

Drinking Water Quality **Annual Report 2011**



Introduction and Foreword

I am pleased to present Northern Ireland Water's (NI Water) Annual Drinking Water Quality report covering the calendar year 2011. This is our eighth annual review on the quality of drinking water in Northern Ireland since new regulations came into force in January 2004. The Report shows that we are continuing to deliver the best drinking water quality ever to our customers.

NI Water aims to provide high quality drinking water, in a cost effective manner, to meet the requirements of both existing and future customers. By doing this we contribute to the health and wellbeing of the community and the needs of commerce in a sustainable way.

Drinking water is carefully monitored and tested for quality. This report summarises NI Water's results from 1 January 2011 to 31 December 2011 to meet the requirements of the Regulations under which we operate. During this reporting period, 99.80% of all tests carried out on samples taken from customers' taps and authorised supply points, complied with the regulatory standards assessed using the Mean Zonal Compliance (MZC) method of assessment. MZC is the method required by the drinking water regulator in Northern Ireland. This assessment demonstrates that NI Water is maintaining consistently good drinking water quality.

As part of NI Water's reporting requirements, this report also incorporates data to meet the requirements of the Water Supply (Water Fittings) Regulations (NI) 2009.

Our ongoing investments in water treatment, storage and mains have maintained regulatory compliance and improved our quality of service. Whilst we continue to make progress, we need to continue to invest for the future to meet the lower regulatory compliance level for lead in 2014 and to meet the challenge of non-compliances brought about by DWI required changes to analytical methods.

Our capital investment programme for the reporting period is detailed by council area in Appendix 4.

We welcome these challenges and will continue to work closely with our economic and environmental regulators, the Consumer Council and other stakeholders throughout this process.

I trust you will find this report informative and relevant to your needs. As we gain the benefits of the ongoing capital investment delivered by NI Water, you can be assured of our commitment to maintaining and where possible improving the quality of the drinking water delivered to our customers. NI Water exceeds the targets placed upon it to comply with regulatory water quality standards, and will continue to improve our service to customers in the future.

Trevor Haslett
Chief Executive Officer



Contents Page

Introduction and Foreword	2	Appendix 1	20
Contents Page	2	Drinking Water Quality Standards	20
Drinking Water Quality	3	Explanatory Notes	29
Water Quality Standards	3	Appendix 2	30
Drinking Water Safety Plans	4	Programmes of Work to meet Authorised Departure Requirements	30
Drinking Water and Health	4	2011 Authorised Departures under Regulation 37	30
Environmental Management System (EMS) ISO 14001	4	Appendix 3	31
Mains Rehabilitation	4	Water Quality Report for Water Supply Zones	31
Authorised Departures (ADs)	4	Water Quality Report for Authorised Supply Points	33
Mean Zonal Compliance (MZC)	5	Water Quality Report for Water Treatment Works	33
Drinking Water Quality Summary – Year on Year	5	Water Quality Report for Service Reservoirs	35
Monitoring Drinking Water Quality	6	2011 Mean Zonal Compliance	36
Sufficiency of Supply	7	Appendix 4	38
Drinking Water Inspectorate - Technical Audit	8	Water Quality by Northern Ireland Local Council Area	38
Water Quality Events (Incidents and Non-Incidents)	8	Appendix 5	65
Regulatory Enforcement	9	Water Quality Incidents / Non-incidents	65
Quality Assurance	10	Incidents 2011	65
Use of Technology	10	Non-Incidents 2011	72
Water Quality Summary	11	Appendix 6	73
Water Quality Issues	15	Water Supply (Water Fittings) Regulations (NI) 2009	73
Further information	16	Enforcement Policy	74
Investing for the Future	17	Enforcement Data	74
Asset Management	17	Notifications	74
Research, Development and Innovation	17	Approved Contractors Scheme	75
Water Supply (Water Fittings) Regulations (NI) 2009	18	Inspections (Other than those arising from Notification)	75
Water Regulation Background	18	Enforcement Actions	76
Public Information	19	General Information	76
Drinking Water Register	19	Reporting Year Recap	77
Customer Services	19	Appendix 7	78
		Glossary of Technical Terms	78

Drinking Water Quality

Water Quality Standards

During 2011 Drinking Water Quality in Northern Ireland was assessed against standards set in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 as appended by the 2010 updated regulations. The regulations incorporate the requirements of the European Commission's Drinking Water Directive 98/83/EC (the "Directive") relating to the quality of water intended for human consumption and, for certain parameters, more stringent UK national standards.

The Regulations set out the requirements to be met by NI Water when supplying water for domestic or food production purposes and include: -

- water quality standards for wholesomeness;
- sampling locations for monitoring purposes;
- minimum requirements for the number, frequency and types of water samples to be taken at sampling locations;
- water sample collection and testing regimes;
- maintaining records of water sample results; and
- the provision and publication of information.

NI Water assesses standards for water quality against the parameters listed in Appendix 1. The standards in the Regulations are normally expressed as 'Prescribed Concentrations or Values' (PCV) and are generally specified as maximum, minimum, percentile or average concentrations for a particular substance. Standards are set to ensure that water is safe to drink and aesthetically acceptable.

The Directive and the Regulations permit standards to be relaxed in certain specified circumstances provided there is no risk to public health under a process of "Authorised Departures." These allow a time limited Authorised Departure from the regulatory limit for certain parameters, provided there is a planned programme of work at the Water Treatment Works to improve the water quality and there are

no adverse health implications. All NI Water's Authorised Departures have now expired with the agreement of the Drinking Water Inspectorate that the planned programmes of work have now been completed or are nearing completion.

The Regulations set demanding standards for the quality of drinking water but contraventions of these standards do not necessarily imply the water represents any public health risk. These contraventions are reported to the Drinking Water Inspectorate, investigated by NI Water, and prompt remedial action taken where appropriate.

NI Water has a monitoring programme in place which covers raw waters, water at various treatment stages, drinking water in distribution and at customer tap. NI Water liaises with its customers on a wide variety of issues and where there is an exceedance of a regulatory parameter, investigations and remedial work is carried out to ensure that drinking water is regulatory compliant. Where the monitoring programme highlights a problem with the customer's plumbing, NI Water informs the customer, the local Environmental Health Officer and the Drinking Water Inspectorate.

To assist in understanding the contents of this report, a glossary of technical terms is provided (Appendix 7).

Drinking Water Safety Plans

A Drinking Water Safety Plan (DWSP) is the most effective way of ensuring that a water supply is safe for human consumption and that it meets the health based standards and other regulatory requirements. It is based on a comprehensive risk assessment and risk management approach to all the steps in a water supply chain from catchment to consumer.

The primary objectives of a DWSP in protecting human health and ensuring good water supply practice are the minimisation of contamination of source waters and effective treatment using appropriate processes. DWSPs are used to map water supply systems, identify the hazards at each stage of the system from catchment, through treatment and the distribution system, to the customer's tap, and to assess the risks that these hazards pose.

The Water Industry has adopted the DWSP approach to risk management from the raw water source, through water treatment, distribution and to our customer's taps. NI Water has put in place systems to identify hazards, assess risks and implement mitigation measures, which could potentially threaten each stage of the water supply process. .



NI Water works with the Northern Ireland Environment Agency (NIEA), the Drinking Water Inspectorate, Forestry Service and other Non-Government Organisations to protect the raw water sources from contamination.

The outputs of these plans – “The Drinking Water Safety Plans” themselves continue to be embedded into company policies and procedures and are reviewed based upon a risk based approach each year.

NI Water uses the DWSP risk assessments to inform the investment strategy for drinking water.

Drinking Water and Health

The safety of drinking water is a paramount public health concern. It is a tribute to the skills and expertise of colleagues working for drinking water providers, regulators, health authorities and local authorities that the safety of drinking water in Northern Ireland is something that the public is able to take for granted.

The Drinking Water Liaison Group (DWLG) is a multi-agency group which considers public health issues associated with the drinking water supply. The Group, which is unique in the UK context, draws its membership from the main stakeholder organisations including the Department of Health, Social Services and Public Safety, the Public Health Agency, the Drinking Water Inspectorate, the Northern Ireland Public Health Laboratory, the Chief Environmental Health Officers' Group and NI Water.

The group produced a comprehensive guidance document on 'drinking water and health' aimed at professionals from a variety of backgrounds who share an interest and involvement in the safety of drinking water.

The purpose of this joint guidance is to set out the roles and responsibilities of the key players, to describe the wider context to the provision of safe drinking water, to detail the arrangements and protocols in place to monitor compliance with standards and to respond to an emergency or incident situation.

This guidance is a “living document” that will be regularly reviewed and updated.

The guidance document can be found at: www.niwater.com/drinkingwaterguidance.asp

Environmental Management System (EMS) ISO 14001

NI Water has a well-established Environmental Management System certified to ISO 14001 and externally accredited. The system assists NI Water in maintaining environmental stewardship whilst providing water and sewerage services to Northern Ireland.

Mains Rehabilitation

NI Water has identified the need to deliver a significant programme of watermains rehabilitation and other works across its ageing network. The works are necessary to ensure the efficient and cost effective operation of its water supply system in the immediate future and longer term. It is also to ensure adequate levels of water quality and customer supply.

To achieve this goal, NI Water has just implemented a new Watermains Rehabilitation Framework, within which it has appointed two contractors. This is to undertake work on a Northern Ireland wide basis as identified by the programme of work from zonal studies.

The drivers for this programme of work are maintenance of the systems, pressure improvement, reduction in interruption to supplies, water quality, reduction in levels of leakage and allowance for growth in demand. NI Water considers a range of techniques for the installation of the rehabilitated mains.

These include relining of the existing asset through online replacement by pipe insertion or pipe bursting, to off line replacement by directional drilling or open cut techniques.

Where possible, cost effective, trenchless technologies will be used to replace or rehabilitate water mains to mitigate the disruption caused by open-cut trench construction. Likely construction methods include pipe-bursting, slip-lining, directional drilling, spray lining and open cut. The most appropriate technology is selected for the various work packages and associated ground and traffic conditions.

Authorised Departures (ADs)

Authorised Departures (ADs) from standards in Northern Ireland are authorised and administered by the Department of the Environment's Drinking Water Inspectorate (DWI) with the agreement of the Health Authorities. During 2011 NI Water had no Authorised Departures in place.

Mean Zonal Compliance (MZC)

Assessment of the quality of water supplied to NI Water's customers is monitored using a measurement known as "Mean Zonal Compliance".

This is the average water quality supplied to our customers and is based on 39 specified parameters measured at either customers' taps or authorised supply points. These parameters are specified by the Drinking Water Inspectorate (DWI).

This method provides a simple means of summarising drinking water compliance and comparing year on year performance, and gives a consistent method of comparing water quality across the UK. It is supported by the DWI as an industry comparator allowing direct comparisons of results.

Drinking Water Quality Summary – Year on Year

Compliance assessed against the "Water Supply (Water Quality) Regulations (Northern Ireland) 2010"

Reporting Year	2005	2006	2007	2008	2009	2010	2011
Mean Zonal Compliance (i) (average water quality at customer tap at parameter level)	99.02%	99.34%	99.30%	99.49%	99.74%	99.81%	99.80%
Water Treatment Works Water Quality	99.89%	99.90%	99.92%	99.95%	99.92%	99.99%	100.00%
Overall Quality at all NI Water Sites and Customer Taps	99.49%	99.64%	99.60%	99.69%	99.80%	99.87%	99.84%

Notes

i. Mean Zonal Compliance (MZC) – method of assessment used across the UK, and supported by the Drinking Water Inspectorate as an industry comparator.

Monitoring Drinking Water Quality

The Regulations necessitate a thorough and extensive water sampling programme to be undertaken, to monitor water quality throughout the supply and distribution systems. The sampling locations and frequencies for the monitoring of drinking water quality are specified in the Regulations. These monitoring arrangements are audited by the Drinking Water Inspectorate (DWI). The mandatory sampling programme requires water samples to be collected regularly at water treatment works, at service reservoirs and water towers used to store treated water and at customers' taps in the water supply zones.

Under the Regulations, samples to be analysed for parameters which do not change in the supply watermain may be collected from Authorised Supply Points. These samples are collected from the final distribution point of the Water Treatment Works, and are considered under the Regulations to be equivalent to samples collected from the

customer tap. All samples are carefully collected, handled and transported to ensure that they accurately represent the water quality which customers receive. NI Water uses skilled and experienced sampling staff for the collection and delivery of the regulatory samples to the laboratories. All sampling staff wear uniforms and carry identity cards when they call upon customers to take a sample.

Samples collected from customers' taps are taken at random addresses in each water supply zone. A water supply zone is a designated area with a population of no more than 100,000 supplied with water by one treatment works or blended water from several works. The number and boundaries of water supply zones are subject to change according to operational requirements as supply sources to areas are adjusted to meet demand and infrastructure developments. On this basis 53 water supply zones were monitored during the period of this report.

The parameters for which samples are tested include: -

- microbiological, e.g. Coliform bacteria
- physical, e.g. pH (Hydrogen ion)
- chemical, e.g. Iron, Manganese, Lead and Nitrate
- aesthetic, e.g. Taste, Odour and Colour

Compliance with the drinking water standards is determined by comparing the results of laboratory analysis of water samples with the relevant Prescribed Concentrations or Values (PCV). Where monitoring indicates that a standard has not been met, appropriate immediate investigation and remedial action is undertaken to ensure that the water supply does not present any public health risk. Sampling programmes are adjusted and increased testing may be scheduled in the water supply zone for the parameter involved. NI Water will at all times liaise with the DWI and the Public Health Agency to ensure customer safety.

Sufficiency of Supply

Approximately 810,000 domestic, agricultural, commercial and business properties in Northern Ireland are connected to the public water supply – this equates to around 99.6% of the total population. This entailed supplying an average of about 604 million litres of high quality drinking water to customers every day during 2011.

For this NI Water utilised approximately 34 sources which include upland Impounding Reservoirs, Boreholes, Rivers and Loughs.

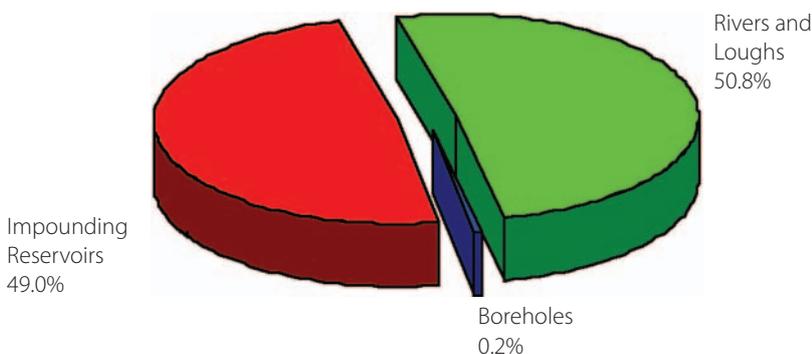
The Water and Sewerage Services (Northern Ireland) Order 2006 requires NI Water to prepare and maintain a water resources management plan to indicate how water resources will be developed and managed to enable the undertaker to meet its obligations. The Order requires NI Water to review the plan on an annual basis and prepare a revised plan every 5 years or when there is a material change in circumstances.

NI Water has recently completed a Water Resource Management Plan to meet this obligation and published this in March 2012.

For the period of this report, water supplies in Northern Ireland were obtained from three types of source, as shown: -

Following the Freeze / Thaw incident in December 2010, NI Water has now put in place the initial short term measures required by NIAUR and DWI to the satisfaction of the environmental and economic regulators as well as other stakeholders.

Raw Water Sources



Drinking Water Inspectorate - Technical Audit

The Drinking Water Inspectorate (DWI), a unit within the Northern Ireland Environment Agency, has an independent responsibility to audit drinking water quality compliance against the standards set in the Regulations.

Each year DWI undertakes a technical audit of the measures taken by NI Water to comply with the Regulations. The technical audit process includes:

- the transfer, to DWI, of analytical results of samples taken throughout the year, from water treatment works, service reservoirs and customers' taps;
- a compliance assessment of this information against the regulatory standards; and
- carrying out an inspection programme which examines the sampling, analytical, reporting, water treatment, distribution policies and relevant procedures.

In 2011, the technical audit inspection programme included:

- audits of Caugh Hill, Lough Macrory and Rathlin Water Treatment Works;
- an audit of the Laboratory Information Management System (LIMS) at (Westland House); and
- progress reporting on agreed follow-up action including non-trivial parameter contraventions.

DWI made a number of recommendations and suggestions and NI Water has followed up on these issues. DWI will report on the inspections and the quality of water supplied by NI Water in its annual report, due to be published later in the year. DWI is located at Klondyke Building, Cromac Avenue, Gasworks Business Park, Lower Ormeau Road, Belfast BT7 2JA.

Water Quality Events (Incidents and Non-Incidents)

NI Water is required under the Drinking Water Regulations to notify the DWI whenever an event occurs that has the potential to impact on drinking water quality. NI Water fully investigates all events and provides the DWI with a substantive report for each. After investigation the event may be shown not to have had a detrimental effect on water quality and is classified in the "Drinking Water Inspector's Report" as a "non-incident" as opposed to an "incident".

A full list of all Water Quality Events notified to the DWI during 2011 is detailed in Appendix 5.

Regulatory Enforcement

DWI put in place two "Consideration of Provisional Enforcement Orders" (CPEO) during 2011. One related to an increase of contraventions of the regulatory limit for Taste and Odour in the water supply zone supplied by Killyhevlin WTW, and the other was due to a failure to analyse a number of parameters with even spacing over the year due to instrument problems.

There were three ongoing CPEOs related to iron contraventions at localised areas. These were defined by specific district metered areas (DMAs) within the Dorisland, Altmore and Altnahinch supply areas.

One CPEO was closed during 2011 following the closure of Altmore WTW. This was in relation to high levels of the pesticide MCPA within the Altmore WTW water supply area.

Quality Assurance

The Regulations require water quality to be monitored using analytical systems which can demonstrate that appropriate accuracy is achieved and maintained. NI Water attaches great importance to the integrity of the analysis and for this reason applies strict laboratory analytical quality control procedures. These systems and procedures are subject to external inspection and audit by the Drinking Water Inspectorate and an assessment of NI Water's performance is included in the Inspectorate's annual report.

NI Water has achieved the requirements of the Drinking Water Testing Specification, (DWTS). This is a national scheme agreed between the Drinking Water Inspectorate and the United Kingdom Accreditation Service for quality assurance within laboratories carrying out analysis for the water industry.

In addition to this, both of NI Water's Testing laboratories have attained the necessary standard of analytical excellence and have been awarded United Kingdom Accreditation Service (UKAS) accreditation.

UKAS auditors carry out an annual audit of the laboratories' quality system.

In order to rapidly detect *Cryptosporidium* oocysts NI Water has a *Cryptosporidium* Analytical Unit at its Altnagelvin Laboratory. This Unit has Drinking Water Inspectorate approval and is instrumental in the development of new accredited methods for the water industry. This unit has also been awarded United Kingdom Accreditation Service (UKAS) accreditation.

NI Water laboratories provide an accredited analytical service to external customers for both drinking water quality testing and wastewater quality testing.

Use of Technology

To assist in its ability to audit its sampling programme, NI Water has put in place a Personal Digital Assistant (PDA) based system to produce an enhanced audit trail and to eliminate data transcription errors.

The system uses ruggedised PDAs which incorporate mobile phone technology for communication. A built in barcode scanner is used to scan the labels on the sample bottles and GPS (Global Positioning System) is used to give an accurate location fix and time for each sample as it is collected. As the sampler returns to the laboratory, this data is downloaded with all the ancillary audit data onto NI Water's Laboratory Information Management System (LIMS) where it updates the existing sample information.

