

Drinking Water Quality **Annual Report 2009**



Introduction and Foreword

I am pleased to present to you Northern Ireland Water's (NI Water) Annual Drinking Water Quality report covering the calendar year 2009. This is our sixth 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 delivering to our customers the best drinking water quality ever.

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

Drinking water is regularly monitored and tested for quality. This report summarises NI Water's results from 1 January 2009 to 31 December 2009 to meet the requirements of the Regulations under which we operate. During this reporting period, 99.74% 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 demonstrates a continued improvement in overall drinking water quality compared to previous years' results. (2008 MZC-99.49%)

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

Our ongoing investments in water treatment, storage and mains have led to increased regulatory compliance. Whilst we continue to make progress, we are also aware that further challenges lie ahead and that investment must continue to maintain this high standard and address the remaining areas of non-compliance – our capital investment programme for the reporting period is detailed by council area in Appendix 4.

We relish 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 reap 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 continues to meet the obligations placed upon it to comply with regulatory standards and increasing customers' expectations.

Laurence MacKenzie
Chief Executive



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Drinking Water Quality

Water Quality Standards

During 2009 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 2009 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
- provision and publication of information

NI Water assesses standards for water quality against the parameters as 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.

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.

NI Water has used DWSPs completed during 2009, to inform the investment strategy for drinking water treatment works upgrades for 2010, 2011 and 2012. Water Safety Plans for all water supply systems will be submitted to the Drinking Water Inspectorate by the end of 2010 and will further inform the strategy for the period beyond 2012.

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 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 customer supply. To achieve this goal, NI Water has just implemented a new 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.

The drivers for this programme of work are base maintenance, pressure improvement, reduction in interruption to supplies, water quality, reduction in levels of leakage and growth. NI Water considers a range of techniques for the installation of the rehabilitated mains from 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 – with the most appropriate technology being 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. The standards that have a time limited AD are for Total Trihalomethanes and a pesticide (MCPA) and apply to the water supplied to the Water Supply Zones listed in Appendix 2. These named Zones are supplied from Water Treatment Works that have an agreed fixed programme of works intended to make them fully compliant with the regulations.

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 40 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) 2007”

Reporting Year	2004	2005	2006	2007	2008	2009
Mean Zonal Compliance (i) (average water quality at customer tap at parameter level)	98.65%	99.02%	99.34%	99.30%	99.49%	99.74%
Water Treatment Works Water Quality	99.83%	99.89%	99.90%	99.92%	99.95%	99.92%
Overall Quality at all NI Water sites and customer taps	99.22%	99.49%	99.64%	99.60%	99.69%	99.80%

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 employs 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 60 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 relevant Health Authorities to ensure customer safety.

Sufficiency of Supply

Approximately 800,000 domestic, agricultural, commercial and business properties in Northern Ireland are connected to the public water supply – this equates to 98.7% of the total population. This entailed supplying an average of more than 623 million litres of high quality drinking water to customers every day during 2009. 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.

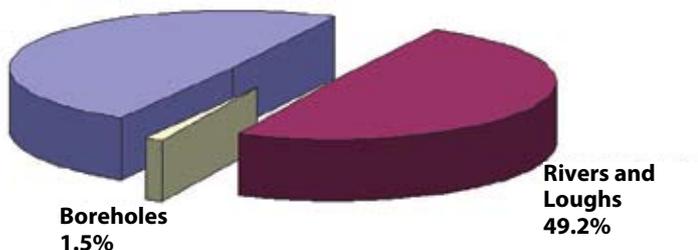
The Order requires NI Water to review the plan on an annual basis and prepare a revised plan every 5 years or when there is a material change in circumstances.

NI Water has recently completed a Draft Water Resource Management Plan to meet this obligation and proposes to publish this draft plan for consultation in mid 2010.

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

Water Sources

Impounding Reservoirs
49.3%



Drinking Water Inspectorate - Technical Audit

A 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 2009, the technical audit inspection programme included:

- audits of Dungonnell and Caugh Hill Water Treatment Works (full audits);
- one analytical laboratory audit (Altnagelvin);
- two sampling audits (Altnagelvin and Westland House);
- the Laboratory Information Management System (LIMS) audit (Northland House);
- an audit of procedures and practices used within mains rehabilitation ;
- a *Cryptosporidium* risk assessment and monitoring review; 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".

Event Case Studies

• Killyhevlín WTW Event – Non Incident

Prolonged heavy rainfall in late November 2009 led to an unprecedented high water level in Lough Erne. This caused a potential risk of flood water entering the treated water tank which would have affected the drinking water supply to the Enniskillen area.

NI Water took immediate remedial action and put in place a number of control measures and manned the site continuously during the course of the event to ensure that drinking water quality was not compromised. NI Water also participated in inter-agency coordination efforts to respond to the flooding situation around Upper and Lower Lough Erne.

The DWI was notified immediately and updated on the situation regularly during the event.

The DWI assessment of the event was that the control measures put in place by NI Water staff prevented water quality problems including the potential for the loss of supply to 85,000 people.

• Dunore Point WTW Precautionary Boil Water Notice following *E. coli* and coliform exceedances – Incident

Final Water samples lifted from Dunore Point WTW on the 12th April 2009 tested positive for total coliforms and *E. coli*.

The results were received by NI Water on 13th April and the situation was immediately discussed with the Public Health Authority Consultant for Communicable Disease Control (CCDC). He advised that a precautionary Boil Water Notice should be issued quickly to all customers supplied from Dunore Point WTW while investigations were undertaken to determine the cause of the sample exceedances.

A category 1 Major Incident Team was established on 13th April in order to co-ordinate the NI Water response to the incident and liaise with other agencies.

After extensive investigations and enhanced sampling of the Dunore Point final water and distribution area, the initial samples were subsequently shown to be unrepresentative of Dunore Point final water. The Precautionary Boil Water notice was therefore removed on 14th April 2009 on the instruction of the CCDC.

Communication was maintained with the Public Health Authority and DWI throughout the event.

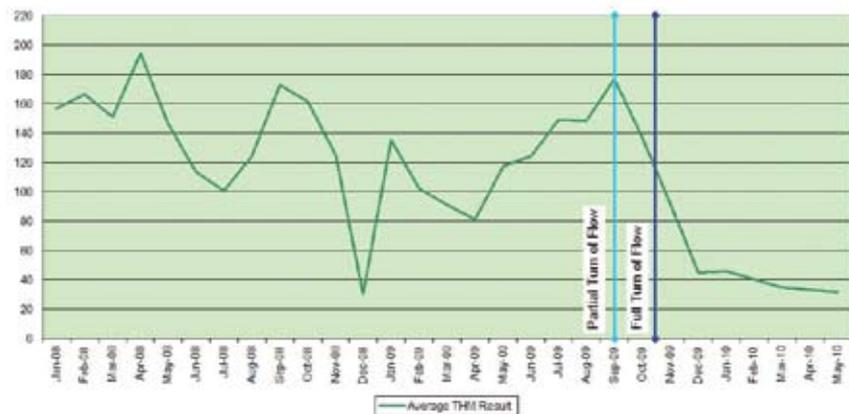
A full list of all events in 2009 is detailed in Appendix 5.

Regulatory Enforcement

DWI implemented 4 "Consideration of Provisional Enforcement Orders" (CPEO) during 2008 and continued to monitor progress on their implementation during 2009. These related to the reduction of THM levels in the areas supplied by Derg and Killylane Water Treatment Works, the level of aluminium entering supply from Carmoney Water Treatment Works and the level of iron found in the Dorisland distribution area.

The 2007 CPEO issued for Seagahan Water Treatment Works for the reduction of THM levels in the area supplied remains in place during the commissioning phase of the works upgrade which was completed in 2009. The upgrade to the works has had the required improvement on drinking water quality, and it is anticipated that this CPEO will be closed during 2010.

