a matter for the user to resolve, rather than Irish Water.

45 This is a disputed supply.

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an GCC freagrach as an gcomhshaol a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialáil: *Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.*

Eolas: *Sonraí, eolas agus measúnú ardchaighdeáin, spriocdhírithe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.*

Abhcóideacht: *Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.*

I measc ár gcuid freagrachtaí tá:

Ceadúnú

- Gníomhaíochtaí tionscail, dramhaíola agus stórála peitril ar scála mór;
- Sceitheadh fuíolluisce uirbigh;
- Úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe;
- Foinsí radaíochta ianúcháin;
- Astaíochtaí gás ceaptha teasa ó thionscal agus ón eitlíocht trí Scéim an AE um Thrádáil Astaíochtaí.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Iniúchadh agus cigireacht ar shaoráidí a bhfuil ceadúnas acu ón GCC;
- Cur i bhfeidhm an dea-chleachtais a stiúradh i ngníomhaíochtaí agus i saoráidí rialáilte;
- Maoirseacht a dhéanamh ar fhreagrachtaí an údaráis áitiúil as cosaint an chomhshaoil;
- Caighdeán an uisce óil phoiblí a rialáil agus údaruithe um sceitheadh fuíolluisce uirbigh a fhorfheidhmiú
- Caighdeán an uisce óil phoiblí agus phríobháidigh a mheasúnú agus tuairisciú air;
- Comhordú a dhéanamh ar líonra d'eagraíochtaí seirbhíse poiblí chun tacú le gníomhú i gcoinne coireachta comhshaoil;
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Dramhaíola agus Ceimiceáin sa Chomhshaol

- Rialacháin dramhaíola a chur i bhfeidhm agus a fhorfheidhmiú lena n-áirítear saincheisteanna forfheidhmithe náisiúnta;
- Staitisticí dramhaíola náisiúnta a ullmhú agus a fhoilsiú chomh maith leis an bPlean Náisiúnta um Bainistíocht Dramhaíola Guaisí;
- An Clár Náisiúnta um Chosc Dramhaíola a fhorbairt agus a chur i bhfeidhm;
- Reachtaíocht ar rialú ceimiceán sa timpeallacht a chur i bhfeidhm agus tuairisciú ar an reachtaíocht sin.

Bainistíocht Uisce

- Plé le struchtúir náisiúnta agus réigiúnacha rialachais agus oibriúcháin chun an Chreat-treoir Uisce a chur i bhfeidhm;
- Monatóireacht, measúnú agus tuairisciú a dhéanamh ar chaighdeán aibhneacha, lochanna, uiscí idirchreasa agus cósta, uiscí snámha agus screamhuisce chomh maith le tomhas ar leibhéil uisce agus sreabhadh abhann.

Eolaíocht Aeráide & Athrú Aeráide

- Fardail agus réamh-mheastacháin a fhoilsiú um astaíochtaí gás ceaptha teasa na hÉireann;
- Rúnaíocht a chur ar fáil don Chomhairle Chomhairleach ar Athrú Aeráide agus tacaíocht a thabhairt don Idirphlé Náisiúnta ar Ghníomhú ar son na hAeráide;
- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

Monatóireacht & Measúnú ar an gComhshaol

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Thimpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaol na hÉireann.
- Taighde agus Forbairt Comhshaoil
- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha;
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta;
- Sainseirbhísí um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Ardú Feasachta agus Faisnéis Inrochtana

- Tuairisciú, comhairle agus treoir neamhspleách, fianaise-bhunaithe a chur ar fáil don Rialtas, don tionscal agus don phobal ar ábhair maidir le cosaint comhshaoil agus raideolaíoch;
- An nasc idir sláinte agus folláine, an geilleagar agus timpeallacht ghlan a chur chun cinn;
- Feasacht comhshaoil a chur chun cinn lena n-áirítear tacú le hiompraíocht um éifeachtúlacht acmhainní agus aistriú aeráide;
- Tástáil radóin a chur chun cinn i dtithe agus in ionaid oibre agus feabhsúchán a mholadh áit is gá.

Comhpháirtíocht agus líonrú

- Oibriú le gníomhaireachtaí idirnáisiúnta agus náisiúnta, údaráis réigiúnacha agus áitiúla, eagraíochtaí neamhrialtais, comhlachtaí ionadaíocha agus ranna rialtais chun cosaint chomhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an GCC á bhainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóir. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhuanaitheacht i leith Cúrsaí Comhshaoil
- An Oifig Forfheidhmithe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint ar Radaíocht agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tugann coistí comhairleacha cabhair don Ghníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters

PO Box 3000,
Johnstown Castle Estate
County Wexford, Ireland

T: +353 53 916 0600
F: +353 53 916 0699
E: info@epa.ie
W: www.epa.ie
LoCall: 1890 33 55 99

Regional Inspectorate
McCumiskey House,
Richview, Clonskeagh Road,
Dublin 14, Ireland

T: +353 1 268 0100
F: +353 1 268 0199

Regional Inspectorate
Inniscarra, County Cork,
Ireland

T: +353 21 487 5540
F: +353 21 487 5545

Regional Inspectorate
Seville Lodge, Callan Road,
Kilkenny, Ireland

T +353 56 779 6700
F +353 56 779 6798

Regional Inspectorate
John Moore Road, Castlebar
County Mayo, Ireland

T +353 94 904 8400
F +353 94 902 1934

Regional Inspectorate
The Glen, Monaghan, Ireland

T +353 47 77600
F +353 47 84987

Regional Offices

The Civic Centre
Church St., Athlone
Co. Westmeath, Ireland
T +353 906 475722

Room 3, Raheen Conference Centre,
Pearse House, Pearse Road
Raheen Business Park, Limerick,
Ireland
T +353 61 224764

Printed on environmentally friendly paper stock