Within the laboratory environment the majority of analytical results are transferred directly into LIMS via direct data capture from the laboratory instrumentation. This information transference minimises the possibility of transcription errors and gives an enhanced audit trail.

Water Quality Summary

NI Water Sites in Service

During 2011, the numbers of NI Water sites in service were:

Location Type	Number in Service
Water Treatment Works	29
Service Reservoirs	326
Water Supply Zones	53
Authorised Supply Points (see glossary)	28

Overall Water Quality

215,203 microbiological, physical and chemical tests were carried out for mandatory and indicator parameters on water samples taken from water treatment works, service reservoirs and customers' taps in the year 2011. 215,026 of these tests complied with the regulatory standards giving an overall percentage compliance of 99.92%. Under the Regulations a subset of these parameters is used to assess Mean Zonal Compliance at customer tap (as set out in Appendix 3).

Microbiological Quality

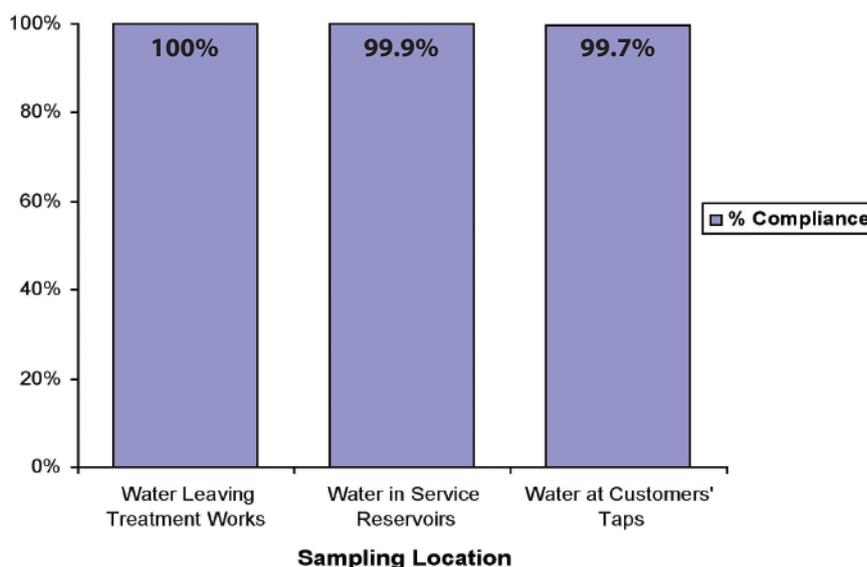
Water leaving water treatment works is disinfected with chlorine to safeguard public health by destroying microorganisms. This is the most important part of the water treatment process. To ensure the effectiveness of the treatment and chlorination process, the wholesomeness of treated water is regularly examined to ensure the absence of total coliforms and faecal coliforms (*E. coli*) at water treatment works, service reservoirs and in the distribution system at customers' taps. The presence of these organisms may indicate potential microbiological contamination of water supplies, and if they are detected in drinking water, immediate action is taken to identify the source and to minimise any risk to public health.

Many instances of microbiological failure in samples taken from customers' taps are due to contamination of the tap itself, in particular with mixer type kitchen taps. For this reason if a positive result is obtained, investigations are immediately carried out to identify if the positive result is due to the specific tap or the general system.

If the contamination is found to be due to the tap or internal plumbing NI Water will inform the customer in writing of the reason for the failure so that they can take appropriate action. A copy of the letter is also provided to the Public Health Agency, the local Environmental Health Officer and the DWI.

A summary of the microbiological quality of water supplied in 2011 is given below.

Overall Microbiological Water Quality
% Tests Meeting Regulatory Standards



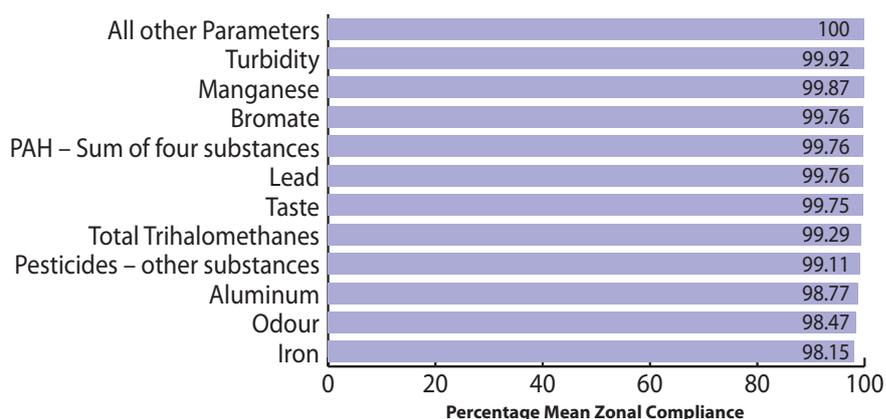
Physical and Chemical Quality at Customer tap

Physical and chemical quality standards apply to water supplied at customers' taps. The Regulations lay down the required sampling frequency for each parameter or group of parameters dependent on the resident population of the water supply zones.

32,636 mandatory physical and chemical tests were carried on water samples taken at customers' taps or authorised supply points in the year 2011. 32,545 of these tests complied with the regulatory standards giving a compliance of 99.72% for physical and chemical tests.

Appendix 3 shows the extent of NI Water's compliance with the regulatory standards at both customer tap and authorised supply point. For most parameters, compliance is judged on the basis of the results of individual samples. If a single sample exceeds the PCV, that supply is deemed not to comply with the regulatory standards, even if the cause is outside NI Water's control, e.g. defective plumbing within premises. Improved compliance will be achieved through the water treatment works investment programme and thereafter through improvements to the distribution system. Appendix 3 also shows the Mean Zonal Compliance achieved by NI Water for 2011.

Mean Zonal Compliance by Chemical Parameter



Overall Water Quality

Overall Water Quality					
	Number of Analytical Tests	Number of Tests Exceeding PCV	% Compliance with Regulatory Standards	Number of Tests Exceeding PCV or Authorised Departures	% Compliance with Regulatory Standards including Authorised Departures
Water Leaving Treatment Works					
Bacteriological Analysis	13,854	0	100.00	0	100.00
Chemical Analysis	242	0	100.00	0	100.00
Indicator parameters	34,635	28	99.92	28	99.92
Total	48,731	28	99.94	28	99.94
Water in Service Reservoirs					
Bacteriological Analysis	33,724	26	99.92	26	99.92
Indicator parameters	67,448	0	100.00	0	100.00
Total	101,172	26	99.97	26	99.97
Water at Customers' Taps or Authorised Supply Points					
Bacteriological Anal inc Coliforms	9,936	30	99.70	30	99.70
Zone Chemical Analysis	20,686	89	99.57	89	99.57
Supply Point Chemical Analysis	11,950	2	99.98	2	99.98
Indicator parameters	22,728	2	99.99	2	99.99
Total	65,300	123	99.81	123	99.81
Total Mandatory Parameters	90,392	147	99.84	147	99.84
Total Indicator Parameters	124,811	30	99.98	30	99.98
Overall Water Quality Total	215,203	177	99.92	177	99.92

Explanatory notes of exceedances of the microbiological and chemical quality standards with less than 100% compliance are provided in the following section.

Water Quality Issues

Aluminium

The standard set for aluminium is based on aesthetic considerations. A number of water supplies may contain concentrations of aluminium which could exceed the standard from time to time because of changes in raw water quality or treatment process fluctuations. These treatment processes are regularly reviewed and upgraded where required to lower the aluminium levels to below regulatory levels.

Iron

The iron standard has been set for aesthetic reasons as levels persistently above the standard can give rise to discoloured water and particulate matter. Where the standard for iron has not been met, this may be due to problems of corrosion of iron water mains. There is an ongoing proactive programme of flushing and cleaning of the distribution system to minimise the problem. In addition, NI Water has an ongoing Water Mains Rehabilitation Programme in which supply zones that experience water quality and other supply problems are subjected to a detailed zonal study. These detailed zonal studies include the analysis of historic water quality data (including iron) and customer complaint information and the implementation of targeted water quality sampling and analysis programmes to determine the nature and extent of the water quality problems. Appropriate solutions to the problems are then developed which include mains cleaning and renovation and replacement of parts of the distribution system. Implementation of the solutions is undertaken either by NI Water or its contractors.

Lead

Water leaving treatment works and in the distribution systems contains only trace amounts of lead. However, where lead has been used for service pipes between the watermain and the kitchen tap or in domestic plumbing, there may be a risk of concentrations at the customers' tap exceeding the lead standard.

Many older properties still have service pipes and internal plumbing wholly or partly comprised of lead. If a sample is found to exceed the limit for lead in drinking water, the customer, the Public Health Agency, the local Environmental Health Officer and DWI are notified. Where it is found that the exceedance is attributable to a lead service pipe NI Water will replace free of charge, any of its lead pipes supplying the property. It will be the responsibility of the property owner to replace any lead pipework on the property.

NI Water will also replace free of charge, any of its lead pipes supplying a property, if it receives a written request from a customer who has replaced the portion of lead service pipe for which the householder is responsible.

Where water mains are being rehabilitated, NI Water replaces any lead communication pipes encountered to the boundary of the property.

All major supplies in Northern Ireland are now being treated with a small amount of orthophosphoric acid, which forms a protective coating over lead pipes, to minimise levels of lead in the water supply. This dosing is reviewed annually for each water treatment works and agreed with the DWI.

A leaflet on lead in drinking water is available from the NI Water website at www.niwater.com/informationleaflets.asp

Manganese

Manganese occurs naturally in many water sources. Concentrations can vary seasonally or be attributed to the disturbance of accumulated deposits at the bottom of reservoirs when the water is drawn down or when water circulation occurs. The standard for manganese has been set for aesthetic reasons to prevent unpleasant tastes, staining or discoloured water.

Pesticides

Pesticides include insecticides, herbicides, fungicides and algaecides. These can find their way into watercourses from a variety of sources, mainly from use in agriculture or weed control. NI Water has an ongoing pesticide monitoring programme and currently analyses samples for 47 individual pesticides. NI Water liaises with other regulatory bodies in Northern Ireland such as the Northern Ireland Environment Agency (NIEA) regarding the control of pesticide usage.

The pesticide exceedances were for one of the more commonly used pesticides – MCPA.

NI Water is engaged on an ongoing series of catchment management plans as part of its overall Drinking Water Safety Plans which include looking at pesticide usage and control.

Total Trihalomethanes (THMs)

THMs are chlorination by-products arising from the reaction of chlorine, used for disinfection, with natural organic material present in water. The maintenance of microbiological quality by disinfection using chlorine is NI Water's main priority. NI Water's water abstractions are predominantly drawn from surface sources, which can contain these natural organic materials.

NI Water's ongoing water treatment works investment programme is designed to provide improved treatment to reduce organic matter prior to chlorination and thereby reduce THM levels. Further improved compliance over all of Northern Ireland is expected as improvements to water treatment works and the distribution system continue.

In addition to its ongoing programmes of work, NI Water is constantly reviewing its operational procedures to reduce THM levels in the distribution system, whilst maintaining microbiological quality.

Turbidity

Particulate matter, usually the re-suspension of sediments present in the distribution system, affects the turbidity of drinking water. Systematic flushing of the local pipe work usually restores water quality.

Taste and Odour

Under direction from DWI, NI Water has changed the methodology used for testing for taste and odour. This has led to a number of low level exceedances during 2010 and 2011 that would not have previously been recorded.

During 2009 NI Water had 1 taste exceedance and 1 odour exceedance. Under the new analytical methodology used in 2011, this rose considerably to 6 taste exceedances and 24 odour exceedances. However, this was not due to a lowering in the quality of water supplied, but due to the change in the measurement methodology.

Summary

All exceedances of the regulatory standard are investigated following procedures agreed with the Health Authorities and the Drinking Water Inspectorate. Closure of an event cannot take place without their approval.

Further information

Various information leaflets giving more details of water information may be found at www.niwater.com/informationleaflets.asp

Investing for the Future

Asset Management

In 2009 the DRD Minister provided draft Social and Environmental Guidance which outlined the priorities for investment for NI Water for the period 2010 to 2013. The guidance sets a Mean Zonal Compliance target of 99.7% for water quality during this period. NI Water has developed a business plan (PC10) to deliver this investment. This is largely a continuation of the investment plans made during the period 2007 to 2010. The water quality section of the plan includes laying 900km of new or renewed watermains and the upgrading of water treatment works, service reservoirs and pumping stations.

These investments will seek to maintain and locally improve our water quality compliance as well as improving levels of service to customers, for example, for customers suffering low water pressure. In addition to the investment targeted at quality and enhancement improvements, capital investment is also targeted at maintaining the serviceability of our assets, now and in the future.

NI Water operates a formal asset management system to ensure that investment is properly targeted and prioritised.

NI Water supplies potable water to all of Northern Ireland. A breakdown of water quality by local council area detailing capital investment during the reporting period is given at Appendix 4.

Research, Development and Innovation

NI Water, through its Research, Development and Innovation (RDI) section, undertakes a programme of applying research and technology development. NI Water's RDI investment is targeted to meet business needs by facilitating the transfer of technology and systems developed by others. It is predominantly focussed on incremental innovation, and optimisation i.e. producing more out of existing assets, Innovation, where appropriate, is employed to support the development of standards and best practice, across all of NI Water's activities.

This programme is driven by the desire to improve quality, whilst making efficiency gains. It contains projects designed to improve drinking water quality and compliance of our consented discharges while protecting the environment and providing an improved service to our customers.

NI Water, together with other UK Water Companies, employs research bodies such as the United Kingdom Water Industry Research Ltd (UKWIR) and the Water Research Centre (WRC) to provide a collaborative programme of research. This is tailored to suit the needs of the UK water industry and where required, specifically to suit the needs of NI Water. The research programme covers a wide range of business areas including; Best Practice, Climate Change, Regulation and Sustainability.

The RDI section also manages projects which require industry specialists to provide expertise to bridge knowledge gaps and solve problems specific to NI Water.

Through the RDI section NI Water collaborates with, and supports local and UK university research. NI Water is a member of Queens University Environmental Science and Technology Research Centre (QUESTOR) which is an international environmental research organisation based at Queens University Belfast.

NI Water has benefited from a substantial grant as a result of this collaboration and has received a fully financed post doctorate researcher for two years employed on the development of our carbon management strategy.

Water Supply (Water Fittings) Regulations (NI) 2009

Water Regulation Background

NI Water was granted an operating license to provide water and sewerage services in Northern Ireland on 1st April 2007 replacing the former Water Service which was an executive agency within DRD. This change in the delivery of water and sewerage services in Northern Ireland was as a result of new legislation – The Water and Sewerage Services (Northern Ireland) Order 2006.

The Water Regulations were made by the Department for Regional Development (DRD) under Articles 114 and 300(2) of The Water and Sewerage Services (NI) Order 2006 and came into operation on 3rd August 2009.

NI Water has an obligation to ensure the Regulations are being complied with and to publish a report on activities associated with customer compliance no later than the 30th June every year.

The Water Regulations are primarily designed to prevent the misuse, waste, undue consumption or erroneous measurement of water and most importantly to prevent contamination of drinking water.

Owners and occupiers of premises and anyone who installs plumbing systems or water fittings have the legal duty to ensure that the systems satisfy the regulations. Advanced notice must be given of proposed installations in most cases, so architects, building developers and plumbers have to follow the regulations on behalf of future owners or occupiers.

For the purpose of this return:

- DRD Water Policy Division (WPD) is deemed to be the Regulator for all activities associated with these Water Regulations: NI Water and WPD meet quarterly to discuss water regulations issues, enforcement activities and contraventions.
- The Water Regulation Advisory Scheme (WRAS) list of SIC codes with related fluid categories shall be used to define categories of non-domestic properties.

NI Water's implementation of these regulations is detailed at Appendix 6 herein.

Public Information

Drinking Water Register

A Drinking Water Register is produced on request showing detailed water quality results for each water supply zone.

The Register may be requested, free of charge, during normal working office hours through the customer relations centre below.

Customers may request and obtain a free copy of the information for the water supply zone they live in. A charge may be made for printed information on other zones.

Customers, who wish to receive information about the quality of water in their water supply zone by post, can write to the address listed below:

**Customer Relations Centre
4th Floor
Capital House
3 Upper Queen St
Belfast BT1 6PU**

Customers can alternatively contact the Customer Relations Centre on:
08457 440088

Customers who have hearing difficulties can also contact us via type talk on:
08457 440088

Calls to these numbers are charged at the local rate.

Customers may also contact Customer Services by email on:
waterline@niwater.com

Further information for customers may be obtained at the following website:

www.niwater.com

This site also contains electronic versions of recent Water Quality reports.

Customer Services

Staff in the Customer Relations Centre record details and the nature of all enquiries, requests for services, emergencies and complaints. All contacts are logged and routed directly to staff that will investigate the matter and resolve the problem as quickly as possible.

Customer Services produces a range of leaflets about services provided, including those designed to give customers the opportunity to learn more about water quality standards, water efficiency and the need to use water wisely. The leaflets can be obtained from the Customer Relations Centre or may be viewed on the above Website at **www.niwater.com/informationleaflets.asp**

Appendix 1

Drinking Water Quality Standards

Water Supply (Water Quality) Regulations (Northern Ireland) 2010

SCHEDULE 1 PRESCRIBED CONCENTRATIONS AND VALUES

**TABLE A.
MICROBIOLOGICAL PARAMETERS**

Part I: Directive requirements

Parameters	Concentration or Value (maximum)	Units of Measurement	Point of compliance
Enterococci	0	number/100ml	Customers' taps
Escherichia coli (E. coli)	0	number/100ml	Customers' taps
Coliform bacteria	0	number/100ml	Customers' taps (i)

**TABLE B.
CHEMICAL PARAMETERS**

Part I: Directive requirements

Parameters	Concentration or Value (maximum)	Units of Measurement	Point of compliance
Acrylamide	0.10	µg/l	(ii)
Antimony	5	µg Sb/l	Customers' taps
Arsenic	10	µg As/l	Customers' taps
Benzene	1	µg/l	Customers' taps
Benzo (a) pyrene	0.01	µg/l	Customers' taps
Boron	1	mg B/l	Customers' taps
Bromate	10	µg BrO ₃ /l	Customers' taps
Cadmium	5	µg Cd/l	Customers' taps
Chromium	50	µg Cr/l	Customers' taps
Copper	2	mg Cu/l	Customers' taps
Cyanide	50	µg CN/l	Customers' taps
1,2 Dichloroethane	3	µg/l	Customers' taps*
Fluoride	1.5	mg F/l	Customers' taps
Lead	(a) 25, from 25th December 2003 until immediately before 25th December 2013	µg Pb/l	Customers' taps
	(b) 10, on and after 25th December 2013	µg Pb/l	Customers' taps
Mercury	1	µg Hg/l	Customers' taps
Nickel	20	µg Ni/l	Customers' taps
Nitrate	50	mg NO ₃ /l	Customers' taps

Parameters	Concentration or Value (maximum)	Units of Measurement	Point of compliance
Nitrite	0.5	mg NO ₂ /l	Customers' taps
Aldrin	0.03	µg/l	Customers' taps*
Dieldrin	0.03	µg/l	Customers' taps*
Heptachlor	0.03	µg/l	Customers' taps*
Heptachlor epoxide	0.03	µg/l	Customers' taps*
Other pesticides	0.1	µg/l	Customers' taps*
Total Pesticides (iii)	0.5	µg/l	Customers' taps*
PAH - Sum of four substances (iv)	0.1	µg/l	Customers' taps
Selenium	10	µg Se/l	Customers' taps
Tetrachloroethene/ Trichloroethene – Sum (v)	10	µg/l	Customers' taps*
Total Trihalomethanes (vi)	100	µg/l	Customers' taps
Vinyl chloride	0.50	µg/l	(ii)

Notes:

(i) NI Water, with the agreement of the Drinking Water Inspectorate, includes Total Coliforms within the Part I: Directive Requirements table for statistical purposes.