Seagahan WTW
Effect on average THM results at customer tap following upgrade to WTW



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

The system uses ruggedised PDAs which incorporate GPRS/GSM for communication, a barcode scanner to scan the labels on sample bottles and GPS 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 eliminates the possibility of transcription errors and gives an enhanced audit trail.

Water Quality Summary

NI Water Sites in Service

During 2009, the numbers of NI Water sites in service were:

Location Type	Number in Service
Water Treatment Works	36
Service Reservoirs	340
Water Supply Zones	60
Authorised Supply Points (see glossary)	34

Overall Water Quality

235,468 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 2009. 235,225 of these tests complied with the regulatory standards giving an overall percentage compliance of 99.90% (not including Authorised Departures). Under the Regulations a subset of these parameters is used to assess Mean Zonal Compliance at customer tap (as set out in Appendix 3).

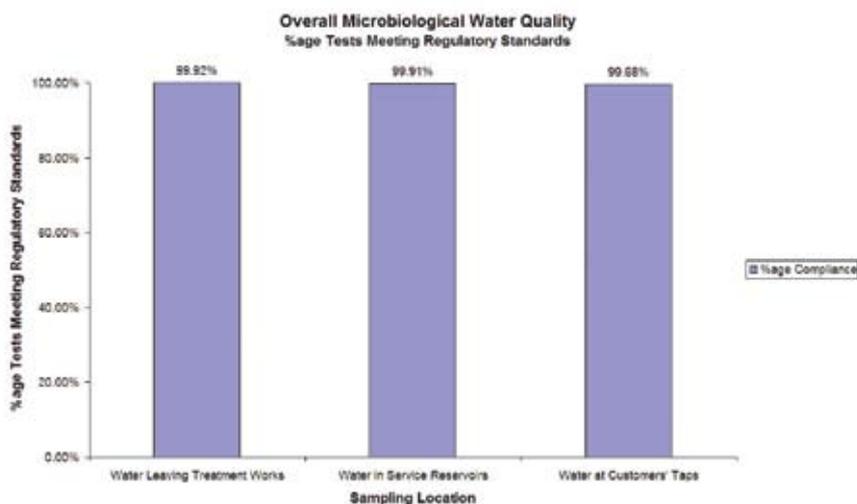
Microbiological Quality

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.

A summary of the microbiological quality of water supplied in 2009 is given below.



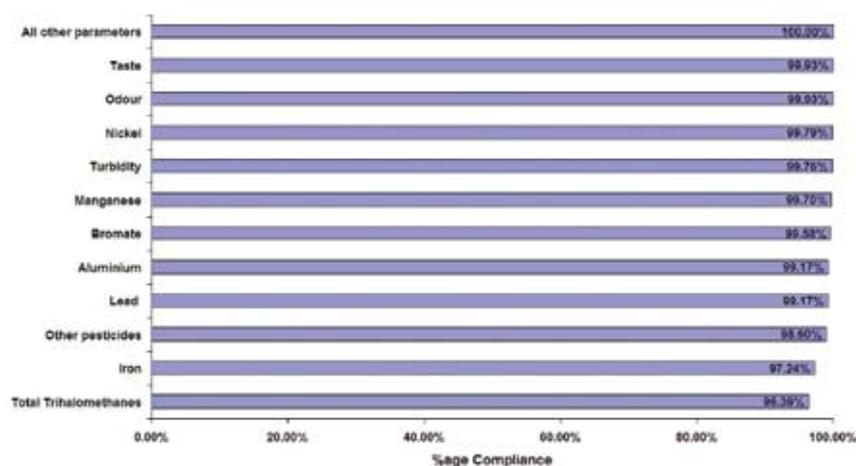
Physical and Chemical Quality at Customer tap

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.

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 2009.

- 39,849 mandatory physical and chemical tests were carried out on water samples taken at customers' taps or authorised supply points in the year 2009. 39,709 of these tests complied with the regulatory standards giving a compliance of 99.65%.

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	15,492	13	99.92	13	99.92
Chemical	298	0	100.00	0	100.00
Indicator parameters	38,755	41	99.89	41	99.89
Total	54,545	54	99.90	54	99.90
Water in Service Reservoirs					
Bacteriological Analysis	34,858	31	99.91	31	99.91
Indicator parameters	69,714	0	100.00	0	100.00
Total	104,572	31	99.97	31	99.97
Water at Customers' Taps or Authorised Supply Points					
Bacteriological Anal inc Coliforms	12,004	39	99.68	39	99.68
Zone Chemical Analysis	23,512	98	99.58	115	99.51
Supply Point Chemical Analysis	16,337	3	99.98	3	99.98
Indicator parameters	24,498	1	100.00	1	100.00
Total	76,351	141	99.82	158	99.79
Total Mandatory Parameters	102,501	184	99.82	201	99.80
Total Indicator Parameters	132,967	42	99.97	42	99.97
Overall Water Quality Total	235,468	226	99.90	243	99.90

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 programme of scouring 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 the implementation of targeted water 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, both the customer and the local Environmental Health Officer 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. A leaflet on lead in drinking water is available from the NI Water website at www.niwater.com/informationleaflets.asp

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 for each water treatment works and agreed with the Drinking Water Inspectorate for Northern Ireland.

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

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 algacides. 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 46 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 exceedance was for one of the more commonly used pesticides – MCPA.

NI Water is engaged on an ongoing series of catchment management plans as part of the overall 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 (and hence the use of 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.

Other Parameters

Other single exceedances were recorded for nickel, odour and taste. These were investigated and no repeat exceedances were recorded.

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 Northern Ireland Water for the period 2010 to 2013. NI Water has developed a business plan (NIAMP3) to deliver this investment. This is largely a continuation of the investment plans made during the period 2007 to 2010. The plan includes laying 900km of watermains, 73km of sewers and the upgrading of water and wastewater treatment works, service reservoirs, combined sewer overflows and pumping stations. These investments will seek to improve our water and wastewater compliance as well as improving levels of service to customers by, for example, reducing the number of properties at risk of internal flooding, or 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.

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 Asset Management Research & Development (R&D) section, undertakes a programme of applying research and technology development. This uses innovation, where appropriate, 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, ITC, Regulation and Sustainability.

The R&D section also manages projects which require industry specialists to provide expertise to bridge knowledge gaps and solve problems specific to NI Water. The section now includes the Technology Team which will help drive innovation and the implementation of research outputs throughout the business to ensure ongoing best practice and efficiencies.

Through the R&D section NI Water collaborates with, and supports local and UK university research. We are members of Queens University Environmental Science and Technology Research Centre (QUESTOR) which is an international environmental research organisation based at Queens University Belfast.

Just recently we have benefited from a substantial grant as a result of this collaboration and we will receive a fully financed post doctorate researcher for two years starting with NI Water in the autumn of this year. The researcher will be employed on the development of our carbon management strategy.

Water Supply (Water Fittings) Regulations (NI) 2009

This report incorporates the first annual return for the Water Supply (Water Fittings) Regulations (NI) 2009 for the period August 3rd 2009 to 31st March 2010. The Water Supply (Water Fittings) Regulations (NI) 2009 are hereafter referred to in this section of the Water Quality report as the Water Regulations. This report also seeks to highlight how Water Regulations are enforced, promoted and managed through NI Water.

A draft NI Water strategy for Water Regulation management is currently being developed and once approved it will form the basis for all future activities associated with obligations under the Water Regulations.