(ii) The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. This is controlled by product specification.

(iii) Total Pesticides: means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring procedure.

(iv) The specified compounds are:

- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(ghi)perylene
- Indeno (1,2,3-cd) pyrene.

(v) The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

(vi) The specified compounds are:

- chloroform
- bromoform
- dibromochloromethane
- bromodichloromethane

* May be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.

Part II: National requirements

Parameters	Concentration or Value (maximum unless otherwise stated)	Units of Measurement	Point of compliance
Aluminium	200	µg Al/l	Customers' taps
Colour	20	mg/l Pt/Co	Customers' taps
Iron	200	µg Fe/l	Customers' taps
Manganese	50	µg Mn/l	Customers' taps
Odour	Acceptable to consumers and no abnormal change	Dilution number	Customers' taps
Sodium	200	mg Na/l	Customers' taps
Taste	Acceptable to consumers and no abnormal change	Dilution number	Customers' taps
Tetrachloromethane	3	µg/l	Customers' taps
Turbidity	4	NTU	Customers' taps

SCHEDULE 2 INDICATOR PARAMETERS

Parameters	Specification Concentration or Value (maximum) or State	Units of Measurement	Point of monitoring
Ammonium	0.5	mg NH ₄ /l	Customers' taps
Chloride (i)	250	mg Cl/l	Supply point*
Clostridium perfringens (including spores)	0	Number/100ml	Supply point*
Colony counts	No abnormal change	Number/1 ml at 22°C Number/1 ml at 37°C	Customers' taps, service reservoirs and treatment works
Conductivity (i)	2500	µS/cm at 20°C	Supply point*
Hydrogen ion	9.5	pH value	Customers' taps
	6.5 (minimum)	pH value	
Sulphate (i)	250	mg SO ₄ /l	Supply point*
Total indicative dose (for radioactivity) (ii)	0.1	mSv/year	Supply point*
Total organic carbon (TOC)	No abnormal change	mg C/l	Supply point*
Tritium (for radioactivity)	100	Bq/l	Supply point*
Turbidity	1	NTU	Treatment works

Notes:

- (i) The water should not be aggressive.
- (ii) Excluding tritium, potassium-40, radon and radon decay products.

* May be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.

Explanatory Notes

Measurement Units:

milli gramme per litre (mg/l) means one part in a million.
micro gramme per litre (µg/l) means one part in a thousand million.

Parameter:

A parameter refers to any substance, organism or property listed above.



Appendix 2

Programmes of Work to meet Authorised Departure Requirements

With effect from 6th August 2010, all NI Water's Authorised Departures have expired with the agreement of the Drinking Water Inspectorate that the planned programmes of work have now been completed or are nearing completion.

2011 Authorised Departures under Regulation 37

There were no Authorised Departures in place during 2011.

Appendix 3

Water Quality Report for Water Supply Zones

Schedule 1 parameters	2011 Samples	No > PCV	% > PCV	No > AD	% > AD
Enterococci	408	1	0.25%	--	--
E. coli	4764	2	0.04%	--	--
1,2 Dichloroethane	408	0	0.00%	--	--
Aluminium	1732	20	1.15%	--	--
Antimony	408	0	0.00%	--	--
Arsenic	408	0	0.00%	--	--
Benzene	408	0	0.00%	--	--
Benzo(a)pyrene	408	0	0.00%	--	--
Boron	408	0	0.00%	--	--
Bromate	408	1	0.25%	--	--
Cadmium	408	0	0.00%	--	--
Chromium	408	0	0.00%	--	--
Colour	1732	0	0.00%	--	--
Copper	408	0	0.00%	--	--
Iron	1732	30	1.73%	--	--
Lead	408	1	0.25%	--	--
Manganese	1732	2	0.12%	--	--
Mercury	408	0	0.00%	--	--
Nickel	408	0	0.00%	--	--
Nitrate	408	0	0.00%	--	--
Nitrite	408	0	0.00%	--	--
Odour	1729	24	1.39%	--	--
Selenium	408	0	0.00%	--	--
Sodium	408	0	0.00%	--	--
Taste	1729	6	0.35%	--	--
PAH - Sum of four substances	408	1	0.25%	--	--
Tetrachloroethene/ Trichloroethene - Sum	408	0	0.00%	--	--
Tetrachloromethane	408	0	0.00%	--	--
Total Trihalomethanes	408	3	0.74%	--	--
Turbidity	1732	1	0.06%	--	--

Indicator parameters	2011 Samples	No > SPEC	% > SPEC
Total coliforms	4764	27	0.57%
Total - Residual disinfectant	4764	0	0.00%
Free - Residual disinfectant	4764	0	0.00%
Colony Counts 37 (48hrs)	1732	0	0.00%
Colony Counts 22	1732	0	0.00%
Ammonium	1732	0	0.00%
Hydrogen Ion	1732	2	0.12%

Water Quality Report for Authorised Supply Points

Schedule 1 parameters	2011 Samples	No > PCV	% > PCV	No > AD	% > AD
Cyanide	238	0	0.00%	--	--
Fluoride	240	0	0.00%	--	--
Aldrin	239	0	0.00%	--	--
Dieldrin	239	0	0.00%	--	--
Heptachlor	239	0	0.00%	--	--
Heptachlor Epoxide	239	0	0.00%	--	--
Pesticides - Total Substances	239	0	0.00%	--	--
All other analysed Pesticides	10277	2	0.02%	--	--

Indicator parameters	Taken to Date	No > SPEC	% > SPEC
Clostridium perfringens (sulph red)	2753	0	0.00%
Chloride	240	0	0.00%
Conductivity	2751	0	0.00%
Sulphate	240	0	0.00%
Total Organic Carbon	240	0	0.00%
Total Indicative Dose	24	0	0.00%
Tritium	24	0	0.00%

Water Quality Report for Water Treatment Works

Schedule 1 parameters	2011 Samples	No > PCV	% > PCV
Total Coliforms	6927	0	0.00%
E. coli	6927	0	0.00%
Nitrite	242	0	0.00%

Indicator parameters	2011 Samples	No > SPEC	% > SPEC
Turbidity	6927	28	0.40%
Total - Residual disinfectant	6927	0	0.00%
Free - Residual disinfectant	6927	0	0.00%
Colony Counts 37 (48hrs)	6927	0	0.00%
Colony Counts 22	6927	0	0.00%

Water Quality Report for Service Reservoirs

Schedule 1 parameters	2011 Samples	No > PCV	% > PCV
Total Coliforms	16862	22	0.13%
E. coli	16862	4	0.02%

Indicator parameters	2011 Samples	No > SPEC	% > SPEC
Colony Counts 37 (48hrs)	16862	0	0.00%
Colony Counts 22	16862	0	0.00%
Total - Residual disinfectant	16862	0	0.00%
Free - Residual disinfectant	16862	0	0.00%

2011 Mean Zonal Compliance

Parameter	Number of Samples	No of fails at zone / supply point	No of zones / supply points with fails	% Zonal Compliance
Colour	1732	0	0	100.00
Turbidity	1732	1	1	99.92
Odour	1729	24	12	98.47
Taste	1729	6	4	99.75
Sodium	408	0	0	100.00
Nitrate	408	0	0	100.00
Nitrite	408	0	0	100.00
Nitrite/Nitrate Formula	408	0	0	100.00
Aluminium	1732	20	18	98.77
Iron	1732	30	25	98.15
Manganese	1732	2	2	99.87
Copper	408	0	0	100.00
Fluoride	240	0	0	100.00
Arsenic	408	0	0	100.00
Cadmium	408	0	0	100.00
Cyanide	238	0	0	100.00
Chromium	408	0	0	100.00
Mercury	408	0	0	100.00
Nickel	408	0	0	100.00
Lead	408	1	1	99.76
Antimony	408	0	0	100.00
Selenium	408	0	0	100.00
Total Pesticides	239	0	0	100.00
PAH - Sum of four substances	408	1	1	99.76
E. coli	4764	2	2	99.96
Enterococci	408	1	1	99.76
Boron	408	0	0	100.00
Benzo(a)pyrene	408	0	0	100.00
Tetrachloromethane	408	0	0	100.00
Tetrachloroethene/Trichloroethene - Sum	408	0	0	100.00
Total Trihalomethanes	408	3	3	99.29
1,2 Dichloroethane	408	0	0	100.00
Benzene	408	0	0	100.00
Bromate	408	1	1	99.76
Aldrin	239	0	0	100.00
Dieldrin	239	0	0	100.00
Heptachlor	239	0	0	100.00
Heptachlor epoxide	239	0	0	100.00
Pesticides - other substances (P999)*	10277	2	2	99.11
Total Number of Samples / Fails	38216	94		
Mean Zonal Compliance %				99.80

Appendix 4

Water Quality by Northern Ireland Local Council Area

This section of the Drinking Water Quality Report is designed to demonstrate water quality by individual council area based on the Mean Zonal Compliance (MZC) over the water supply zones associated with that council area, as shown on the associated maps.

For monitoring purposes NI Water's supply area is divided into water supply zones. These are areas serving not more than 100,000 people, each of which are normally supplied from a single water supply source or combination of sources. There are areas where owing to topography and dispersal of population, it is not practicable to provide a mains water supply. Currently over 99.6% of Northern Ireland's population receive public water supplies.

In a number of cases water supply zones overlap district council boundaries. The council reports indicate which water supply zones are wholly or partially contained within the council areas, including those zones which may have a relatively small area within the council area. Separation of data within these water supply zones across council boundaries is not practicable, therefore the information used in calculating the MZC relates to the whole zone and not merely the part included within a council boundary.

Following discussions with the Drinking Water Inspectorate, water supply zones with fewer than 40 properties within the council area have not been used to calculate the individual council MZC. The information is based on samples taken randomly from customers' taps in each water supply zone and from planned samples at authorised supply points. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones.

The report also details Capital Work Programmes affecting the council area which directly related to water quality during the reporting period.

Small variations in water quality compliance performance occur across Northern Ireland. This reflects the need to continue to invest in and to maintain water treatment works, and to improve the water mains network.

NI Water has identified the need to deliver a significant volume of watermains rehabilitation and other works across its ageing network. The works are necessary to ensure the efficient and cost effective operation of its water supply system in the immediate future and longer term as well as ensuring adequate levels of water quality and customer supply.

To achieve this goal, NI Water has implemented a Watermains Rehabilitation Framework, within which it has appointed two contractors to undertake work on a Northern Ireland wide basis as identified by the zonal study programme of work.

Following the removal of some small water supply sources, NI Water reassessed its water supply zones for 2011. This led to the removal of some small zones along with the merging of other zones. As the MZC calculation is based on the number of zones in a particular council area, this has changed the factors used in the calculation and may lead to a perception of a change in water quality.

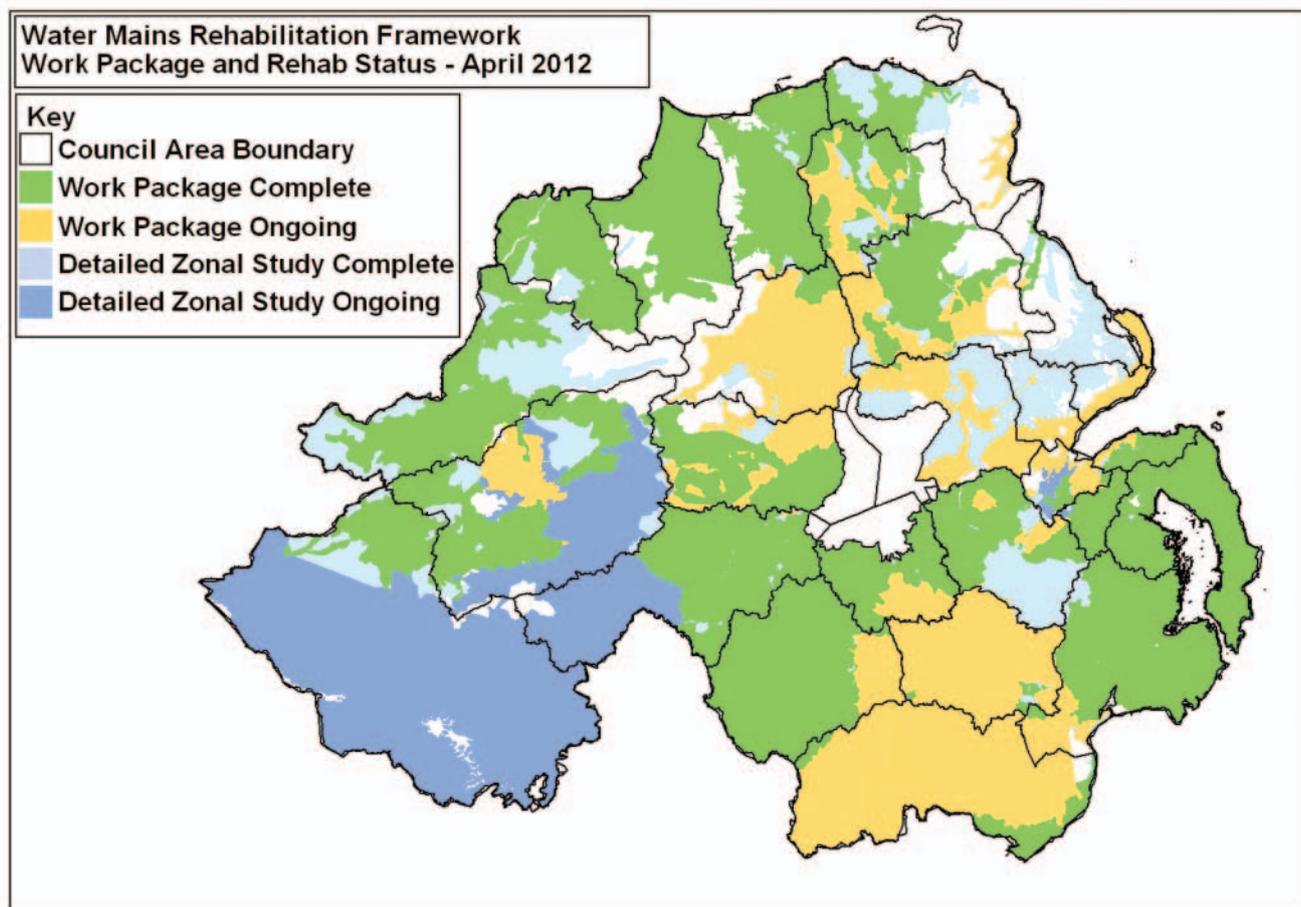
The DWI directed change in the analysis of taste and odour for 2010 and 2011 has resulted in a number of exceedances which would not previously have failed. This has led in some cases to a small reduction in MZC at council level. This is not normally due to a change in the quality of water supplied, but rather to the change in the method of measurement.

Overall, the quality of water supplied to our customers over the last period has improved rising from a Mean Zonal Compliance of 99.74% in 2009 to 99.80% in 2011 measured against our target of 99.70%.

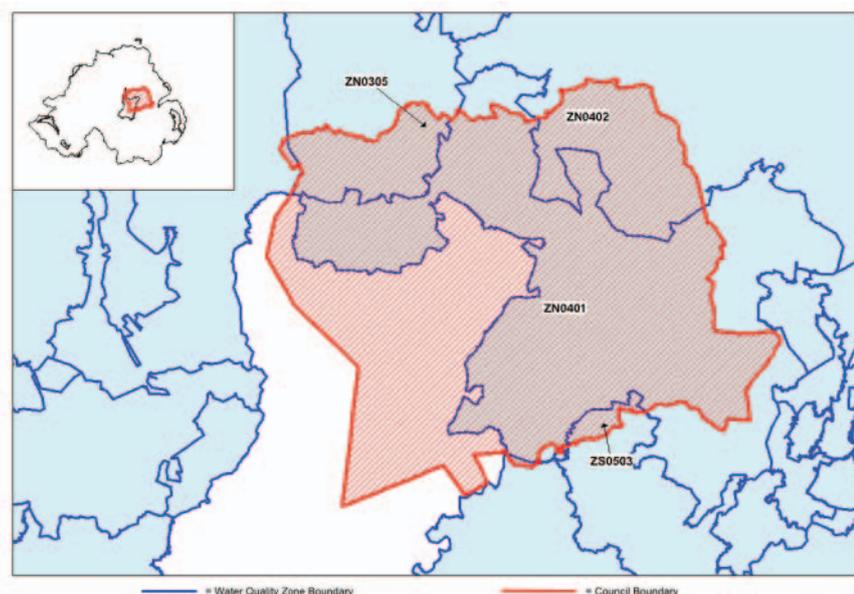
Watermains Rehabilitation Framework

Current Work Package Status

The map above shows the extent of the current Watermains Rehabilitation Framework covering most of Northern Ireland. To assist clarity, whilst the council boundaries are shown, the individual councils are not named. Regions in white on the map are largely upland areas or watercourses which do not receive public water supply.



Antrim Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Antrim Council MZC	99.7%	99.8%	99.9%

2011 water supply zones wholly or partially within the council area:

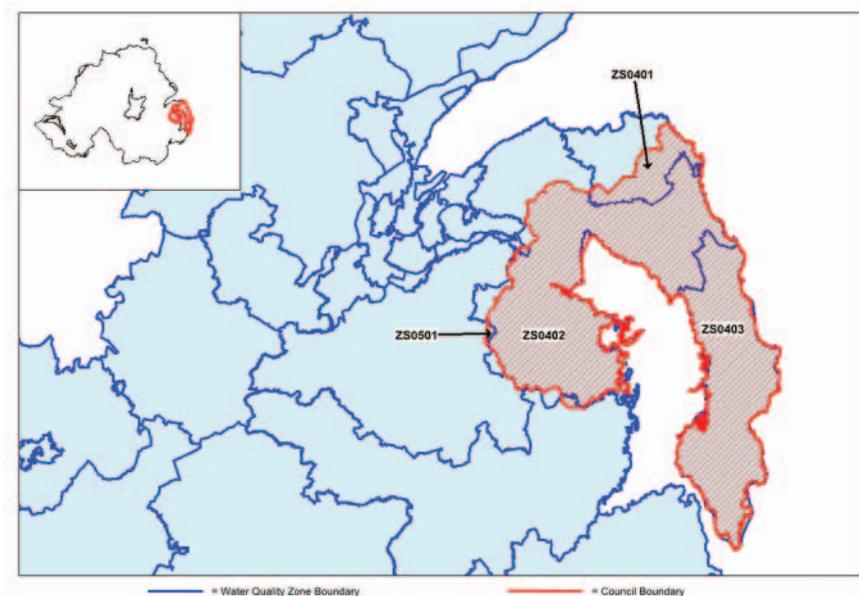
Zone Code	Zone Name	Zone Code	Zone Name
ZN0305	Dungonnell Ahoghill	ZN0402	Killylane Ballynure
ZN0401	Dunore Point Antrim	ZS0503	Forked Bridge Stoneyford

2011 water quality Capital Works Programmes affecting the council area:

Crosskennan SR, Antrim, Water Pumping Station.
 Dunore West Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Tardree Zone Watermain Improvements
 West Belfast / North Lisburn Watermain Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Antrim council area over the next few years.