The key messages from this work are set out below:

In the last 12 months NI Water has:

- Set up a dedicated Water Regulation team and successfully trained all appropriate staff to the City and Guilds level. This is a similar approach to other water companies in the UK.
- Procured and implemented the use of a proprietary software system known as Connect 2 to drive a proactive Water Regulation inspection programme which records customer notifications, inspection contraventions and remedial action requirements.
- Allocated a Standard Industrial Classification (SIC) to circa 80,000 non domestic customers premises which has been used to generate Fluid Category (FC) codes. These in turn will be used to drive a proactive risk based programme of inspection work.

- Chosen to work in partnership with the trade association known as the Scottish and Northern Ireland Plumbing Employers Federation (SNIPEF). SNIPEF has with the agreement and permission of NI Water extended the running of its approved plumbing contractors' scheme to Northern Ireland. This is known as the Plumbing Industry Licensing Scheme (PILS). NI Water recommends that customers when carrying out any plumbing installations or alterations should consider using an approved plumbing contractor. Details of these can be found by referring to the NI Water web site (www.niwater.com) and navigating to the section on Water Regulations.

During the next twelve months NI Water will:

- Further develop and refine the annual Water Regulation return report in agreement with (DRD) Water Policy Division. This will be published annually in the Drinking Water Quality Report.
- Finalise the production and publication of a Water Regulation leaflet and web pages associated with Water Regulations.
- Further develop Water Regulation policy and procedures and assess if adequate resources are in place to implement the strategy.
- Refine both the proactive and reactive inspection programmes using Connect 2 as the operation of the systems and processes are refined over the next reporting year.

Water Supply (Water Fittings) Regulations 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 Supply (Water Fittings) 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 compliance no later than the 30th June every year.

The 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.

For the purpose of this return:

- DRD Water Policy Division (WPD) is deemed to be the Regulator for all activities associated with these 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) 2009

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
<i>Enterococci</i>	0	number/100ml	Customers' taps
<i>Escherichia coli (E. coli)</i>	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
Hydrogen ion	10	pH value	Customers' taps
	6.5 (minimum)	pH value	
Iron	200	µg Fe/l	Customers' taps
Manganese	50	µg Mn/l	Customers' taps
Odour	3 at 25°C	Dilution number	Customers' taps
Sodium	200	mg Na/l	Customers' taps
Taste	3 at 25°C	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
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:

mg/l means one part in a million.
µg/l means one part in a thousand million.

Parameter:

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

Appendix 2

2009 Authorised Departures under Regulation 37

Site Code	Site Name	Parameter	Units	AD Value	AD Start	AD End
W2501	Altmore	MCPA	ug/l	0.5	22/11/2007	24/12/2009
ZN0303	Dunore Point Ballymena	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZN0401	Dunore Point Antrim	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZN0501	Moyola Magherafelt	Total Trihalomethanes	ug/l	150	01/01/2007	16/07/2009
ZN0503	Unagh Cookstown	Total Trihalomethanes	ug/l	150	01/01/2007	16/07/2009
ZN0704	Lough Bradan Drumquin	Total Trihalomethanes	ug/l	150	07/08/2007	06/08/2010
ZN0706	Lough Macrory Killyclogher	Total Trihalomethanes	ug/l	150	07/08/2007	06/08/2010
ZN0901	Altmore Cabragh	Total Trihalomethanes	ug/l	150	01/01/2007	24/12/2009
ZN0902	Altmore Donaghmore	Total Trihalomethanes	ug/l	150	01/01/2007	24/12/2009
ZN1102	Seagahan Armagh	Total Trihalomethanes	ug/l	150	01/01/2007	24/12/2009
ZS0101	Belfast Ballygomartin North	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0102	Belfast Ballygomartin South	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0103	Belfast Ballyhanwood	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0104	Belfast Breda North	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0105	Belfast Breda South	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0106	Belfast North	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0107	Belfast Oldpark	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0108	Belfast Purdysburn	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0110	Dunore Point Glengormley	Total Trihalomethanes	ug/l	150	01/01/2007	15/10/2009
ZS0502	Forked Bridge Dunmurry	Total Trihalomethanes	ug/l	150	01/01/2007	24/09/2009
ZS0503	Forked Bridge Stoneyford	Total Trihalomethanes	ug/l	150	01/01/2007	24/09/2009
ZS0801	Castor Bay Ardress	Total Trihalomethanes	ug/l	150	01/01/2007	24/09/2009
ZS0802	Castor Bay Lurgan	Total Trihalomethanes	ug/l	150	01/01/2007	24/09/2009
ZS0803	Castor Bay Portadown	Total Trihalomethanes	ug/l	150	01/01/2007	24/09/2009

Programmes of Work to meet Authorised Departure Requirements

During 2009, certain planned and remedial programmes of work to meet Authorised Departure requirements continued. These were:

Water Treatment Works	Zone Code Affected	Zone Name Affected
Altmore WTW	ZN0901	Altmore Cabragh
	ZN0902	Altmore Donaghmore
Dunore Point WTW	ZS0101	Belfast Ballygomartin North
	ZS0102	Belfast Ballygomartin South
	ZS0103	Belfast Ballyhanwood
	ZS0104	Belfast Breda North
	ZS0105	Belfast Breda South
	ZS0106	Belfast North
	ZS0107	Belfast Oldpark
	ZS0108	Belfast Purdysburn
	ZN0401	Dunore Point Antrim
	ZN0303	Dunore Point Ballymena
ZS0110	Dunore Point Glengormley	
Castor Bay WTW	ZS0801	Castor Bay Ardress
	ZS0802	Castor Bay Lurgan
	ZS0803	Castor Bay Portadown
	ZS0502	Forked Bridge Dunmurry
	ZS0503	Forked Bridge Stoneyford
Lough Bradan WTW	ZN0704	Lough Bradan Drumquin
	ZN0706	Lough Macrory Killyclogher
Moyola WTW	ZN0501	Moyola Magherafelt
	ZN0503	Unagh Cookstown
Seagahan WTW	ZN1102	Seagahan Armagh

Appendix 3

Water Quality Report for Water Supply Zones

Schedule 1 parameters	2009 Samples	No > PCV	% > PCV	No > AD	% > AD
Enterococci	460	0	0.00%	--	--
<i>E. coli</i>	5772	2	0.03%	--	--
Aluminium	2036	20	0.98%	--	--
Antimony	460	0	0.00%	--	--
Arsenic	460	0	0.00%	--	--
Benzo (a) pyrene	460	0	0.00%	--	--
Bromate	460	1	0.22%	--	--
Cadmium	460	0	0.00%	--	--
Chromium	460	0	0.00%	--	--
Colour	2036	0	0.00%	--	--
Copper	460	0	0.00%	--	--
Hydrogen ion	2036	0	0.00%	--	--
Iron	2036	43	2.11%	--	--
Lead	460	4	0.87%	--	--
Manganese	2036	8	0.39%	--	--
Nickel	460	1	0.22%	--	--
Nitrate	460	0	0.00%	--	--
Nitrite	460	0	0.00%	--	--
Odour	2036	1	0.05%	--	--
Selenium	460	0	0.00%	--	--
Sodium	460	0	0.00%	--	--
Taste	2036	1	0.05%	--	--
PAH - Sum of four substances	460	0	0.00%	--	--
Total Trihalomethanes	784	30	3.83%	5	0.64%
Turbidity	2036	6	0.29%	--	--

Indicator parameters	2009 Samples	No > SPEC	% > SPEC
Total Coliforms	5772	37	0.64%
Total - Residual disinfectant	5772	0	0.00%
Free - Residual disinfectant	5772	0	0.00%
Colony Counts 37 (48hrs)	2036	0	0.00%
Colony Counts 22	2036	0	0.00%
Hydrogen ion (indicator) pH value	2036	0	0.00%
Ammonium	2036	0	0.00%

Water Quality Report for Authorised Supply Points

Schedule 1 parameters	2009 Samples	No > PCV	% > PCV	No > AD	% > AD
Benzene	297	0	0.00%	--	--
Boron	297	0	0.00%	--	--
Cyanide	295	0	0.00%	--	--
1,2 Dichloroethane	297	0	0.00%	--	--
Fluoride	297	0	0.00%	--	--
Mercury	297	0	0.00%	--	--
Aldrin	297	0	0.00%	--	--
Dieldrin	297	0	0.00%	--	--
Heptachlor	297	0	0.00%	--	--
Heptachlor Epoxide	297	0	0.00%	--	--
Pesticides - Total Substances	297	0	0.00%	--	--
Tetrachloroethene/ Trichloroethene - Sum	297	0	0.00%	--	--
Tetrachloromethane	297	0	0.00%	--	--
All other analysed Pesticides	12478	3	0.02%	0.00	0.00%

Indicator parameters	2009 Samples	No > SPEC	% > SPEC
Clostridium perfringens (sulph red)	2941	1	0.03%
Chloride	297	0	0.00%
Conductivity	2946	0	0.00%
Sulphate	297	0	0.00%
Total Organic Carbon	297	0	0.00%
Total Indicative Dose	34	0	0.00%
Tritium	34	0	0.00%

Water Quality Report for Water Treatment Works

Schedule 1 parameters	2009 Samples	No > PCV	% > PCV
Total Coliforms	7746	9	0.12%
<i>E. coli</i>	7746	4	0.05%
Nitrite	298	0	0.00%

Indicator parameters	2009 Samples	No > SPEC	% > SPEC
Turbidity	7751	41	0.53%
Total - Residual disinfectant	7751	0	0.00%
Free - Residual disinfectant	7751	0	0.00%
Colony Counts 37 (48hrs)	7751	0	0.00%
Colony Counts 22	7751	0	0.00%

Water Quality Report for Service Reservoirs

Schedule 1 parameters	2009 Samples	No > PCV	% > PCV
Total Coliforms	17429	24	0.14%
<i>E. coli</i>	17429	7	0.04%

Indicator parameters	2009 Samples	No > SPEC	% > SPEC
Colony Counts 22	17429	0	0.00%
Colony Counts 37 (48hrs)	17429	0	0.00%
Total - Residual disinfectant	17429	0	0.00%
Free - Residual disinfectant	17429	0	0.00%

2009 Mean Zonal Compliance

Parameter	Number of Samples	No of fails at zone / supply point	No of zones / supply points with fails	% Zonal Compliance
Colour	2036	0	0	100.00
Turbidity	2036	6	6	99.76
Odour	2036	1	1	99.93
Taste	2036	1	1	99.93
Hydrogen ion	2036	0	0	100.00
Sodium	460	0	0	100.00
Nitrate	460	0	0	100.00
Nitrite	460	0	0	100.00
Nitrite/Nitrate Formula	460	0	0	100.00
Aluminium	2036	20	16	99.17
Iron	2036	43	25	97.24
Manganese	2036	8	7	99.70
Copper	460	0	0	100.00
Fluoride	297	0	0	100.00
Arsenic	460	0	0	100.00
Cadmium	460	0	0	100.00
Cyanide	295	0	0	100.00
Chromium	460	0	0	100.00
Mercury	297	0	0	100.00
Nickel	460	1	1	99.79
Lead	460	4	4	99.17
Antimony	460	0	0	100.00
Selenium	460	0	0	100.00
Total Pesticides	297	0	0	100.00
PAH - Sum of four substances	460	0	0	100.00
<i>E. coli</i>	5772	2	2	99.95
<i>Enterococci</i>	460	0	0	100.00
Boron	297	0	0	100.00
Benzo(a)pyrene	460	0	0	100.00
Tetrachloromethane	297	0	0	100.00
Tetrachloroethene/Trichloroethene - Sum	297	0	0	100.00
Total Trihalomethanes	784	30	9	96.39
1,2 Dichloroethane	297	0	0	100.00
Benzene	297	0	0	100.00
Bromate	460	1	1	99.58
Aldrin	297	0	0	100.00
Dieldrin	297	0	0	100.00
Heptachlor	297	0	0	100.00
Heptachlor epoxide	297	0	0	100.00
Pesticides - other substances (P999)*	12478	3	2	98.90
Total Number of Samples / Fails	46541	120		
Mean Zonal Compliance %				99.74

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 98.5% of Northern Ireland's population receive public water supplies.

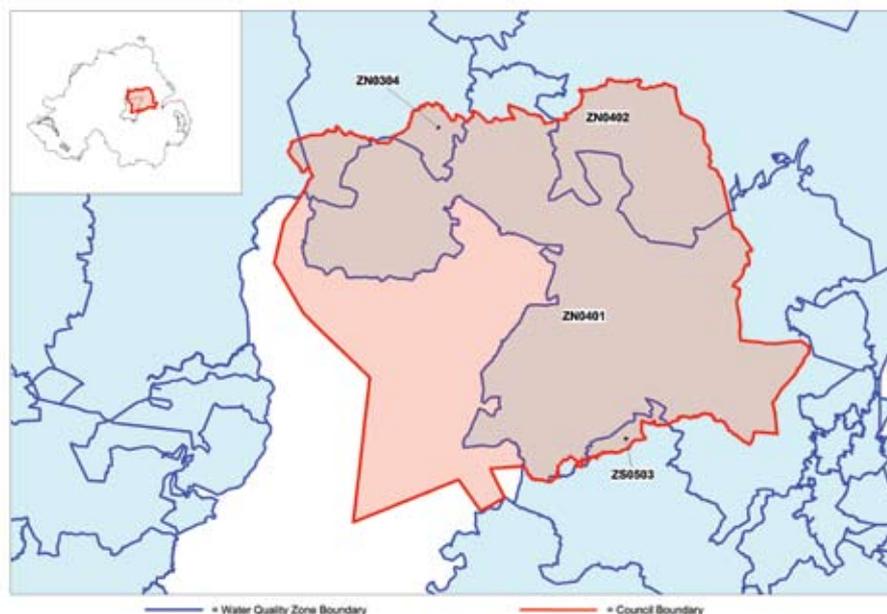
In a number of cases water supply zones overlap district council boundaries. The council reports indicate which water supply zones are wholly or partially contained within the council areas – including those zones which may have a relatively small area within the council area.

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. The information is based on samples taken randomly from customers' taps in each water supply zone and from planned samples at authorised supply points.

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

Variations in water quality compliance performance continue across Northern Ireland, reflecting the need for the completion of current and future planned Capital Work Programmes.

Antrim Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Antrim Council MZC	99.73%

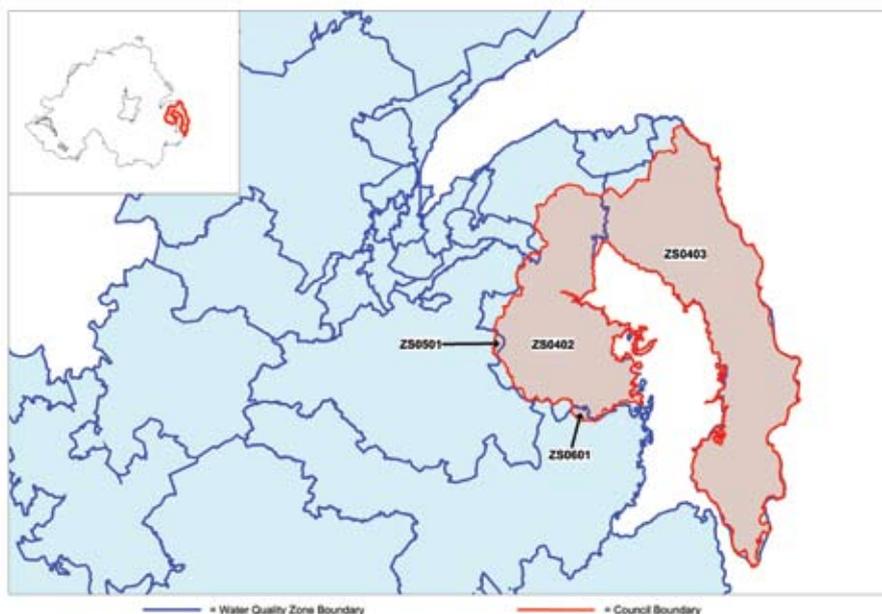
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0304	Glarryford Ahoghill	ZN0501	Moyola Magherafelt
ZN0401	Dunore Point Antrim	ZS0503	Forked Bridge Stoneyford
ZN0402	Killylane Ballynure		