Ards Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Ards Council MZC	99.9%	99.9%	99.9%

2011 water supply zones wholly or partially within the council area:

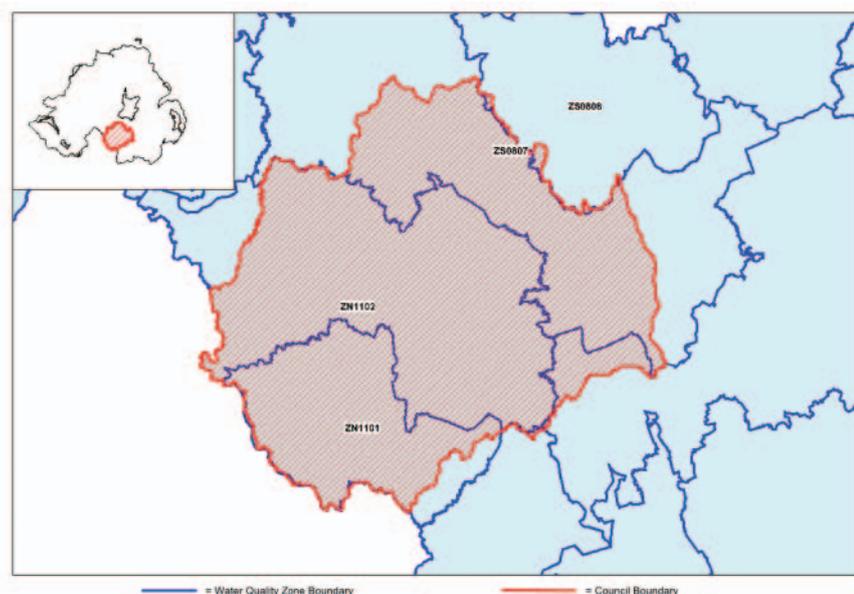
Zone Code	Zone Name	Zone Code	Zone Name
ZS0401	Drummaroad Bangor	ZS0403	Drummaroad Peninsula
ZS0402	Drummaroad Comber	ZS0501	Drummaroad Lisburn

2011 water quality Capital Works Programmes affecting the council area:

Ballynahinch Operational Schemes
 Ballyreagh Road, Newtownards, Watermain Extension
 Major Incident Mitigation Project Freeze Thaw Improvements
 North Down Strategic Trunk Watermains
 Portaferry, Ballyquinton area mains replacement

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Ards council area over the next few years.

Armagh City & District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Armagh City & Council MZC	99.4%	99.9%	99.9%

2011 water supply zones wholly or partially within the council area:

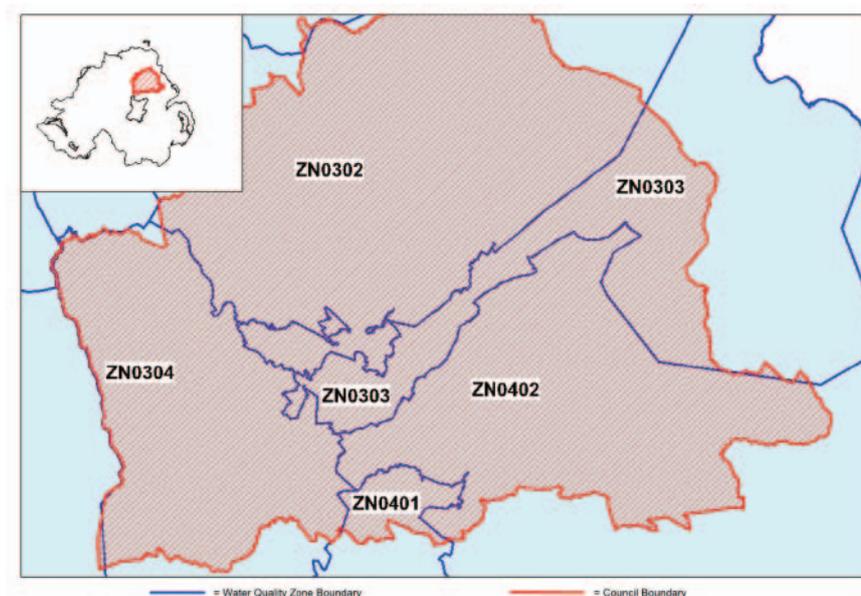
Zone Code	Zone Name	Zone Code	Zone Name
ZN1101	Clay Lake Keady	ZS0807	Castor Bay Loughgall
ZN1102	Seagahan Armagh	ZS0808	Castor Bay Craigavon

2011 water quality Capital Works Programmes affecting the council area:

- Altnahinch and Seagahan WTW's Residual Sludge Disposal
- Armagh City Zone Watermain Improvements
- Castor Bay to Dungannon Strategic Trunk Mains
- Castor Bay, Armagh Zone Watermain Improvements
- Clay Lake Zone Watermain Improvements
- Major Incident Mitigation Project Freeze Thaw Improvements
- Seagahan Zone Watermain Improvements

The upgrade of Seagahan WTW significantly improved the quality of water in the Armagh council area, in particular by the reduction of Total Trihalomethanes. The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Armagh council area over the next few years.

Ballymena Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Ballymena Council MZC	99.8%	99.7%	99.9%

2011 water supply zones wholly or partially within the council area:

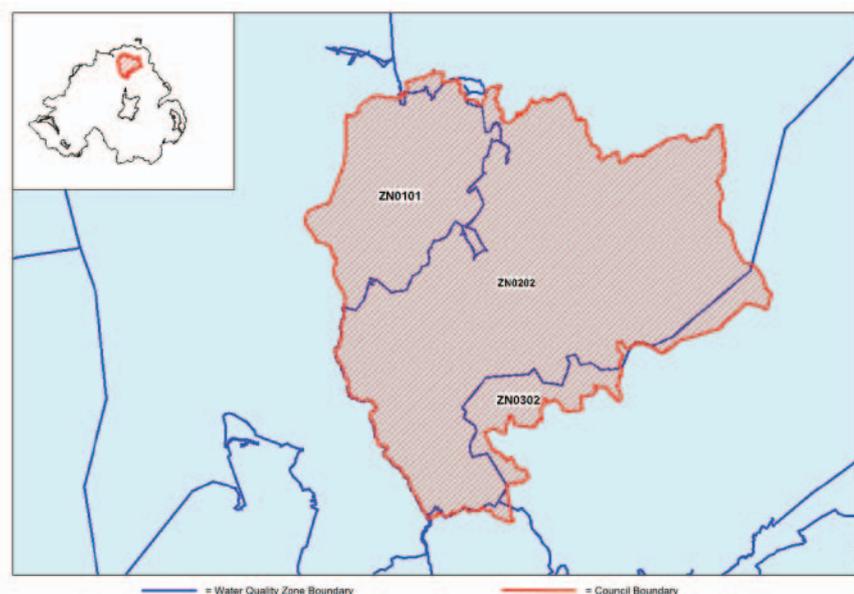
Zone Code	Zone Name	Zone Code	Zone Name
ZN0302	Dungonnell Glarryford	ZN0401	Dunore Point Antrim
ZN0303	Dunore Point Ballymena	ZN0402	Killylane Ballynure
ZN0305	Dungonnell Ahoghill		

2011 water quality Capital Works Programmes affecting the council area:

Ballymena North Zone Watermain Improvements
 Cargan Zone Watermain Improvements
 Crosskennan SR, Antrim, Water Pumping Station.
 Dungonnell Zone Watermain Improvements
 Dungonnell Zone Watermain Improvements
 Garstings Hill SR, Ballymena Water Pumping station.
 Major Incident Mitigation Project Freeze Thaw Improvements
 Tardree Zone Watermain Improvements
 Tully Service Reservoir

During 2010 a large part of Ballymena council area was supplied from Glarryford WTW. This Works was removed from service with the area now largely fed from the upgraded Dunore Point WTW. There were a number of iron exceedances in the Glarryford areas and the ongoing Watermains Rehabilitation Framework has targeted these. This will continue to maintain and improve the quality of water in the Ballymena council area over the next few years.

Ballymoney Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Ballymoney Council MZC	99.6%	99.4%	99.9%

2011 water supply zones wholly or partially within the council area:

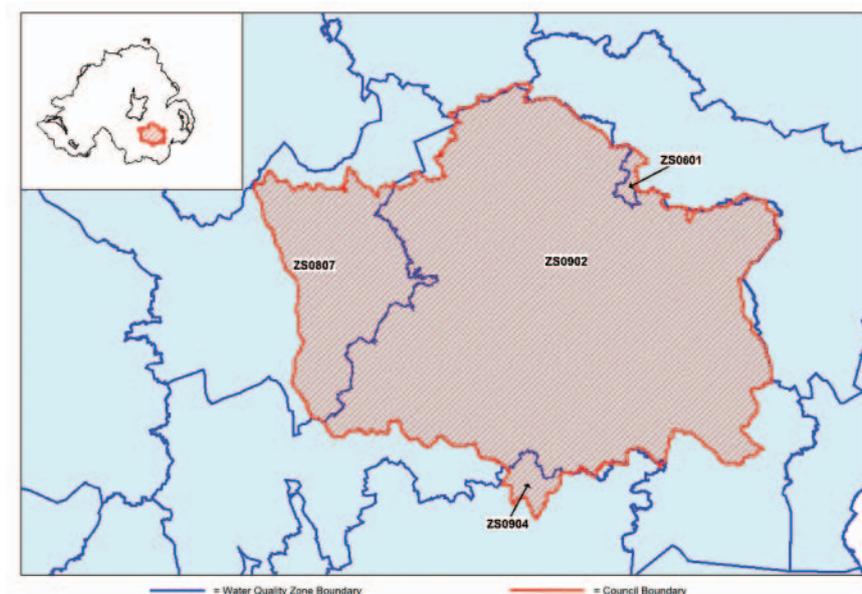
Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0302	Dungonnell Glarryford
ZN0202	Altnahinch Bushmills		

2011 water quality Capital Works Programmes affecting the council area:

Altnahinch and Seagahan WTW's Residual Sludge Disposal
 Ballynahone Zone Watermain Improvements
 Cargan Zone Watermain Improvements
 Lisboy Road, Dunloy Replacement Watermain
 Major Incident Mitigation Project Freeze Thaw Improvements

The rationalisation of water supply zones in the Ballymoney area has reduced the number of zones from 6 to 3, directly affecting the MZC calculation. This in conjunction with a number of iron exceedances in the Altnahinch and Glarryford areas led to the previous reduction in reported water quality. Glarryford WTW has now been decommissioned, with water now supplied to this area from the upgraded Dunore Point WTW. The ongoing Watermains Rehabilitation Framework has targeted these areas and this will continue to maintain and improve the quality of water in the Ballymoney council area over the next few years.

Banbridge District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Banbridge Council MZC	99.9%	99.8%	99.9%

2011 water supply zones wholly or partially within the council area:

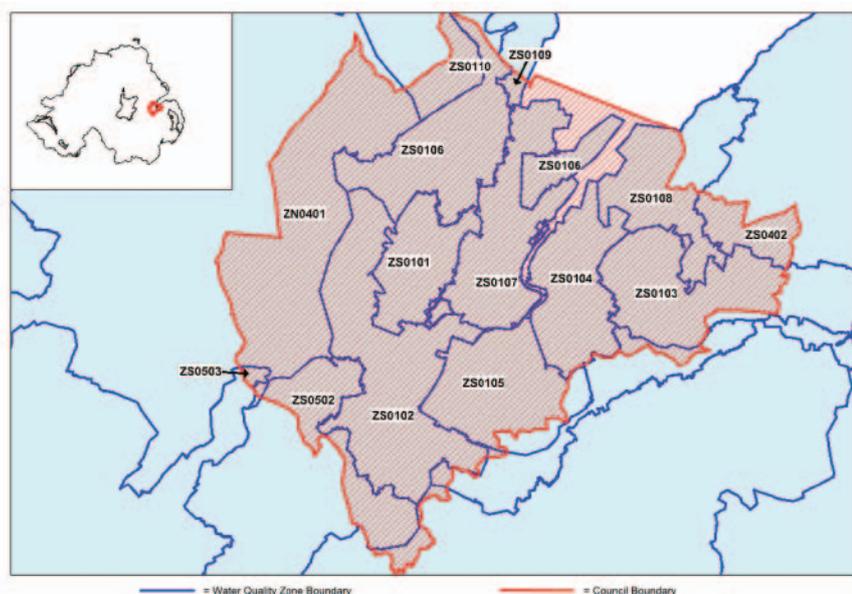
Zone Code	Zone Name	Zone Code	Zone Name
ZS0601	Drumaroad Ballynahinch	ZS0902	Fofanny Dromore
ZS0807	Castor Bay Loughgall	ZS0904	Fofanny Mourne
ZS0808	Castor Bay Craigavon		

2011 water quality Capital Works Programmes affecting the council area:

Ballydougan to Newry Main Link Reinforcement
 Dublinhill Road Dromore Watermain Extension
 Fofanny Banbridge Zone Watermain Improvements Phase 2
 Major Incident Mitigation Project Freeze Thaw Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Banbridge council area over the next few years.

Belfast City Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Belfast City Council MZC	99.8%	99.9%	99.9%

2011 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0107	Belfast Oldpark
ZS0101	Dunore Ballygomartin North	ZS0108	Belfast Purdysburn
ZS0102	Dunore Ballygomartin South	ZS0109	Dorisland Whiteabbey
ZS0103	Belfast Ballyhanwood	ZS0110	Dunore Point Glengormley
ZS0104	Dunore Breda North	ZS0402	Drumaroad Comber
ZS0105	Dunore Breda South	ZS0502	Forked Bridge Dunmurry
ZS0106	Dunore Belfast North	ZS0503	Forked Bridge Stoneyford

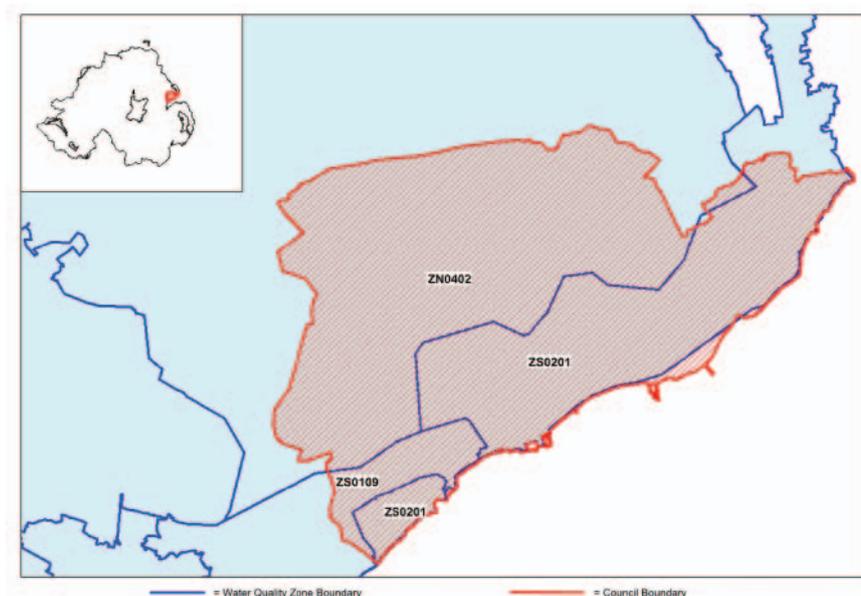
2011 water quality Capital Works Programmes affecting the council area:

Ballygomartin North Phase 1 Watermain Improvements
 Ballygomartin South Phase 1 Water Mains Improvements
 Ballysillan Zone Watermain Improvements
 Ballywonard Zone Watermain Improvements
 Belfast City Centre Zone Watermain Improvements
 Breda North Zone Watermain Improvements

Castlereagh Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Oldpark Watermain Improvements
 West Belfast / North Lisburn Watermain Improvements
 Whiterock Phase 1 Watermains Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Belfast City council area over the next few years.

Carrickfergus Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Carrickfergus Council MZC	99.5%	99.8%	99.8%

2011 water supply zones wholly or partially within the council area:

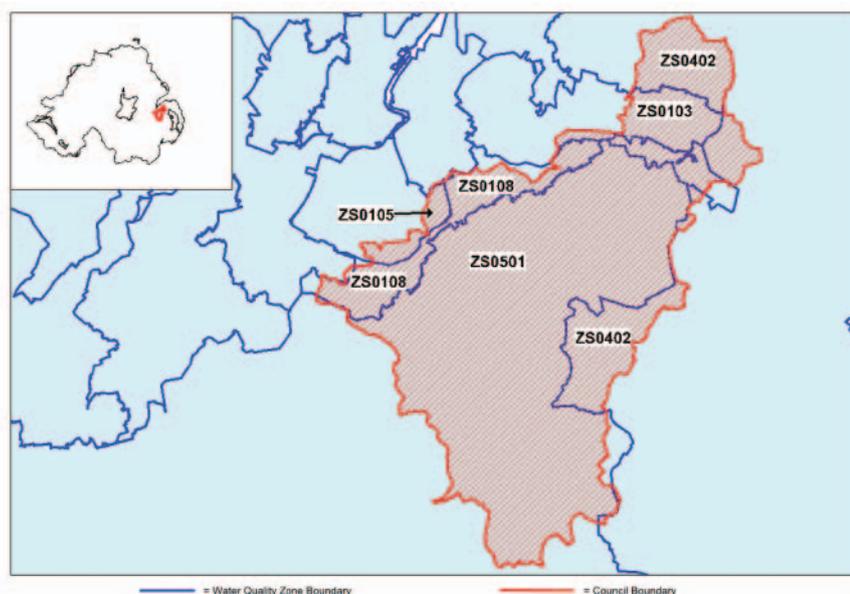
Zone Code	Zone Name	Zone Code	Zone Name
ZN0402	Killylane Ballynure	ZS0201	Dorisland Carrick
ZS0109	Dorisland Whiteabbey		

2011 water quality Capital Works Programmes affecting the council area:

Carrickfergus Zone Watermain Improvements Phase 1
 Carrickfergus Zone Watermain Improvements Phase 2
 Major Incident Mitigation Project Freeze Thaw Improvements
 Tardree Zone Watermain Improvements

Water quality in the Carrickfergus council area has improved due to a combination of ongoing optimisation and improvements at Killylane WTW, and also a targeted Watermains Rehabilitation Framework programme. This ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Carrickfergus council area over the next few years.

Castlereagh Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Castlereagh Council MZC	99.8%	99.8%	99.8%

2011 water supply zones wholly or partially within the council area:

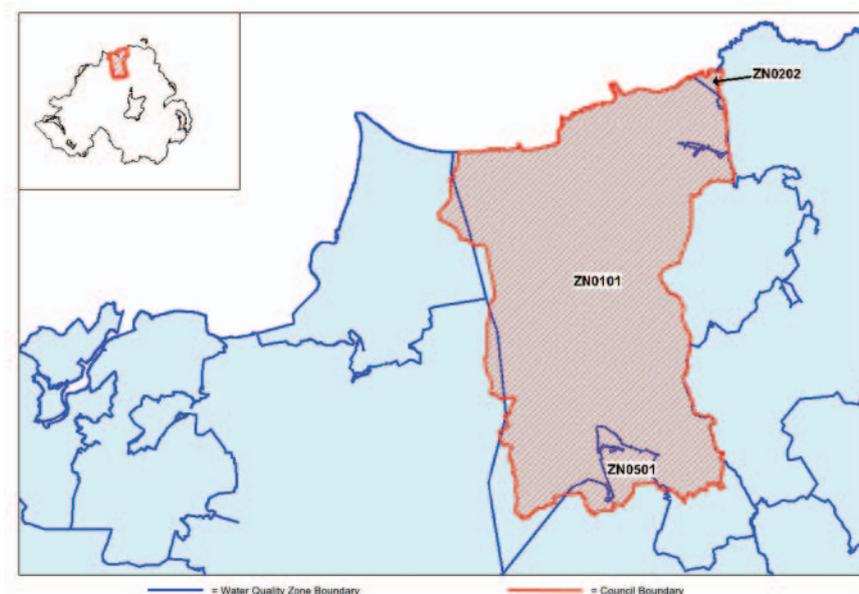
Zone Code	Zone Name	Zone Code	Zone Name
ZS0103	Belfast Ballyhanwood	ZS0108	Belfast Purdysburn
ZS0104	Dunore Breda North	ZS0402	Drumaroad Comber
ZS0105	Dunore Breda South	ZS0501	Drumaroad Lisburn

2011 water quality Capital Works Programmes affecting the council area:

Castlereagh Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 North Down Strategic Trunk Watermains

Many of the exceedances attributed to water supply zones in the Castlereagh council area are actually outside the council boundaries, however it is not possible to take this into account when calculating the MZC as the MZC calculation is for the whole water supply zone and not just the portion of the water supply zone supplying a particular council area. The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Castlereagh council area over the next few years.

Coleraine Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Coleraine Council MZC	99.6%	99.7%	99.9%

2011 water supply zones wholly or partially within the council area:

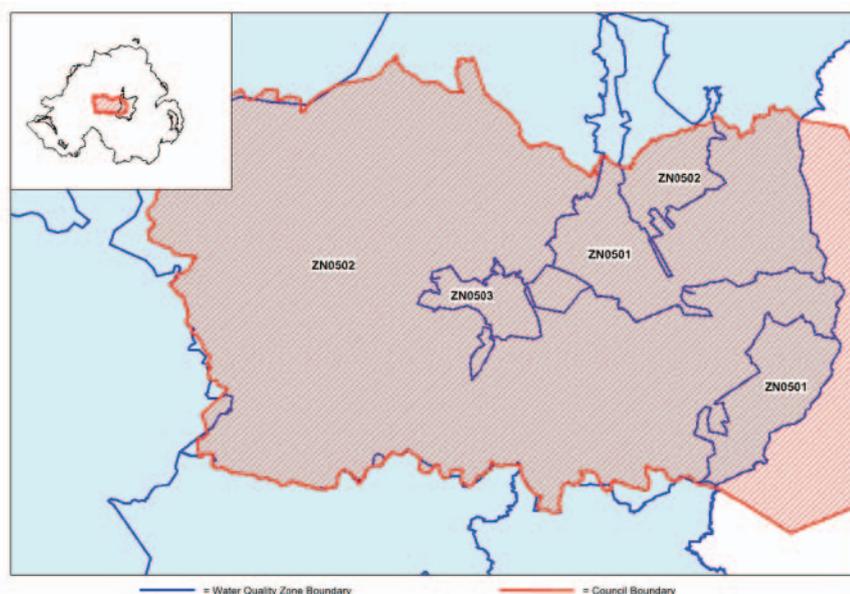
Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0501	Moyola Magherafelt
ZN0202	Altnahinch Bushmills		

2011 water quality Capital Works Programmes affecting the council area:

Major Incident Mitigation Project Freeze Thaw Improvements
Rasharkin Zone Watermain Improvements Phase 2

The ongoing Watermains Rehabilitation Framework and further treatment optimisation of Ballinrees WTW will continue to maintain and improve the quality of water in the Coleraine council area over the next few years.

Cookstown District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Cookstown Council MZC	99.8%	99.9%	99.9%

2011 water supply zones wholly or partially within the council area:

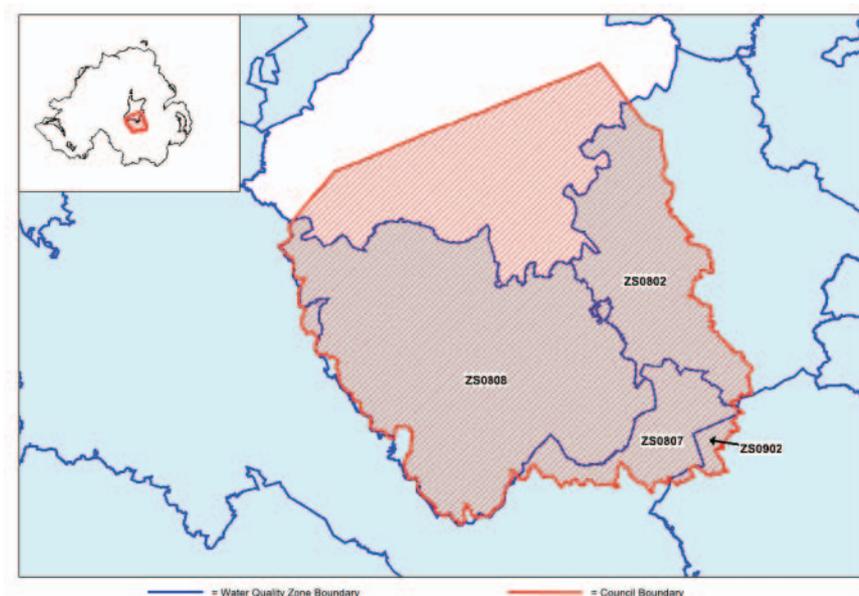
Zone Code	Zone Name	Zone Code	Zone Name
ZN0501	Moyola Magherafelt	ZN0503	Unagh Cookstown
ZN0502	Lough Fea Cookstown		

2011 water quality Capital Works Programmes affecting the council area:

Cookstown Phase 2 Watermain Improvements
 Cookstown Phase 3 Watermain Improvements
 Cookstown Zone Watermain Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Cookstown council area over the next few years.

Craigavon Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Craigavon Council MZC	99.9%	99.9%	99.8%

2011 water supply zones wholly or partially within the council area:

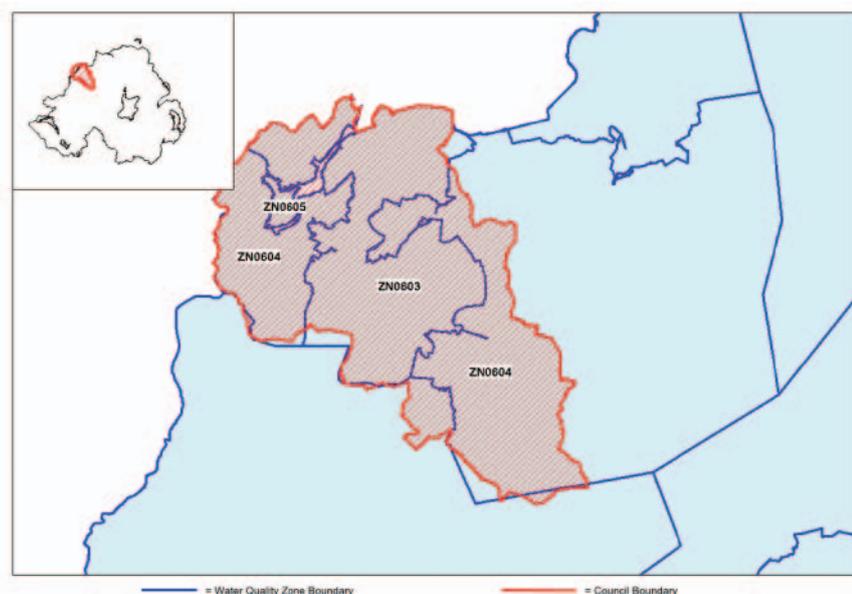
Zone Code	Zone Name	Zone Code	Zone Name
ZS0802	Castor Bay Lurgan	ZS0808	Castor Bay Craigavon
ZS0807	Castor Bay Loughgall	ZS0902	Fofanny Dromore

2011 water quality Capital Works Programmes affecting the council area:

Ballydougan to Newry Main Link Reinforcement
 Castor Bay / Magheraliskmisk Zone Watermain Improvements
 Castor Bay to Dungannon Strategic Trunk Mains
 Castor Bay/Craigavon North Watermain Rehabilitation
 Castor Bay/Moira Zone Watermain Improvements
 Lurgan & Portadown Public Realm Associated Infrastructure Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Portadown Drainage Area Network Improvements - Obins Street and Park Road
 Tardree Zone Watermain Improvements
 West of the Bann Zone Watermain Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Craigavon council area over the next few years.

Derry City Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Derry City Council MZC	99.7%	99.9%	99.6%

2011 water supply zones wholly or partially within the council area:

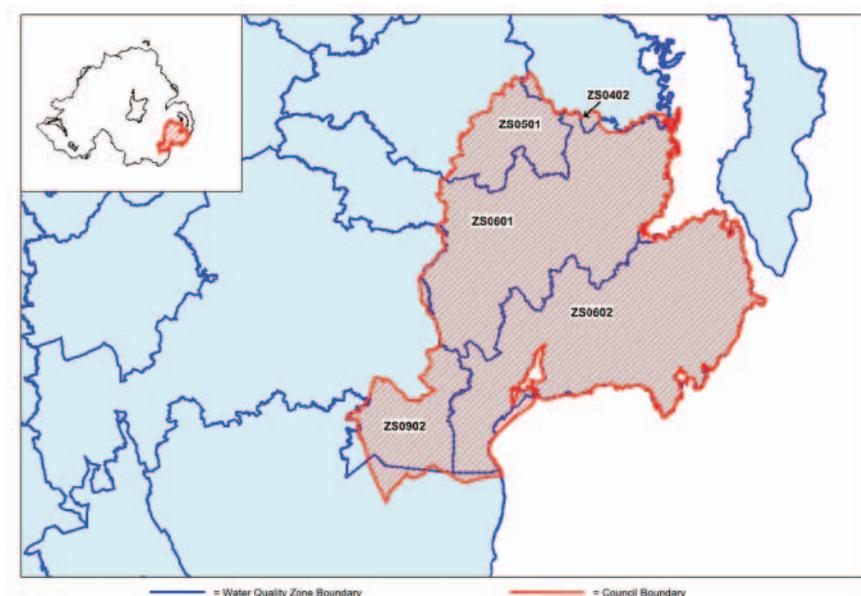
Zone Code	Zone Name	Zone Code	Zone Name
ZN0603	Carmony Eglinton	ZN0605	Creggan Derry
ZN0604	Caugh Hill Dungiven		

2011 water quality Capital Works Programmes affecting the council area:

Ballinrees to Limavady/Londonderry Supply Augmentation
 Carmony East Zone Watermain Improvements
 Carmony Water Treatment Works Upgrade
 Londonderry DAP: Duke Street Work package
 Major Incident Mitigation Project Freeze Thaw Improvements
 Waterside Zone Watermain Improvements

During 2011 upgrade work was completed at Carmony WTW. This work along with planned works at Caugh Hill WTW combined with the Watermains Rehabilitation Framework work packages will continue to maintain and improve the quality of water in the Derry council area over the next few years. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones in a council area which may temporarily reduce the calculated compliance.

Down District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Down Council MZC	99.9%	99.8%	99.7%

2011 water supply zones wholly or partially within the council area:

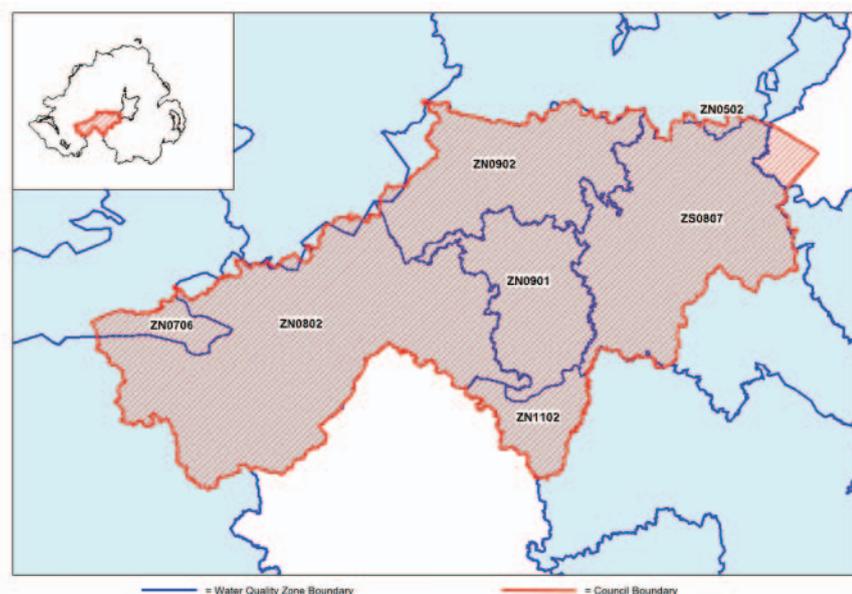
Zone Code	Zone Name	Zone Code	Zone Name
ZS0402	Drummaroad Comber	ZS0602	Drummaroad Downpatrick
ZS0501	Drummaroad Lisburn	ZS0902	Fofanny Dromore
ZS0601	Drummaroad Ballynahinch		

2011 water quality Capital Works Programmes affecting the council area:

Ballykine Gravity Distribution
 Ballynahinch Operational Schemes
 Bloody Bridge Water Pumping Station & New Link Main for Major Incident Mitigation
 Major Incident Mitigation Project Freeze Thaw Improvements
 North Down Strategic Trunk Watermains
 South Down Zone Watermain Improvements

The perceived water quality in the Down council area has reduced slightly between 2009 and 2011. Within the supply area a number of sample exceedances were due to bacteriological contamination of the customers' taps. These exceedances did not reflect the water quality in supply. The ongoing Watermains Rehabilitation Framework will overall continue to maintain and improve the quality of water in the Down council area over the next few years. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones in a council area which may temporarily reduce the calculated compliance.

Dungannon and South Tyrone Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Dungannon and South Tyrone Council MZC	99.4%	99.7%	99.9%

2011 water supply zones wholly or partially within the council area:

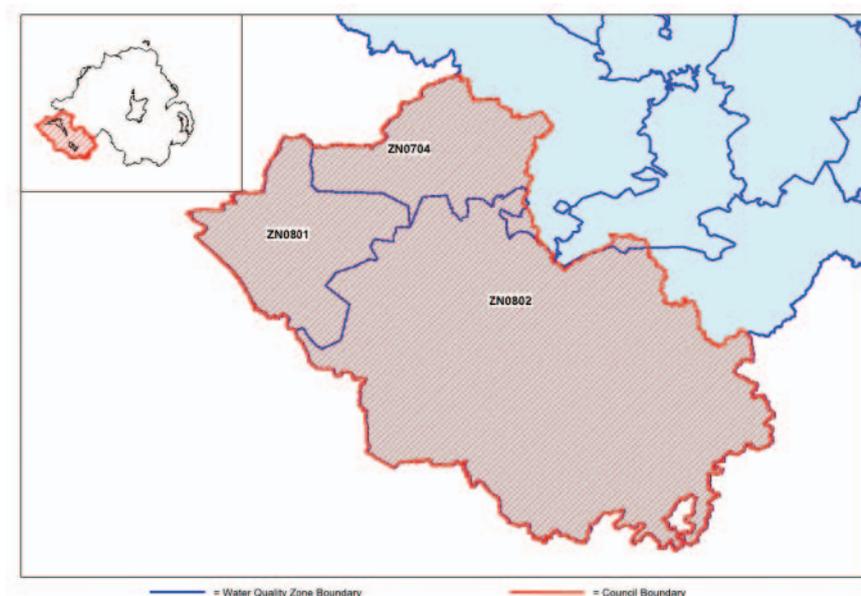
Zone Code	Zone Name	Zone Code	Zone Name
ZN0502	Lough Fea Cookstown	ZN0902	Altmore Donaghmore
ZN0706	Lough Macrory Killyclogher	ZN1102	Seagahan Armagh
ZN0802	Killyhevlin Enniskillen	ZS0807	Castor Bay Loughgall
ZN0901	Altmore Cabragh		

2010 water quality Capital Works Programmes affecting the council area:

Carland Bridge (Cookstown Rd) Road Realignment
 Carland Service Reservoir
 Castor Bay to Dungannon Strategic Trunk Mains
 Castor Bay/ Shanmoy Zone
 Glencuil to Cabragh Strategic Link Watermain
 Major Incident Mitigation Project Freeze Thaw Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements

The continuing improvement in water quality in Dungannon and South Tyrone is largely due to the effect of the ongoing Watermains Rehabilitation Framework combined with the upgrade to Seagahan WTW. In the spring of 2011 Altmore WTW and Shanmoy Borewell WTW were removed from supply. Removing these non-compliant WTW in conjunction with the ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Dungannon and South Tyrone council area over the next few years.

Fermanagh District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Fermanagh Council MZC	99.8%	99.6%	99.8%

2011 water supply zones wholly or partially within the council area:

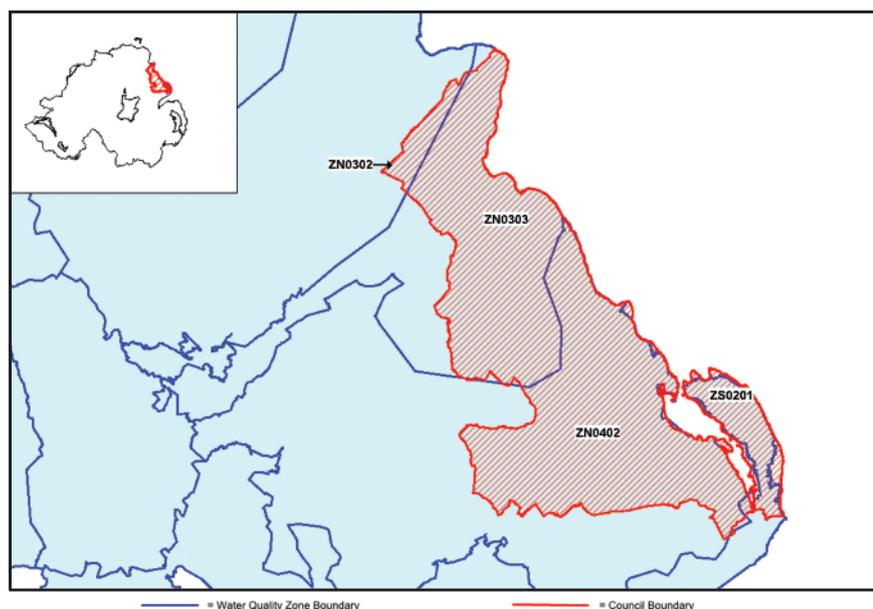
Zone Code	Zone Name	Zone Code	Zone Name
ZN0704	Lough Bradan Drumquin	ZN0802	Killyhevlin Enniskillen
ZN0801	Belleek Garrison		

2011 water quality Capital Works Programmes affecting the council area:

Alleyhill Zone Watermain Improvements
 Killyhevlin to Lough Bradan Link Watermain
 Major Incident Mitigation Project Freeze Thaw Improvements
 Rosslea Water Supply

Many of the exceedances attributed to water supply zones in the Fermanagh council area are actually outside the council boundaries, however it is impossible to take this into account when calculating the MZC as the MZC calculation is for the whole water supply zone and not just the portion of the water supply zone supplying a particular council area. The planned upgrade of Killyhevlin WTW and the upgrade work at Lough Bradan WTW, combined with the Watermains Rehabilitation Framework, will continue to maintain and improve the quality of water in the Fermanagh council area over the next few years.