2009 water quality Capital Works Programmes affecting the council area:

Tardree Zone Watermain Improvements
 Loughbeg Road, Toomebridge, Watermain Extension
 Craigstown Road, Randalstown, Watermain Extension
 Castle Road, Antrim, Watermain
 Birchill Road Antrim Watermain
 Dublin Road/ Antrim Road, Aldergrove, Replacement Watermain
 Clonkeen, Randalstown, Replacement Watermain
 Enkalon Industrial Park, Randalstown Road, Antrim, Watermain Extension
 Castle Road/Whitehill Road Randalstown Watermain Replacement
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Ards Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Ards Council MZC	99.92%

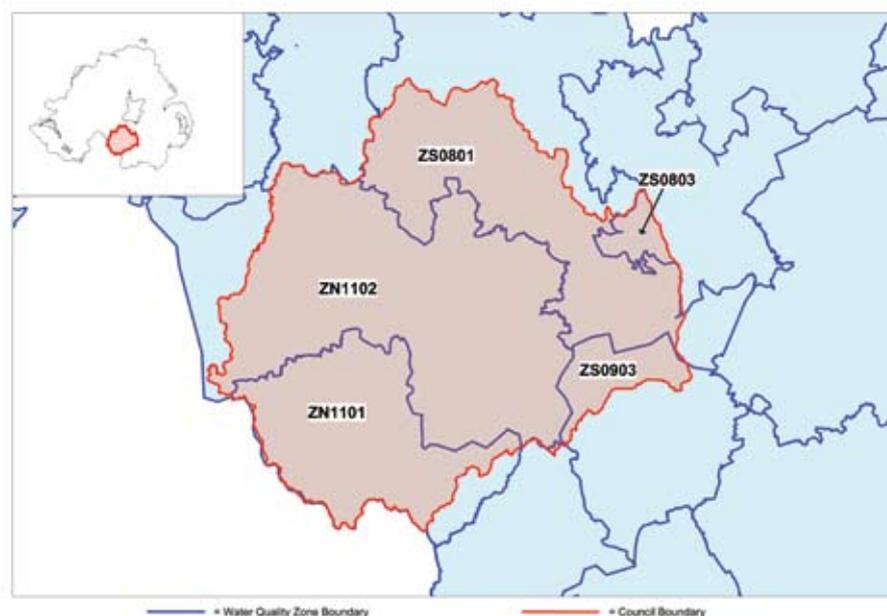
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0103	Belfast Ballyhanwood	ZS0403	Drumaroad Peninsula
ZS0401	Drumaroad Bangor	ZS0501	Drumaroad Lisburn
ZS0402	Drumaroad Comber	ZS0601	Drumaroad Ballynahinch

2009 water quality Capital Works Programmes affecting the council area:

- Metering and Treatment of WTW effluents
- Service Reservoir Enhanced Security
- North Down Strategic Trunk Watermains
- Bangor Outer Zone Watermain Improvements
- Ards North Zone Watermain Improvements
- Newtownards Town Zone Watermain Improvements
- Ballygowan Zone Watermain Improvements
- THM Reduction
- Newtownards Southern Relief Road
- Portaferry, Ballyquinton area Watermain Replacement

Armagh City & District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Armagh City & Council MZC	99.51%

2009 water supply zones wholly or partially within the council area:

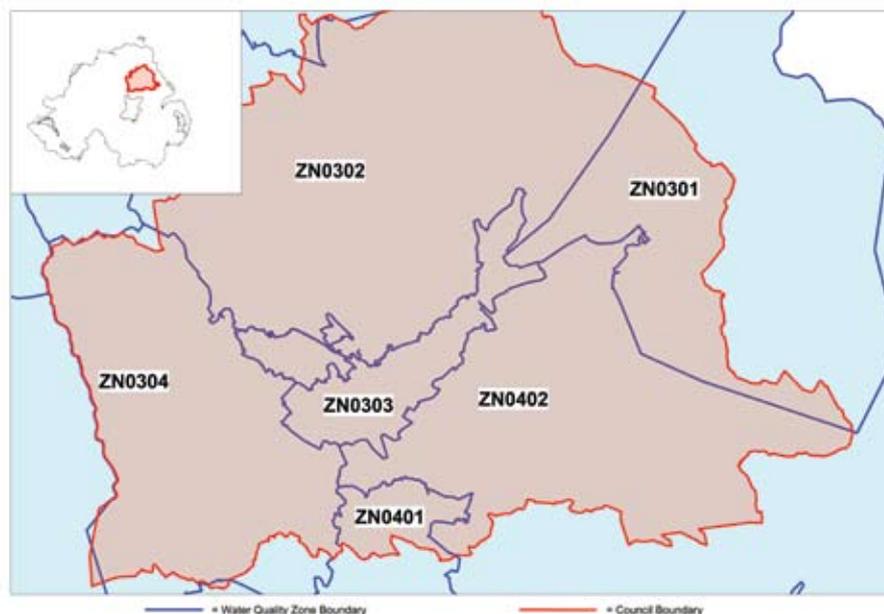
Zone Code	Zone Name	Zone Code	Zone Name
ZN1001	Shanmoy Dungannon	ZS0803	Castor Bay Portadown
ZN1101	Clay Lake Keady	ZS0903	Fofanny Jerrettspass
ZN1102	Seagahan Armagh	ZS1001	Carran Hill Crossmaglen
ZS0801	Castor Bay Ardress		

2009 water quality Capital Works Programmes affecting the council area:

Altnahinch and Seagahan WTW's Residual Sludge Disposal
 Clay Lake Zone Watermain Improvements
 Seagahan Zone Watermain Improvements
 Crewcat and Portadown Road Watermain Improvements
 Clay Lake WTW
 Armagh City Zone Watermain Improvements
 Seagahan WTW
 Ballyloughan Road, Hamiltonsbawn, Armagh Watermain Extension
 Castor Bay, Armagh Zone Watermain Improvements
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Edenaveys Service Reservoir

A major part of the Armagh Council area is supplied by Seagahan WTW. This WTW was upgraded towards the end of 2009 and will significantly improve the quality of water in the area supplied.