Larne Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Larne Council MZC	99.6%	99.7%	99.8%

2011 water supply zones wholly or partially within the council area:

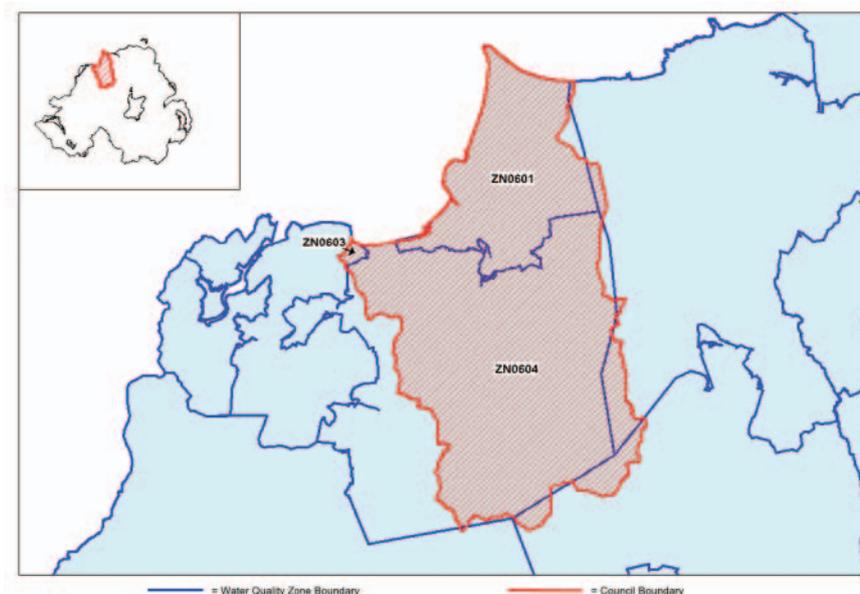
Zone Code	Zone Name	Zone Code	Zone Name
ZN0303	Dunore Point Ballymena	ZS0201	Dorisland Carrick
ZN0402	Killylane Ballynure		

2011 water quality Capital Works Programmes affecting the council area:

Antiville Road Larne Watermain Extension
Major Incident Mitigation Project Freeze Thaw Improvements

The water quality in the Larne council area has continued to improve year on year. Many of the exceedances attributed to water supply zones in the Larne council area are actually outside the council boundaries, however it is not appropriate to take this into account when calculating the MZC as the MZC calculation is for the whole water supply zone and not just the portion of the water supply zone supplying a particular council area. The continuing optimisation of processes at Killylane WTW combined with the Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Larne council area over the next few years.

Limavady Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Limavady Council MZC	99.9%	99.9%	99.7%

2011 water supply zones wholly or partially within the council area:

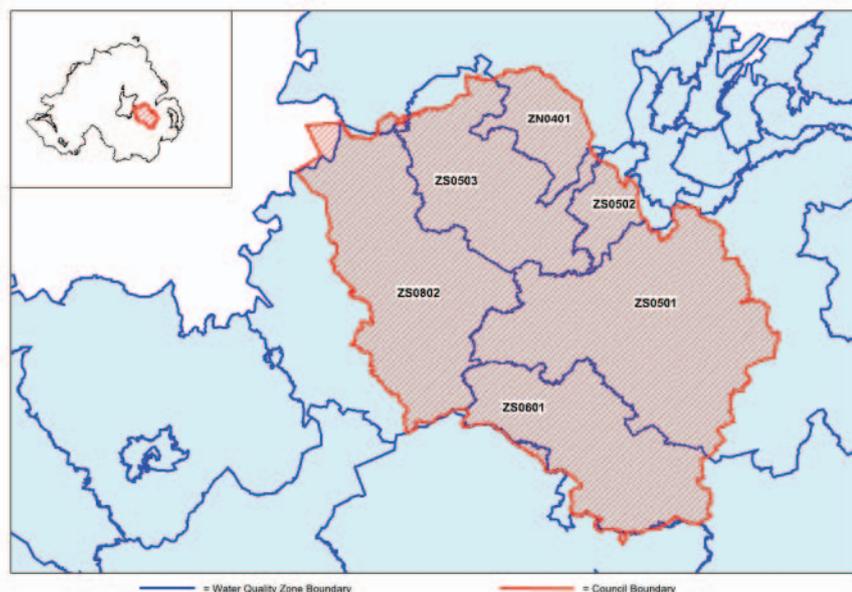
Zone Code	Zone Name	Zone Code	Zone Name
ZN0601	Ballinrees Limavady	ZN0604	Caugh Hill Dungiven
ZN0603	Carmony Eglinton		

2011 water quality Capital Works Programmes affecting the council area:

Ballinrees to Limavady/Londonderry Supply Augmentation
Major Incident Mitigation Project Freeze Thaw Improvements

Most of the exceedances attributed to water supply zones in the Limavady council area are actually outside the council boundaries, however it is impossible to take this into account when calculating the MZC as the MZC calculation is for the whole water supply zone and not just the portion of the water supply zone supplying a particular council area. The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Limavady council area over the next few years. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones in a council area which may temporarily reduce the calculated compliance.

Lisburn City Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Lisburn City Council MZC	99.9%	99.9%	99.7%

2011 water supply zones wholly or partially within the council area:

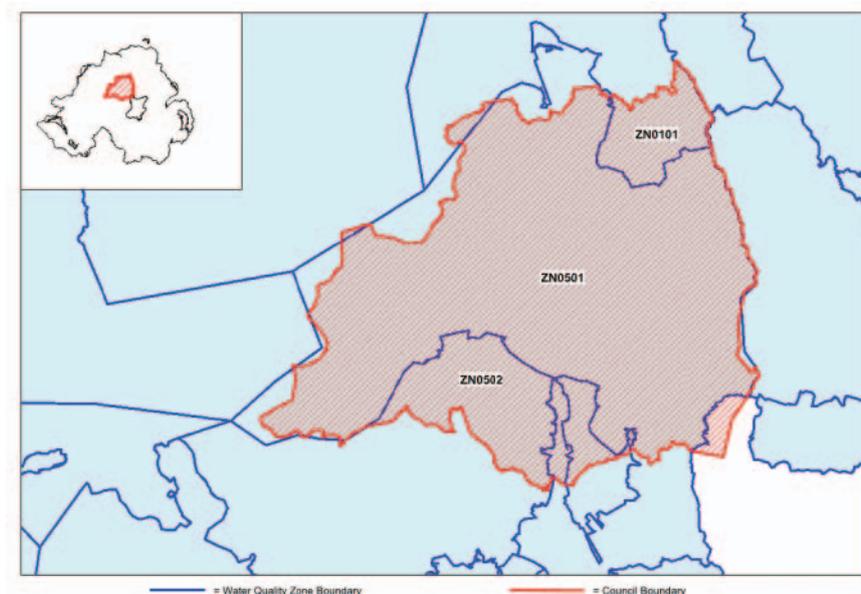
Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0503	Forked Bridge Stoneyford
ZS0501	Drumaroad Lisburn	ZS0601	Drumaroad Ballynahinch
ZS0502	Forked Bridge Dunmurry	ZS0802	Castor Bay Lurgan

2011 water quality Capital Works Programmes affecting the council area:

Castor Bay / Magheraliskmisk Zone Watermain Improvements
 Castor Bay/Moira Zone Watermain Improvements
 Lisburn North Rural Phase 2 Watermain Improvements
 Lisburn North Rural Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Strategic Link - Castor Bay to Belfast
 West Belfast / North Lisburn Watermain Improvements

Many of the exceedances attributed to water supply zones in the Lisburn council area are actually outside the council boundaries, however it is impossible to take this into account when calculating the MZC as the MZC calculation is for the whole water supply zone and not just the portion of the water supply zone supplying a particular council area. The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Lisburn council area over the next few years. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones in a council area which may temporarily reduce the calculated compliance.

Magherafelt District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Magherafelt Council MZC	99.8%	99.9%	99.8%

2011 water supply zones wholly or partially within the council area:

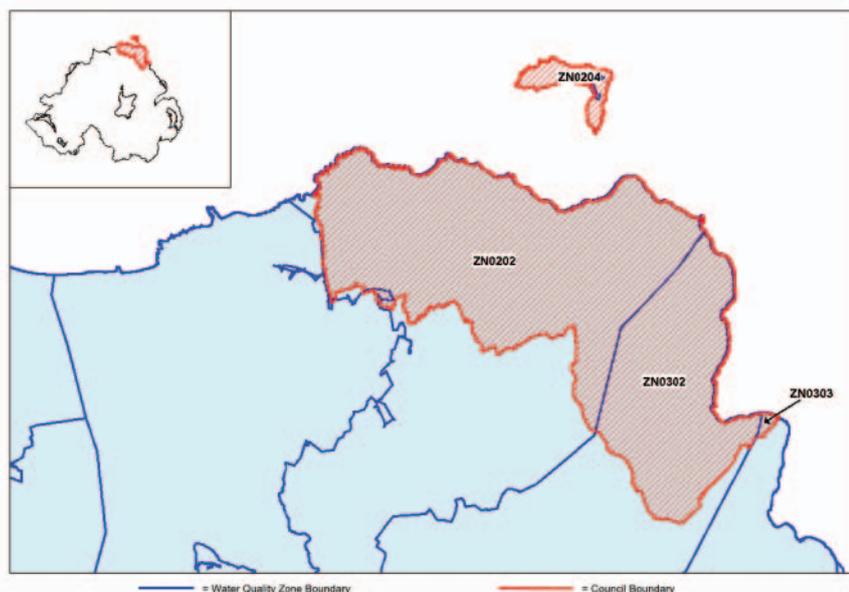
Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0502	Lough Fea Cookstown
ZN0501	Moyola Magherafelt		

2011 water quality Capital Works Programmes affecting the council area:

Magherafelt High School Water main Extension
 Major Incident Mitigation Project Freeze Thaw Improvements
 Moyola Zone Watermain Improvements

The compliance for Magherafelt council area has been improved by the removal of Glarryford WTW from supply. This combined with the improved quality of water supplied from Moyola WTW along with the ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Magherafelt council area over the next few years.

Moyle District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Moyle Council MZC	99.7%	99.6%	99.9%

2011 water supply zones wholly or partially within the council area:

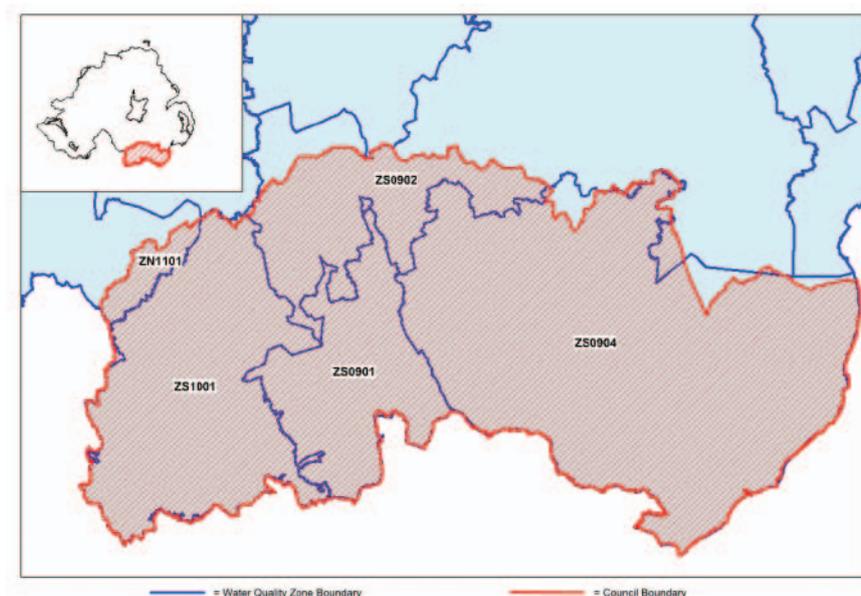
Zone Code	Zone Name	Zone Code	Zone Name
ZN0202	Altnahinch Bushmills	ZN0302	Dungonnell Glarryford
ZN0204	Rathlin Island		

2011 water quality Capital Works Programmes affecting the council area:

- Ballycastle Zone Watermain Improvements
- Ballynahone Zone Watermain Improvements
- Major Incident Mitigation Project Freeze Thaw Improvements
- Monaclogh SR Capacity Extension
- The Glens Zone Watermain Improvements

The continuing optimisation of processes at Dungonnell WTW combined with the ongoing targeted Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Moyle council area over the next few years.

Newry & Mourne District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Newry & Mourne Council MZC	99.8%	99.8%	99.9%

2011 water supply zones wholly or partially within the council area:

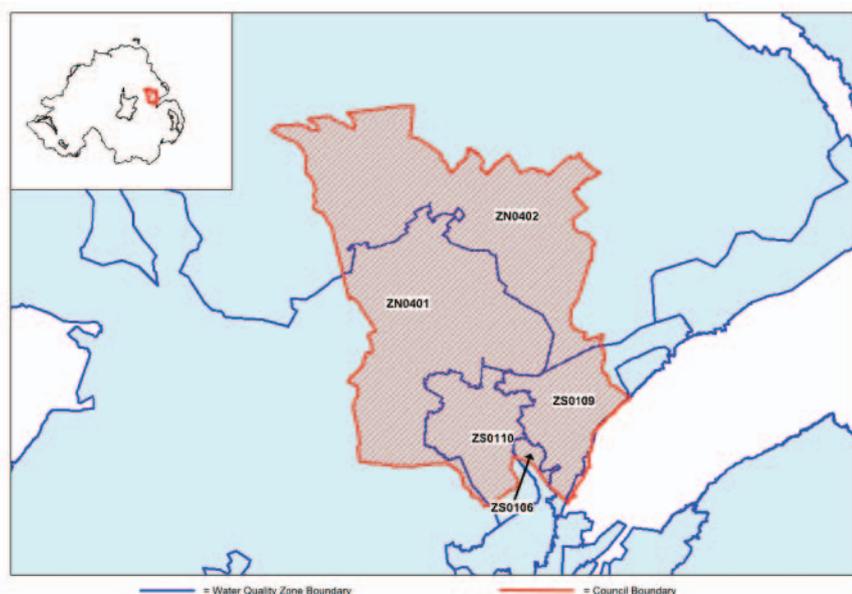
Zone Code	Zone Name	Zone Code	Zone Name
ZN1101	Clay Lake Keady	ZS0902	Fofanny Dromore
ZS0807	Castor Bay Loughgall	ZS0904	Fofanny Mourne
ZS0901	Camlough Newry West	ZS1001	Carran Hill Crossmaglen

2011 water quality Capital Works Programmes affecting the council area:

Ballintemple Zone Watermain Improvements	Major Incident Mitigation Project Freeze Thaw Improvements
Ballydougan to Newry Main Link Reinforcement	Mourne Coast Zone Watermain Improvements
Camlough/Bessbrook Sewerage Scheme - Phases 2&3	Network Area East Watermains
Crieve Road and Hilltown Road Newry Watermain Replacement	Newry Phase2 Watermain Improvements
Crieve Service Reservoir	Newry Zone Watermain Improvements
Fofanny Banbridge Zone Watermain Improvements Phase 2	Rostrevor/Tullymurry Zone Watermain Improvements
Lisburn to R.O.I. Border Trunk Road Improvements	Tullyhappy Service Reservoir
Lough Ross Zone Watermain Improvements	Warrenpoint Zone Watermain Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in Newry and Mourne council area over the next few years.

Newtownabbey Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Newtownabbey Council MZC	99.6%	99.9%	99.8%

2011 water supply zones wholly or partially within the council area:

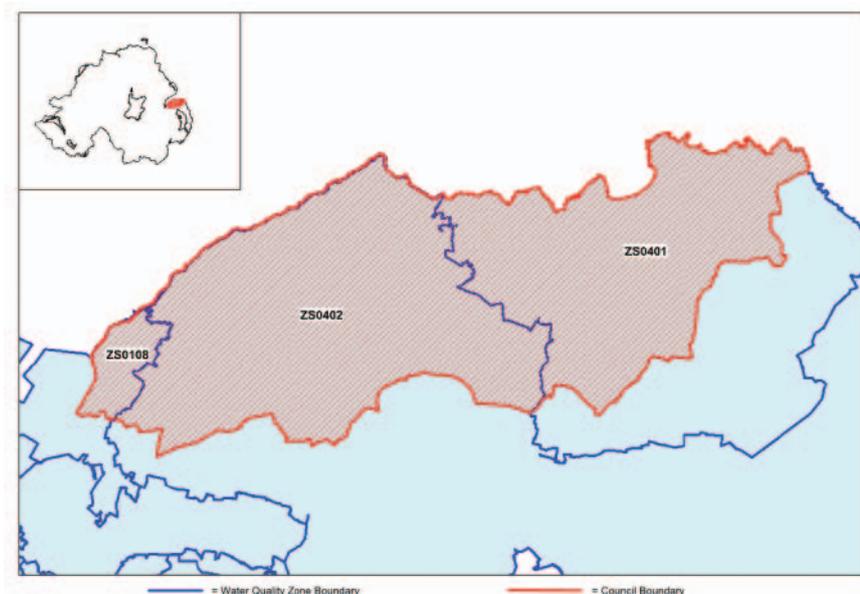
Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0109	Dorisland Whiteabbey
ZN0402	Killylane Ballynure	ZS0110	Dunore Point Glengormley
ZS0106	Dunore Belfast North		

2011 water quality Capital Works Programmes affecting the council area:

Ballywonard Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Newtownabbey Zone Watermain Improvements Phase 1
 Newtownabbey Zone Watermain Improvements Phase 2

The continuing optimisation of processes at Killylane WTW combined with the Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in the Newtownabbey council area over the next few years.

North Down Borough Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
North Down Council MZC	99.9%	99.8%	99.9%

2011 water supply zones wholly or partially within the council area:

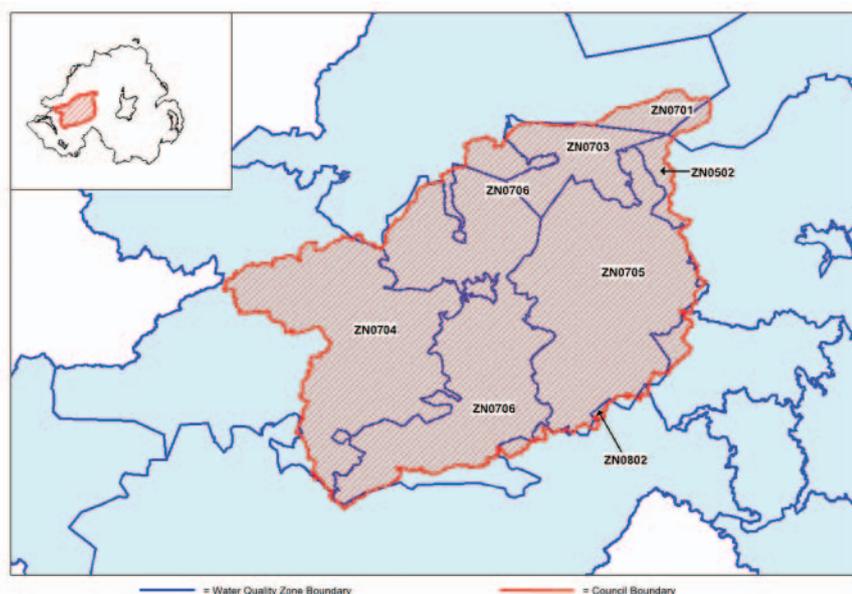
Zone Code	Zone Name	Zone Code	Zone Name
ZS0108	Belfast Purdysburn	ZS0402	Drumaroad Comber
ZS0401	Drumaroad Bangor		

2011 water quality Capital Works Programmes affecting the council area:

Major Incident Mitigation Project Freeze Thaw Improvements
 North Down Bangor Phase 2 Watermain Improvements
 North Down Strategic Trunk Watermains
 North Down, Bangor Zone Watermain Improvements

The ongoing Watermains Rehabilitation Framework will continue to maintain and improve the quality of water in North Down council area over the next few years.

Omagh District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Omagh Council MZC	99.7%	99.9%	99.8%

2010 water supply zones wholly or partially within the council area:

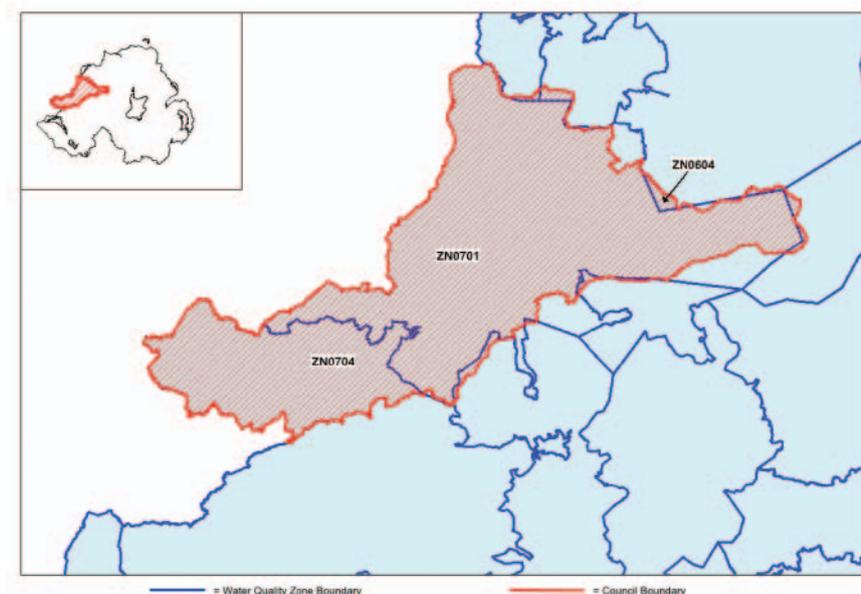
Zone Code	Zone Name	Zone Code	Zone Name
ZN0502	Lough Fea Cookstown	ZN0704	Lough Bradan Drumquin
ZN0701	Derg Strabane	ZN0705	Lough Macrory Beragh
ZN0702	Glenhordial Omagh	ZN0706	Lough Macrory Killyclogher
ZN0703	Lenamore Greencastle	ZN0802	Killyhevlin Enniskillen

2010 water quality Capital Works Programmes affecting the council area:

- Alleyhill Zone Watermain Improvements
- Derg - Omagh Area Transfer Pumps
- Glenhordial WTW replacement of Camowen pumping main
- Killyhevlin to Lough Bradan Link Watermain
- Lough Bradan WTW Upgrade
- Major Incident Mitigation Project Freeze Thaw Improvements
- Omagh Watermain Improvements
- Strule Intake For Derg WTW

The ongoing Watermains Rehabilitation Framework along with the upgrading of Lough Bradan WTW will continue to maintain and improve the quality of water in the Omagh council area over the next few years.

Strabane District Council



Mean Zonal Compliance (MZC)

	2009	2010	2011
Overall Northern Ireland MZC	99.7%	99.8%	99.8%
Strabane Council MZC	99.4%	99.7%	99.7%

2011 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0604	Caugh Hill Dungiven	ZN0704	Lough Bradan Drumquin
ZN0701	Derg Strabane		

2011 water quality Capital Works Programmes affecting the council area:

Alleyhill Zone Watermain Improvements
 Major Incident Mitigation Project Freeze Thaw Improvements
 Strule Intake for Derg WTW

The ongoing Watermains Rehabilitation Framework has improved the quality of water supplied to the Strabane council area. The ongoing Watermains Rehabilitation Framework along with the upgrading of Lough Bradan WTW and treatment optimisation at the Derg WTW will continue to maintain and improve the quality of water in the Strabane council area over the next few years. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones in a council area which may temporarily reduce the calculated compliance.

Appendix 5

Water Quality Incidents / Non-incidents

During 2011, there were 69 notifiable events of which 25 were categorised as non-incidents and 44 categorised as incidents by DWI:

Incidents 2011

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
2 - 4 January 2011	Dunore Point WTW (500,000 population)	During a period of increased water supply demand caused by the Freeze/Thaw treatment difficulties led to aluminium exceedances slightly above the PCV limit in the final water and in the related supply area. The extreme low temperatures caused some damage to operational pipework within the treatment plant. Remedial measures were immediately taken on site to reduce the aluminium levels in the final water to below the regulatory limit and trace heating has been installed on pipework that is vulnerable during periods of low temperature.	Antrim, Ards, Ballymena, Belfast, Castlereagh, Larne, Lisburn, Newtownabbey and North Down
3 January 2011	Lenamore Springs WTW (1,000 population)	Disturbance of particles caused by tankering operations into the holding tanks at Lenamore Springs led to a turbidity exceedance in the final water during a period of increased water supply demand caused by the Freeze/Thaw event. All other parameters tested were satisfactory and the result was not representative of the water from the treatment process. All subsequent samples taken to monitor following the exceedances were satisfactory. Note: Lenamore Springs was permanently removed from supply in December 2011 and this area is now supplied from the Derg WTW.	Omagh
6 January 2011	Killylane WTW (47,000 population)	Treatment difficulties led to a turbidity exceedance in the final water and elevated aluminium levels in the supply area during a period of increased demand caused by the Freeze/Thaw. Remedial measures were immediately taken on site to reduce the aluminium and turbidity levels in the final water to below the regulatory limit.	Ballymena, Larne and Newtownabbey
10 - 16 January 2011	Lough Macrory WTW (30,000 population)	Treatment difficulties connected to a problem with the backwashing of the primary filters led to aluminium exceedances in the final water and related supply area. Remedial measures were immediately taken on site to reduce the aluminium level in the final water to below the regulatory limit.	Cookstown, Dungannon & South Tyrone, Fermanagh, Omagh and Strabane
25 January 2011	Tully Road, Portglenone (1,700 population)	Discoloured water due to elevated levels of iron led to local media interest. A section of main in poor condition was identified for replacement. The mains replacement was completed at in December 2011. In the interim period until the main was replaced remedial mains bleeding and flushing was carried by NIW out to improve water quality.	Ballymena
2 February 2011	Crocknafeola Trunk Main (2,600 properties)	Interruption to supply to customers. Technical difficulties during a trunk main repair led to a loss of supply to properties in the Killeel, Annalong and Ballymartin areas. Bottled water was distributed during this period. There were no water quality exceedances associated with this incident.	Newry & Mourne
17 February 2011	Inishmore Road, Lisbellaw (35-40 properties)	Complaints of discoloured water led to local media interest. A section of main in poor condition was identified for replacement. A mains flushing programme was implemented to improve water quality and bottled water was supplied to affected properties until mains rehabilitation was completed in April 2011.	Fermanagh and Omagh
8 March 2011	Rathlin WTW (120 population)	A final water sample failed for THMs. It is likely to have been related to increased bromide in the raw water.	Moyle
21 March 2011	Caugh Hill WTW (74,000 population)	Treatment difficulties led to an iron failure in the final water. Remedial measures were immediately taken on site to reduce the iron level in the final water to below the regulatory limit.	Derry, Limavady and Strabane
23 March 2011	Dernawilt Road, Rosslea (62,500 population)	An odour exceedance was reported. Investigations into the cause of the exceedance identified it as a localised problem of short duration. It is possible that it may have been related to temporary re-zoning work in the area while operational work was being carried out. No water quality complaints in this area were received at this time and all follow up check samples were satisfactory.	Fermanagh
28 March 2011	Upper Dromore Road, Warrenpoint (2 properties)	A pH exceedance was caused by a cement-lined main. Investigations carried out identified that this was a localised problem affecting only 2 properties. A new hydrant was installed and this section of main is now on a regular flushing programme. This action has resolved the water quality problems in this section of main. Bottled water was provided to the affected properties until remedial actions were completed.	Newry & Mourne

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
25 – 26 April 2011	W2308P Castor Bay WTW (293,000 population)	Treatment difficulties related to the lime dosing system led to aluminium exceedances in the final water. Remedial measures were immediately taken on site to reduce the aluminium level in the final water to below the regulatory limit. Additional manual tests on site have been implemented to prevent re-occurrence of this problem.	Armagh, Craigavon, Dungannon, Lisburn and Newry & Mourne
23 May 2011	Caugh Hill WTW (74,500 population)	Aluminium exceedances in the final water and related supply area. Following detailed investigations on site the exact cause of the failure was not determined. All follow-up check samples were satisfactory and showed aluminium levels below the regulatory limit.	Derry, Limavady and Strabane
24 May 2011	Carmoney WTW (67,000 population)	Operational treatment difficulties led to aluminium and THM exceedances in the final water. Adverse weather conditions and high winds resulted in a power failure at Carmoney WTW. Remedial measures were immediately taken on site to reset dosing pumps.	Derry
1 June 2011	Belleek WTW (4,000 population)	Pesticide (MCPA) exceedance caused by periods of heavy rainfall during the end of May and the beginning of June which could have caused increased herbicide wash off from the catchment area into Lough Erne. Powdered Activated Carbon (PAC) dosing carried out on site as needs identified through water quality monitoring to reduce MCPA levels in the final water.	Fermanagh
3 June 2011	Ballinrees WTW (105,000 population)	Operational problems in the lime dosing stage of the treatment process led to a turbidity exceedance in the final water. Remedial measures were immediately taken on site to repair the fault. Alarm levels on site have been reviewed to prevent re-occurrence of this problem.	Ballymoney, Coleraine and Limavady
6 June 2011	Killyhevlin WTW (62,500 population)	Pesticide (MCPA) exceedance caused by periods of heavy rainfall during the end of May and the beginning of June which could have caused increased herbicide wash off from the catchment area into Lough Erne. Refurbishment of Sulzar filters being carried out on site with replacement of Carbon within the filters. A feasibility study for the installation of additional treatment, Granular Activated Carbon (GAC) filters is currently being undertaken.	Dungannon & South Tyrone, Fermanagh
6 June 2011	Derg WTW (35,000 population)	Pesticide (MCPA) exceedance caused by periods of heavy rainfall during the end of May and the beginning of June which could have caused increased herbicide wash off from the catchment area into the River Derg. Granular Activated Carbon (GAC) filters are in operation at the treatment works to reduce pesticide levels in the final water.	Strabane
9 June 2011	Altnahinch WTW (28,000 population)	Operational problems led to an aluminium exceedance in the final water. Remedial measures were immediately taken on site to carry out repairs.	Ballymoney, Coleraine and Limavady
15 June 2011	Killyhevlin Zone (62,500 population)	Odour and taste exceedances possibly caused by a marked amount of loose vegetation which had built up at the raw water intake at Killyhevlin WTW which could have affected the raw water quality. A Consideration for Enforcement Order (CPEO) issued by DWI in 2011 for Taste and Odour exceedances in the Killyhevlin Zone. A feasibility study for the installation of additional treatment, Granular Activated Carbon (GAC) filters is currently being undertaken by NIW in relation to this CPEO.	Fermanagh and Dungannon & South Tyrone
4 July 2011	Dorisland WTW (120,000 population)	Pesticide (MCPA) exceedance caused by higher rainfall during June which could have caused increased herbicide wash off from the catchment area into Dorisland reservoir. Powdered Activated Carbon (PAC) dosing carried out on site as needs identified through water quality monitoring to reduce MCPA levels in the final water.	Belfast, Carrickfergus and Newtownabbey
18 July 2011	Caugh Hill WTW (93,000 population)	Treatment difficulties following adverse weather conditions and very heavy rainfall led to iron, THM, turbidity and aluminium exceedances in the final water. Remedial measures were immediately taken on site to bring the final water quality parameters to below the regulatory limit. A new coagulation control system is to be installed at Caugh Hill during 2012.	Derry, Limavady and Strabane
20 July 2011	Orange Hall, Hilltown (1 property)	A significant iron exceedance was detected in a sample taken from a customer tap caused by the condition of a section of an old iron main. Investigations have shown that the problem is localised to this individual property. The main has been identified for replacement. As an interim measure the connection to the property was relocated and mains flushing programme was put in place. Bottled water was provided to the property whilst remedial actions were undertaken. These interim measures have improved water quality and bottled water is no longer required to be issued.	Newry & Mourne

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
16 August 2011	Carmoney WTW (67,000 population)	Treatment difficulties following automatic plant shut downs related to elevated levels of ammonia detected in the raw water supply led to aluminium and THM exceedances in the final water. Remedial measures were immediately taken on site to bring the final water quality parameters to below the regulatory limit. Alarm limits have been reviewed on site to prevent a re-occurrence of this problem.	Derry
19 August 2011	Rathkeel SR (269 properties)	Coliform bacteria were found in a final water sample taken from Rathkeel SR. The cause of the exceedance was not determined following extensive investigations carried out. An internal inspection of the SR was carried out and no defects were found.	Ballymena
2 September 2011	Glenvale Road, Newry (4 properties)	Significant levels of aluminium, iron, manganese and turbidity were detected in a sample taken from a customer tap. Sampling and investigation has confirmed that this is a localised problem affecting 4 properties. Investigations concluded that the cause of the exceedance was due to the poor condition of the main coupled with the low demand. The main has been identified for replacement.	Newry & Mourne
5 – 7 September 2011	Drumaroad WTW (385,000 population)	Treatment difficulties following a power dip / brown out led to aluminium exceedances in the final water and related supply area. Remedial measures were immediately taken on site to bring the final water aluminium levels to below the regulatory limit. A PLC robustness test was carried out to assess the measures put in place to reduce the effects of power outages.	Ards, Banbridge, Belfast, Castlereagh, Down, Lisburn and North Down
19 September 2011	Caugh Hill WTW (74,000 population)	THM exceedances in the final water and related supply area possibly related to an increase in the raw water organic content following significant deforestation in the catchment area. A new coagulation control system is to be installed at Caugh Hill during 2012 which will help to address changes in the raw water quality and improve treatment control.	Derry, Limavady and Strabane
26 September 2011	Dungonnell WTW (30,500 population)	Treatment difficulties led to a pH exceedance in the final water and pH and iron exceedances in the related supply area. Remedial measures were immediately taken on site to bring the final water quality parameters to within the regulatory limit.	Antrim and Ballymena
28 September 2011	Glenhordial WTW (10,000 population)	Aluminium and manganese exceedances occurred in final water samples. Extensive investigations carried out on site found that all the treatment processes were operating satisfactorily and that the results were not representative of the water going into supply. It is suspected that some disturbance of sediments / particulate matter in the tank and sample line may have occurred.	Omagh
30 September 2011	Connswater Mews, Belfast (2 Properties)	Coliform bacteria were detected at two customer taps. "Boil Water Before Use" notices were issued (notices in place for six days). Following investigations carried out the most likely cause identified for these exceedances was contamination from the taps at both properties. The customers were informed of the cause of the failures. All other samples taken in the area and from the WTW and SR showed water quality to be bacteriologically satisfactory	Belfast
2 October 2011	Drumaroad WTW (385,000 population)	Operational problems caused treatment difficulties which led to a turbidity and an aluminium exceedance in the final water and an aluminium exceedance in the related supply area. Remedial measures were immediately taken on site to bring the final water aluminium and turbidity levels to below the regulatory limit. On site routine maintenance checks have been reviewed to prevent re-occurrence of this problem.	Ards, Banbridge, Belfast, Castlereagh, Down, Lisburn and North Down,
5 October 2011	Poleglass SR (56,000 population)	A technical difficulty led to increased chlorine dosing at Poleglass SR and chlorine odour and taste complaints in the related supply area. There was subsequent local media interest. Remedial measures were taken on site to reduce the chlorine dose to set levels.	Belfast and Lisburn
12 October 2011	Rathlin WTW (120 population)	"Boil Water Before Use" notices were issued (notices in place for 17 days) after Cryptosporidium oocysts were detected. THM and turbidity exceedances were also reported. The treatment works has been upgraded to include a secondary filtration process. Ongoing remedial action is being carried out at the site.	Moyle
17 October 2011	Caugh Hill WTW (74,000 population)	Treatment difficulties led to pH and aluminium exceedances in the final water. Remedial measures were immediately taken on site to bring the final water aluminium and pH levels to within the regulatory limits. On site routine process checks have been reviewed following these exceedances.	Derry, Limavady and Strabane

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
20 October 2011	Springhill SR (2342 properties)	E. coli and coliform bacteria were detected in the final water. The chlorine dosing unit at an upstream Service Reservoir was not adequately dosing chlorine into the system. Remedial measures were immediately taken on site to increase chlorine residuals in the system. A review of the routine maintenance checks was carried out.	Derry
2 November 2011	Ballinrees WTW (105,000 population)	Technical difficulties caused problems with the treatment process and led to an aluminium exceedance in the final water. Remedial measures were immediately taken on site to bring the final water aluminium level to within the regulatory limits.	Ballymoney, Coleraine and Limavady
4 November 2011	Ballymoney Area (3,500 population)	"Boil Water Before Use" notices were issued (notices in place for nine days) following bacteriological failures. Bottled water was provided to schools and known vulnerable customers. The problem occurred after a new mains connection.	Ballymoney
14 November 2011	Lough Fea WTW (29,500 population)	Operational work on site to facilitate cleaning of the clear water tank led to aluminium exceedances in the final water and related supply area. A review of operational procedures relating to this work was carried out to prevent a recurrence of this exceedance.	Cookstown, Dungannon & South Tyrone, Magherafelt and Omagh.
27 November 2011	Altnahinch WTW (28,000 population)	Operational problems with the lime system at the plant led to pH and aluminium exceedances in the final water and aluminium exceedances in the related supply area. Remedial measures were immediately taken on site to bring the final water aluminium and pH levels to within the regulatory limits. New lime pumps were installed in December 2011.	Ballymoney, Coleraine and Limavady
30 November 2011	Lenamore Springs WTW (1,000 population)	Cryptosporidium oocysts detected in final water. Lenamore Springs was permanently removed from supply on 1 December 2011 and this area is now supplied from the Derg WTW.	Omagh
16 December 2011	Nursery Road, Ahoghill (1 property)	Following a number of bursts during operational work, a customer complaint sample failed bacteriologically. A "Boil Water Before Use" notice was issued to a single property (notice in place for three days).	Ballymena
28 October 2011	Donegall Park Avenue, Belfast (9 Properties)	Bacteriological failures occurred at a number of properties. This was a localised incident and affecting 9 properties. All other samples taken in the area were satisfactory. The exact cause of the exceedances was not determined but it is possible that a small amount of contamination may have been introduced into this section of main during the operational work involved in the mains replacement.	Belfast
29 December 2011	Camlough WTW (21,000 population)	Technical difficulties led to aluminium exceedances in the final water. Remedial measures were immediately taken on site to bring the final water aluminium level to within the regulatory limit. All follow-up check samples were satisfactory.	Newry & Mourne

Incidents 2011

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
10 January 2011	Seagahan WTW (30,000 population)	Treatment difficulties led to a pH below the limit in the final water but it did not affect the related supply area. Remedial measures were immediately taken on site to bring the final water pH to within the regulatory limit. All follow-up check samples were satisfactory.	Armagh
1 February 2011	Seagahan WTW (30,000 population)	Treatment difficulties following a power supply interruption resulted in short term increases in final water turbidity which did not affect the related supply area. Immediate action was taken to reinstate the power supply and remedial measures were immediately taken on site to bring the final water turbidity to within the regulatory limit. All follow-up check samples were satisfactory.	Armagh
8 February 2011	Shanmoy @ Mullaghanagh WTW (41,000 population)	Turbidity exceedances due to unrepresentative sampling. This WTW has now been permanently removed from supply and the area is now supplied from Castor Bay WTW.	Dungannon & South Tyrone
10 March 2011	Altmore WTW (9,000 population)	Turbidity exceedance due to unrepresentative sampling. This WTW was permanently removed from supply in April 2011 and the area is now supplied from Castor Bay WTW.	Dungannon & South Tyrone
14 March 2011	Foyle Fold, Londonderry (1 Property)	An odour and taste exceedance was reported from a single property. No cause was determined and all follow-up check samples were satisfactory.	Derry