Ballymena Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Ballymena Council MZC	99.71%

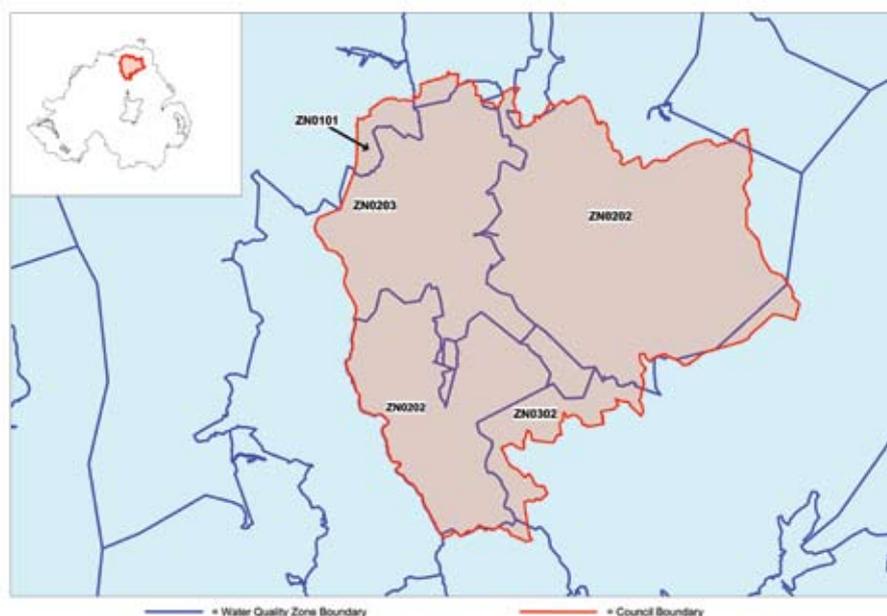
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0202	Altnahinch Bushmills	ZN0304	Glarryford Ahoghill
ZN0301	Buckna Glenarm	ZN0401	Dunore Point Antrim
ZN0302	Dungonnell Glarryford	ZN0402	Killylane Ballynure
ZN0303	Dunore Point Ballymena	ZN0501	Moyola Magherafelt

2009 water quality Capital Works Programmes affecting the council area:

Tardree Zone Watermain Improvements	Loan Command SR, Inlet Watermain
Ballymena North Zone Watermain Improvements	Aughnahoy Road, Portglenone Watermain Extension
Tuftarney SR To Clough SR Trunk Main	Garstings Hill SR, Ballymena, Water Pumping station.
Clough Zone Watermain Improvements	Old Portglenone Road, Portglenone, Watermain Trunk
Cargan Zone Watermain Improvements	Tullaghans SR, Dunloy, New Reservoir
Northern Key Transport Corridor, Ballymena Watermain Scheme	Woodtown Road, Ballymena, Watermain Replacement
Old Ballymoney Road, Ballymena, Replacement Watermain	Glenlough SR, Ballymoney, New SR
Kildowney Hill, Glarryford, Replacement Watermain	Metering and Treatment of WTW effluents
Dungonnell Command Service Reservoir	Service Reservoir Enhanced Security
Carnlough Road, Broughshane, Watermain Replacement	Security improvements at Key point Installations
Frys Road, Ballymena New Watermain	

Ballymoney Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Ballymoney Council MZC	99.79%

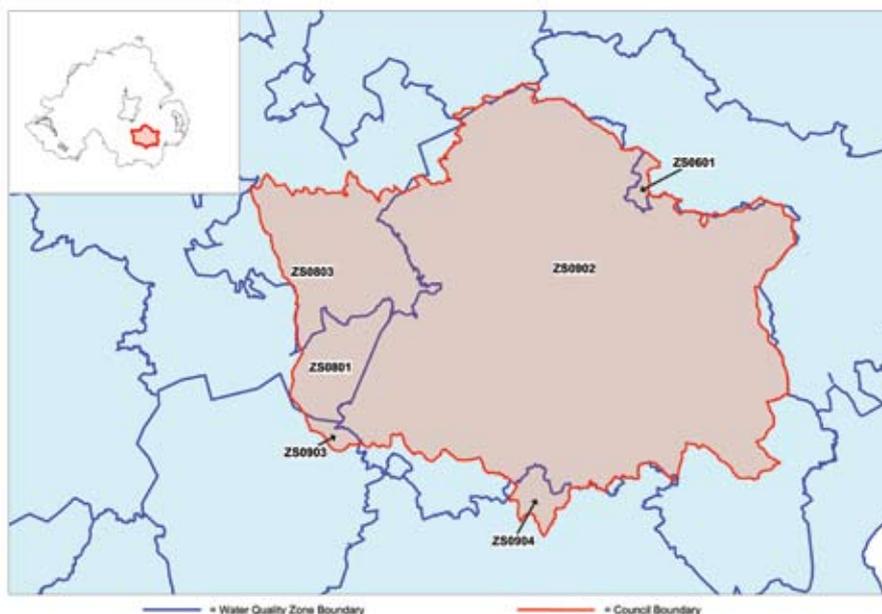
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0203	Ballinrees Ballymoney
ZN0201	Alcrossagh Ballycastle	ZN0302	Dungonnell Glarryford
ZN0202	Altnahinch Bushmills	ZN0304	Glarryford Ahoghill

2009 water quality Capital Works Programmes affecting the council area:

Cargan Zone Watermain Improvements
 Tullaghans SR, Dunloy, New Reservoir
 Altnahinch Zone Watermain Improvements
 Altnahinch and Seagahan WTW's Residual Sludge Disposal
 Greystone Crescent, Dervock Replacement Watermain
 Portballintrae Zone Watermain Improvements
 Loughguile Zone Watermain Improvements
 Rasharkin Zone Watermain Improvements
 Burnquarter Road (West), Ballymoney, Watermain Extension
 Lisboy Road Dunloy Watermain Extension
 Glenlough SR, Ballymoney, New SR
 Altnahinch WTP, Ballymoney, New CWB.
 Ballynarry Road, Derrykeighan, Watermain Extension
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Banbridge District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Banbridge Council MZC	99.95%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0601	Drumaroad Ballynahinch	ZS0902	Fofanny Dromore
ZS0801	Castor Bay Ardross	ZS0903	Fofanny Jerrettspass
ZS0802	Castor Bay Lurgan	ZS0904	Fofanny Mourne
ZS0803	Castor Bay Portadown		

2009 water quality Capital Works Programmes affecting the council area:

Ballydougan to Newry Main Link Reinforcement
 Dublinhill Road Dromore Watermain Extension
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Lisburn to R.O.I. Border Trunk Road Improvements
 Fofanny/Banbridge Zone Watermain Improvements
 Watermain Replacements - Banbridge phase 2
 Shot Lane / Fedney Hill Road Banbridge Watermains Upgrade

Belfast City Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Belfast City Council MZC	99.80%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0108	Belfast Purdysburn
ZS0101	Belfast Ballygomartin North	ZS0109	Dorisland Whiteabbey
ZS0102	Belfast Ballygomartin South	ZS0110	Dunore Point Glengormley
ZS0103	Belfast Ballyhanwood	ZS0402	Drumroad Comber
ZS0104	Belfast Breda North	ZS0501	Drumroad Lisburn
ZS0105	Belfast Breda South	ZS0502	Forked Bridge Dunmurry
ZS0106	Belfast North	ZS0503	Forked Bridge Stoneyford
ZS0107	Belfast Oldpark		

2009 water quality Capital Works Programmes affecting the council area:

- Metering and Treatment of WTW effluents
- West Belfast / North Lisburn
- Castlereagh Zone Watermain Improvements
- Service Reservoir Enhanced Security
- Security improvements at Key point Installations
- Lead Service Pipe Replacement Scheme
- CTM Extension - Barnetts Park to Purdysburn
- Mains replacement, Belfast Public Realm Phase 1 Area 2
- Belfast City Centre Zone Watermain Improvements
- North Down Strategic Trunk Watermains

Carrickfergus Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Carrickfergus Council MZC	99.44%

2009 water supply zones wholly or partially within the council area:

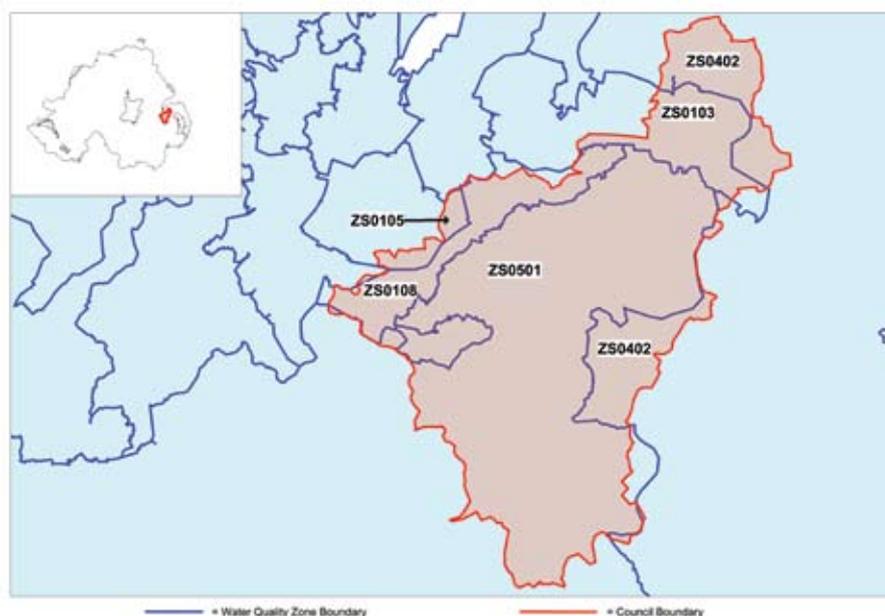
Zone Code	Zone Name	Zone Code	Zone Name
ZN0402	Killylane Ballynure	ZS0201	Dorisland Carrick
ZS0109	Dorisland Whiteabbey		

2009 water quality Capital Works Programmes affecting the council area:

Metering and Treatment of WTW effluents
 Woodburn
 Carrickfergus Zone Watermain Improvements
 Service Reservoir Enhanced Security
 Whiteabbey Lower, Mains Replacement Newtownabbey

Much of the area in the Carrickfergus council area is supplied by Killylane WTW. This WTW is scheduled to be upgraded during the PC10 period and should significantly improve the quality of water in the area supplied.

Castlereagh Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Castlereagh Council MZC	99.85%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0102	Belfast Ballygomartin South	ZS0108	Belfast Purdysburn
ZS0103	Belfast Ballyhanwood	ZS0402	Drumaroad Comber
ZS0104	Belfast Breda North	ZS0501	Drumaroad Lisburn
ZS0105	Belfast Breda South		

2009 water quality Capital Works Programmes affecting the council area:

Metering and Treatment of WTW effluents
 Purdysburn East Zone Watermain Improvements
 Castlereagh Zone Watermain Improvements
 Service Reservoir Enhanced Security
 North Down Strategic Trunk Watermains

Coleraine Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC 99.74%

Coleraine Council MZC 99.73%

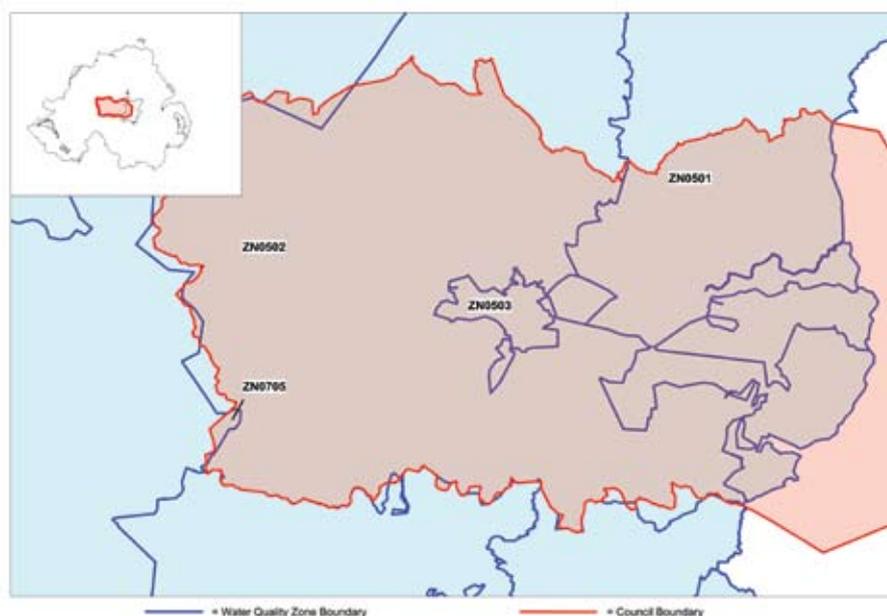
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0601	Ballinrees Limavady
ZN0202	Altnahinch Bushmills	ZN0602	Brishey Limavady East
ZN0203	Ballinrees Ballymoney	ZN0606	Stradreagh Aghanloo
ZN0501	Moyola Magherafelt		

2009 water quality Capital Works Programmes affecting the council area:

Lough Fea Zone Watermain Improvements
 Ballinrees Central Zone Watermain Improvements
 Portballintrae Zone Watermain Improvements
 Bushtown Road, Coleraine, Watermain Extension
 Ballynarry Road, Derrykeighan, Watermain Extension
 Drumcroon Road, Coleraine, Replacement Watermain
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Cookstown District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Cookstown Council MZC	99.72%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0501	Moyola Magherafelt	ZN0705	Lough Macrory Beragh
ZN0502	Lough Fea Cookstown	ZN0902	Altmore Donaghmore
ZN0503	Unagh Cookstown	ZN1001	Shanmoy Dungannon

2009 water quality Capital Works Programmes affecting the council area:

Lough Fea Zone Watermain Improvements
 Cookstown Zone Watermain Improvements
 Stewartstown Zone Watermain Improvements
 Orritor Craigs Trunk Watermain Replacement
 Dunmore Lane, Cookstown, Watermain Extension
 Carland Bridge (Cookstown Rd) Road Realignment
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Craigavon Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Craigavon Council MZC	99.93%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0801	Castor Bay Ardress	ZS0803	Castor Bay Portadown
ZS0802	Castor Bay Lurgan	ZS0902	Fofanny Dromore

2009 water quality Capital Works Programmes affecting the council area:

- Castor Bay / Magheraliskmisk Zone Watermain Improvements
- Castor Bay/Craigavon North Watermain Rehabilitation
- Castor Bay/Craigavon South Zone Watermain Rehabilitation
- Ballydougan to Newry Main Link Reinforcement
- Castor Bay to Dungannon Strategic Trunk Mains
- Lurgan & Portadown Public Realm Associated Infrastructure Improvements
- Metering and Treatment of WTW effluents
- Service Reservoir Enhanced Security

Derry City Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Derry City Council MZC	99.61%

2009 water supply zones wholly or partially within the council area:

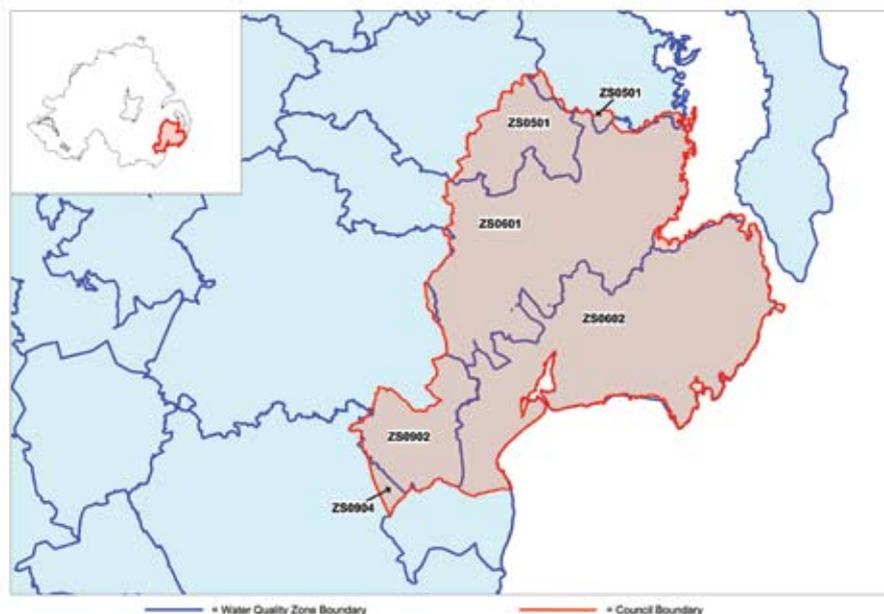
Zone Code	Zone Name	Zone Code	Zone Name
ZN0603	Carmony Eglinton	ZN0605	Creggan Derry
ZN0604	Caugh Hill Dungiven	ZN0701	Derg Strabane