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
31 March 2011	Glenhordal WTW (10,000 population)	Aluminium exceedances due to unrepresentative sampling.	Omagh
18 April 2011	Lough Bradan WTW (20,000 population)	Turbidity exceedances due to unrepresentative sampling.	Fermanagh and Omagh
22 April 2011	Carmony WTW (67,000 population)	Turbidity exceedance due to unrepresentative sampling.	Derry
3 May 2011	Caugh Hill WTW (73,836 population)	Turbidity exceedance due to unrepresentative sampling.	Derry, Limavady and Strabane
6 May 2011	Coolmillish Road, Armagh (1 property)	Odour and taste exceedances at a single property due to internal plumbing issues. The water supply to the property was found to be satisfactory. A full plumbing inspection was carried out by the NIW Water Regulations Inspection team and the customer was informed of the findings and recommendations.	Armagh
7 May 2011	Killylane WTW (47,000 population)	Turbidity exceedances due to unrepresentative sampling.	Ballymena, Larne and Newtownabbey
7 May 2011	Ballinrees WTW (105,000 population)	Short term loss of disinfection resulted in reduced levels of chlorine in the final water. There were no water quality exceedances in relation to this event. Operational strategies have been implemented to prevent re-occurrence.	Ballymoney, Coleraine and Limavady
25 May 2011	Camlough WTW (21,300 population)	Aluminium, iron and manganese exceedances due to unrepresentative sampling.	Newry & Mourne
2 June 2011	Dorisland Carrick Zone (124,000 population)	Bromate exceedance reported. Following extensive investigation the exceedance was determined to be unrepresentative of water quality in the area.	Belfast, Carrickfergus and Newtownabbey
3 June 2011	Carran Hill WTW (11,000 population)	There was potential for pollution from a fuel laundering plant to contaminate Lough Ross. There were no related water quality failures attributed to this event. Works staff monitored the final water at the works continuously from the 3rd June to 6th June and did not detect any changes in taste or odour. There were no visual signs of oil contamination at the intake or within the treatment works.	Newry & Mourne
16 June 2011	Dungonnell WTW (30,500 population)	Technical issues led to short term treatment problems. There were no related water quality failures.	Antrim and Ballymena
29 June 2011	Clay Lake WTW (7,500 population)	Incorrect coagulant delivery had the potential to adversely affect the treatment process. There were no related water quality failures.	Armagh
8 July 2011	Rathlin WTW (120 population)	Iron, manganese and turbidity exceedances due to unrepresentative sampling.	Moyle
11 August 2011	Killyhevlin WTW (62,500)	An oil spill in Lough Erne had the potential to cause problems at Killyhevlin WTW. There were no visual signs of oil contamination at the intake or within the treatment works. There were no related water quality failures.	Dungannon & South Tyrone and Fermanagh
26 August 2011	Carmony WTW (67,000 population)	Turbidity exceedance due to unrepresentative sampling.	Derry
3 October 2011	Caugh Hill WTW (74,000 population)	Turbidity exceedance due to unrepresentative sampling.	Derry, Limavady and Strabane
7 November 2011	Killylane WTW (47,000 population)	Aluminium exceedance reported. Following extensive investigations on site the cause was not determined and the related supply area was not affected.	Ballymena, Larne and Limavady
9 November 2011	Lough Fea WTW (29,500 population)	Turbidity exceedance due to unrepresentative sampling.	Cookstown, Dungannon & South Tyrone, Magherafelt and Omagh.
5 December 2011	Fofanny WTW (86,500 population)	Aluminium exceedances due to unrepresentative sampling.	Cookstown, Dungannon & South Tyrone, Magherafelt and Omagh
27 December 2011	Ballinrees WTW (103,000 population)	An odour and taste exceedance was reported from a final water sample. Following extensive investigations no cause could be identified and it did not affect the related supply area.	Ballymoney, Coleraine and Limavady

Appendix 6

Water Supply (Water Fittings) Regulations (NI) 2009 Enforcement Policy

NI Water's customer leaflet "Water Fittings Regulations" details why the Water Regulations exist and highlights to customers their obligations under the Regulations. A web page has been set up on the NI Water web site for customers where they can download the regulations, guidance notes, information leaflets and notification forms. Both the leaflets and web pages will provide customers with a valuable insight to and appreciation of what the Regulations will mean to them, and the benefits in protecting drinking water supplies as well as the potential consequences of non-adherence. Customers are advised both online and in leaflets that before they commence certain plumbing installations or alterations they must first notify NI Water in writing, 10 days advance notice is required before work can commence pending approval. NI Water also promotes and advocates the benefits of using approved contractors who are members of the Plumbing Industry Licensing Scheme (PILS) as administered by the trade associated known as the Scottish and Northern Ireland Plumbing Employers Federations (SNIPEF).

NI Water has a dedicated team of 6 front line water regulation inspectors across the province headed by a Field Manager and Senior Engineer.

NI Water has allocated each non-domestic customer a fluid category rating which was derived from Standard Industrial Classification (SIC) codes and also guidance provided by the Water Regulation Advisory Scheme (WRAS) and the Water Regulation guidance on fluid categories. A proactive inspection programme is carried out each year with inspection intervals based on national 'Best Practice' documentation issued to the water authorities by WRAS as accepted by the Department for Environment, Food and Rural Affairs (DEFRA).

The Water Regulation team has systems and processes in place which are used to schedule and report on inspections, repeat inspections, their findings, contraventions and improvement notices. The Regulation team regularly liaises with external customers, scientific services and networks water teams within the company regarding compliance and non-compliance with the regulations. The team also liaises with other GB water company regulation teams and water industry expert groups to ensure a consistent application of the Regulations is evident in Northern Ireland.

NI Water will only consider applying to the Regulator (WPD) for a relaxation of requirements in exceptional circumstances and not as a result of failure or lack of due diligence by customers to comply with their legal obligations under the Regulations.

Based on the Northern Ireland Water Annual Information Return (AIR12)

NI Water Customer Base

Base Data, using NIAUR Annual Information Return figures:

Description	Number
*Total number of connected properties	810,367
*Total number of new connections	4,167

* Information source AIR 2012

Enforcement Data

Staff and Training

Number of staff involved in enforcement.

Description	Number
Spending more than 75% of time	7
Spending between 50% and 75% of time	0
Spending between 25% and 50% of time	1

All Water Regulation team members including line management will have attended one or more of the following courses and successfully passed the relevant assessments and attained qualifications as certified by the training organisations or award body. As a minimum all Regulation enforcement staff are expected to have passed the City and Guilds (C&G) in Water Regulations for enforcement staff, any change of staff will be conditional on new team members undertaking and passing the Water Regulation C&G qualification:

- C&G in Water Regulations for Enforcement staff
- C&G L8 legionella course

Promotion of the Regulations

As a fully subscribing member of WRAS and part owner NI Water has representation on the WRAS Board, Technical Committee and Technical Support Group national forums which meet at least 3 times per year.

NI Water uses WRAS for advice on the interpretation of the Regulations where unusual installations are discovered or where a dispute with an installer/ manufacturer occurs regarding the particular meaning of a certain regulation. Participation on this national stage ensures that NI Water like other water suppliers is applying the Regulations consistently across our customer base. It also provides a very useful networking forum where NI Water and other water suppliers can field difficult and complex questions and receive back comprehensive advice and potential solutions.

A Water Regulation web page is available on the company web site (www.niwater.com) for both Domestic and Non Domestic customers to refer to. The site contains Regulation specific background information, leaflets in PDF format and customer notification forms. A Water Regulation company e-mail has also been provided to facilitate customer enquiries.

Notifications

Description	Number
Total No. of water connection application forms received between 1st April 2011 - 31st March 2012 (Notifications)	6,111
Total number of written customer notifications other than those associated with new connections applications.	5
Total No. of new connections made between 1st April 2011 – 31st March 2012	4,167

In most cases customers must notify NI Water in advance of installing or making changes to the water systems within their premises. Owners, occupiers and plumbing installers must get approval from NI Water by giving advance notice of planned plumbing work. Advance notification forms can be obtained from the NI Water web site, completed and returned to the address detailed on the form. The list of work that cannot commence without advance notification can be obtained by referring to the Water Regulations and are detailed under Regulation 5. NI Water will not unreasonably withhold consent but it may be granted subject to conditions, which must be followed. If permission to commence plumbing works is not received within 10 working days of writing to NI Water then consent is deemed to have been granted and plumbing work may commence.

Approved Contractors Scheme

Northern Ireland Water recommends that customers use an approved plumbing contractor when installing, altering or repairing plumbing systems, water fittings and water using appliances. Owners and occupiers of premises and anyone who installs plumbing systems have a legal duty to ensure their systems satisfy the requirements of the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009.

NI Water recommends customers use approved plumbing contractors who are members of the Scottish and Northern Ireland Plumbing Employers Federation (SNIPEF) **Plumbing Industry Licensing Scheme**. Local SNIPEF Licensed Plumbers can be found by entering a postcode or town on their web site www.needaplumber.org or by contacting SNIPEF on **0845 224 0391**.

An approved plumbing contractor will certify that his or her work meets the requirements of the Regulations and any subsequent breaches associated with their work is the legal responsibility of the plumber and not owners or occupiers.

Description	Number
No of members in SNIPEF Jan 2011 to Dec 2011	770
No of members in Northern Ireland.	81
No of members in Northern Ireland who are also members of the Plumbing Industry Licensing Scheme (PILS).	71
No of members in Northern Ireland awaiting approval as approved members of the Plumbing Industry Licensing Scheme.	10

Inspections (Other than those arising from Notification)

As anticipated in the previous year's annual return; inspections, contraventions, notifications, repeat visits and enforcement notifications have considerably increased in 2011 compared with 2010.

Description	Number
*Total number of Domestic and Non Domestic Inspections Jan 2011 to Dec 2011	900
*Contraventions	1,604
*Contraventions rectified	868
*Outstanding contraventions	736

* Calendar year

Contraventions found on all property types are various, they range from storage cisterns having the wrong type of air gap fitted, overflows running to waste in non-visual areas, dead legs on pipe work, the requirement to install servicing valves at float valves, insulation and labelling of pipe work, cross connections between private water supplies (Bore Wells) and NI Water supplies within private premises and rain water harvesting systems not being installed in compliance with British Standards and the Regulations.

Enforcement Actions

NI Water, through its enforcement activities, has a graduated process of engaging customers. Appointment letters are issued to customers and these are followed by inspection report findings which may include recommendations or improvement requests. Customers are given an adequate period of time to make good. Failure to comply with these requests will then generate further repeat inspections and notifications. Where these requests are not complied with, a non-compliance report is then forwarded to the NI Water legal team for appropriate action. No legal referrals were required in the reporting year.

Disputes

No formal disputes referred to arbitration. However, there is 1 ongoing discussion with a key customer in relation to their interpretation of whole site protection requirements and definitions within the Regulations.

General Information

Assessed number of high risk premises connected to the NI Water distribution network (i.e. Class 4 and 5 Fluid Category (FC))

There are circa 40,000 FC4&5 premises across Northern Ireland (NI Water inspected 537 of these premises during the reporting year)

Number of Reactive Water Regulation inspections attributed to water quality investigations as notified to DWI

1. Ballymoney Boil Water incident
2. Coolmillish Road area Armagh (Taste and Odour)
3. Bucks Head Road area (PH and Aluminium exceedances)
4. Foods factory (Arsenic exceedances)
5. Dunmurry area Belfast (Petroleum odour)
6. Paisley Road area Carrick (E. coli exceedances)

In addition to proactive inspections the Water regulation team will also undertake reactive inspections as a result of water quality concerns following sample failure. These reactive inspections can be carried out following requests for assistance from NI Water staff. The team will also conduct occasional reactive inspections as a result of concerns or requests for assistance from customers.

Action taken by NI Water

Reports are submitted to NI Water scientific and operational teams, copies are available from NI Water upon request. Customers are required to take remedial action to provide whole site protection and are given Water Regulation compliance advice.

Reporting Year Recap

Since the formation of NI Water and the introduction of the new Water Regulations in August 2009 NI Water has in the last reporting year:

- Further updated the NI Water, Water Regulation web page and literature necessary for the enforcement of the regulations and customer compliance guidance.
- Provided a facility on the company web site for customers to locate their nearest approved plumbing contractor as registered through SNIPEF (www.needaplumber.org).
- Produced a winter pipe protection leaflet covering salient topics within the Regulations, complimented by a TV and Radio winter property protection and preparation campaign.
- NI Water attended plumbing industry trade shows, trade organisation forums and energy saving conferences to promote the benefits of compliance with the Water Regulations.

Looking Forward

- Further develop processes and documentation relating to Water Regulation inspections and enforcement;
- Liaise with NI Water legal team regarding the implementation of a compliance framework;
- NI Water will continue to promote at every appropriate opportunity the general awareness of the Regulations to customers through suitable public and professional interfaces;
- Continue to participate and benefit from the attendance and participation on the various WRAS forums;
- Continue to assist SNIPEF in the governance of the approved plumbing contractor's scheme as well promotional opportunities to raise plumbing standards in Northern Ireland.
- NI Water plans to build a closer relationship and interaction with the local Northern Ireland branch committee of SNIPEF.
- Continuous improvement and refinement of Water Regulation reports as output from the Connect 2 inspection and reporting software application.

Appendix 7

Glossary of Technical Terms

Aesthetic	Associated with the senses of taste, smell and sight.
Authorised Departure (AD)	A time limited authorised departure from the regulatory limit for certain parameters, provided that there is a planned programme of work at the water treatment works to improve the water quality and that there are no adverse health implications.
Authorised Supply Point	A sampling point within the distribution system authorised by the DWI for certain parameters, because the results of the analysis of such samples are unlikely to differ in any material respect from the results of the analysis of samples taken from customers' taps.
Catchment	The area of land that drains into a watercourse.
Chloramination	An alternative form of disinfectant, based on chlorine and ammonia, which provides a longer lasting residual disinfectant in the distribution system compared to free chlorine.
Coagulation	The process of aggregating colloidal and fine particulate matter into a settleable material.
Coliforms	A group of bacteria which may be faecal or environmental in origin.
Compliance assessment	A comparison made by the DWI of data (gathered by NI Water) against standards and other regulatory requirements.
Contravention	A breach of the regulatory requirement.
Cryptosporidiosis	The illness produced by infection with <i>Cryptosporidium</i> .
Cryptosporidium	A protozoan parasite.
Determination	A single analytical result for a specific parameter.
Distribution systems	NI Water's network of mains, pipes, pumping stations and service reservoirs through which treated water is conveyed to customers.
Drinking Water Directive	European Council Directive (98/83/EC) relating to the quality of water intended for human consumption.
DWI	Northern Ireland Drinking Water Inspectorate - has an independent responsibility to audit drinking water quality compliance against the standards set in the Regulations.
DWSP	'Drinking Water Safety Plan' Based on a comprehensive risk assessment and risk management approach to all the steps in a water supply chain
Event	A situation affecting or threatening to affect drinking water quality.
Exceedance	Synonym for contravention (see above).
Faecal coliforms	A sub-group of coliforms, almost exclusively faecal in origin.
Filtration	The separation of suspended particulate matter from a fluid.
GPS	Global Positioning System – a satellite based location system which will give an accurate record of position.
Groundwater	Water from aquifers or other underground sources.

Hydrogen ion	A measure of the acidity or basicity related to the concentration of the hydrogen ion (also referred to as pH).
Incident	An event where there has been a demonstrable deterioration in the quality of drinking water.
Investment programme	Investment in improvement works to water treatment works and distribution systems.
LIMS	Laboratory Information Management System – the system used by NI Water to record and audit the results of the hundreds of thousands of samples collected each year.
Mains rehabilitation	Restoration or replacement of water mains pipework to a proper condition.
MCPA	MCPA is a selective hormone-type herbicide, which is absorbed by the leaves and to some degree the roots.
Mean Zonal Compliance	The assessment of water quality at a parameter level based on water supply zones.
Microbiological	Associated with the study of microbes.
m³/d	Cubic metres per day.
mg/l	Milligrammes per litre.
µg/l	Microgrammes per litre.
ml	Millilitre.
MI/d	Megalitres per day (one MI/d is equivalent to 1,000 m ³ /d or 220,000 gallon/d).
Oocyst	The resistant form in which <i>Cryptosporidium</i> occurs in the environment, and which is capable of causing infection.
Orthophosphoric acid	A chemical dosed in low concentrations at water treatment works to minimise the uptake of lead from old pipework into customers' water.
PAHs	A group of organic compounds known as polycyclic aromatic hydrocarbons, comprising, for the purposes of the Regulations, four substances: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno (1,2,3-cd) pyrene,
Parameter	A parameter is any substance, organism or property listed in the regulations.
Pathogen	An organism which causes disease.
PCV	See 'Prescribed concentration or value'.
Pesticides	Any fungicide, herbicide or insecticide or related product (excluding medicines) used for the control of pests or diseases.
Plumbosolvency	The tendency for lead to dissolve in water.
Prescribed Concentration or Value	The numerical value assigned to water quality standards (PCV), defining the maximum or minimum legal concentration or value of a parameter. In certain circumstances, the DWI may authorise a time limited departure from the regulatory value. See 'Authorised Departure'.

Protozoan parasites	A single celled organism that can only survive by infecting a host.
Public register	The information made available by NI Water to the public as required by regulation 34.
Regulations	The Water Supply (Water Quality) Regulations (Northern Ireland) 2010
Remedial action	Action taken to improve a situation.
Service reservoir (SR)	A water tower, tank or other reservoir used for the storage of treated water within the distribution system.
SIC Code	Standard Industrial Classification Code – used for Water Fittings Regulations
Springs	Groundwater appearing at the surface at the outcrop of the junction of an impermeable stratum.
Surface water	Water from rivers, impounding reservoirs or other surface water sources.
Technical audit	The means of checking by the DWI that NI Water is complying with its statutory obligations.
Toxicology	The study of the health effects of substances.
Treated water	Water treated for use for domestic purposes as defined in the Regulations.
Trihalomethanes (THMs)	A group of organic substances comprising, for the purposes of the Regulations, four substances: trichloromethane (also known as chloroform), dichlorobromomethane, dibromochloromethane and tribromomethane.
UKAS	The sole national accreditation body recognized by government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services.
Utility Regulator	The Northern Ireland Authority for Utility Regulation (NIAUR).
WPD	DRD Water Policy Division. Deemed to be the Regulator for all activities associated with the Water Supply (Water Fittings) Regulations (NI) 2009.
WRAS	The Water Regulation Advisory Scheme. A list of Standard Industrial Classification codes with related fluid categories used to define categories of non-domestic properties.
Water Regulations	The Water Supply (Water Fittings) Regulations (NI) 2009.
Water Safety Plan	A means of ensuring that a water supply is safe for human consumption based on a comprehensive risk assessment and risk management approach to all the steps in a water supply chain from catchment to tap.
Water supply zone (Zone)	The basic unit of supply for establishing sampling frequencies, compliance with standards and information to be made publicly available.
Website	Location of information on the Internet. NI Water's website is: www.NIWater.com
Wholesomeness	A concept of water quality which is defined by reference to standards and other requirements set out in the Regulations.





Northern Ireland Water

Environmental Regulation

Westland House

Head Office

40 Old Westland Road

BELFAST

BT14 6TE

Tel: 08457 440088

E-mail: waterline@niwater.com

Web: www.niwater.com

ISBN: 978-1-907007-08-8