2009 water quality Capital Works Programmes affecting the council area:

Waterside Zone Watermain Improvements
 Carmony East Zone Watermain Improvements
 Limavady Zone Watermain Improvements
 Corrody to Prehen trunk Watermain Replacement
 Carmony to Strabane Strategic Link Watermain
 Carmony Water Treatment Works Upgrade
 Reservoir Rehabilitation Western Area Phase 1
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Security improvements at Key point Installations

Much of the Derry City Council area is supplied from Carmony WTW. A major upgrade of this WTW has commenced with completion due in spring 2011. This will significantly improve the water quality in this area.

Down District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Down Council MZC	99.88%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0402	Drumaroad Comber	ZS0602	Drumaroad Downpatrick
ZS0402	Drumaroad Comber	ZS0902	Fofanny Dromore
ZS0501	Drumaroad Lisburn	ZS0904	Fofanny Mourne
ZS0601	Drumaroad Ballynahinch		

2009 water quality Capital Works Programmes affecting the council area:

Fofanny WTW EC Compliance
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Ballykine Gravity Distribution
 Newcastle Service Res
 Mid Down Zone Watermain Improvements
 Castlewellan Road & Dundrum Road, Clough Watermains

Dungannon and South Tyrone Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Dungannon and South Tyrone Council MZC	99.47%

2009 water supply zones wholly or partially within the council area:

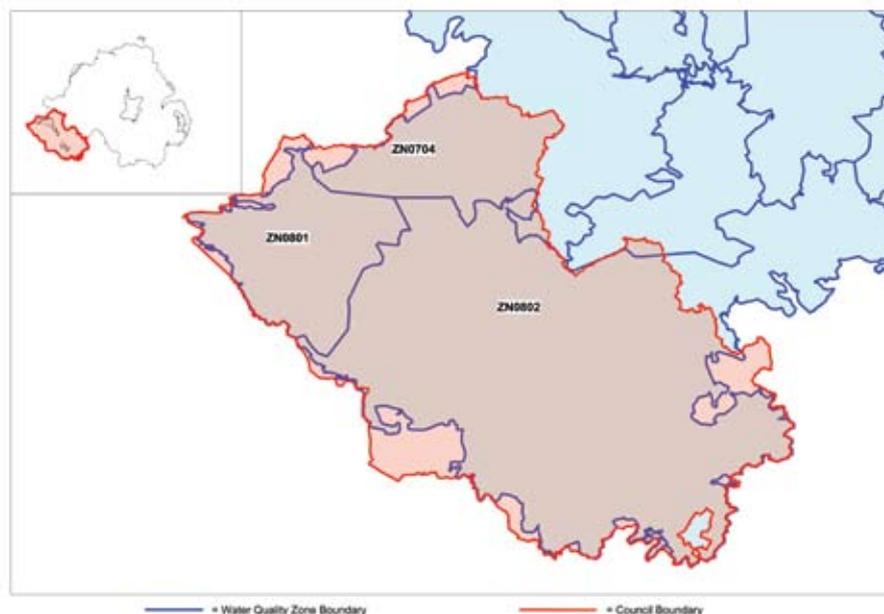
Zone Code	Zone Name	Zone Code	Zone Name
ZN0502	Lough Fea Cookstown	ZN0902	Altmore Donaghmore
ZN0705	Lough Macrory Beragh	ZN1001	Shanmoy Dungannon
ZN0706	Lough Macrory Killyclogher	ZN1102	Seagahan Armagh
ZN0802	Killyhevlín Enniskillen	ZS0801	Castor Bay Address
ZN0901	Altmore Cabragh		

2009 water quality Capital Works Programmes affecting the council area:

Glencuil to Cabragh Strategic Link Watermain
 Carland Bridge (Cookstown Rd) Road Realignment
 Carland Service Reservoir
 Castor Bay/ Shanmoy Zone
 Ballydougan to Newry Main Link Reinforcement
 Castor Bay to Dungannon Strategic Trunk Mains
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Much of the area in Dungannon and South Tyrone Council area is supplied by Altmore WTW and Shanmoy Borewell WTW. Both of these WTW are due to be removed from supply by spring 2011. The area will now be fed from the newly upgraded Castor Bay WTW. This, in conjunction with the recent upgrade to Seagahan WTW, will significantly improve the quality of water supplied to this area.

Fermanagh District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Fermanagh Council MZC	99.84%

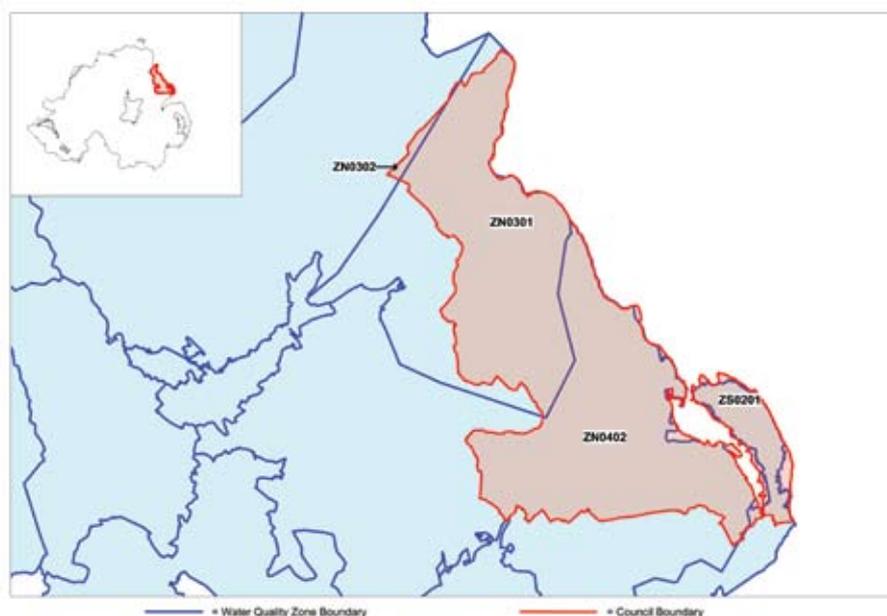
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0704	Lough Bradan Drumquin	ZN0801	Belleek Garrison
ZN0706	Lough Macrory Killyclogher	ZN0802	Killyhevlin Enniskillen

2009 water quality Capital Works Programmes affecting the council area:

Killyhevlin to Lough Bradan Link Watermain
 Reservoir Rehabilitation Western Area Phase1
 Metering and Treatment of WTW effluents
 Derg - Omagh Area Transfer Pumps
 Roscah
 Ballagh Rd Fivemiletown Watermain Extension
 Castle St, Irvinestown – Watermain Replacement
 Edenbane, Tempo, Co. Fermanagh - Watermain Extension
 Derryclawan, Lisbellaw. Watermain Extension.
 Deerpark Lane Watermain Extension
 Enniskillen New Hospital Watermain Ext
 Service Reservoir Enhanced Security

Larne Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Larne Council MZC	99.73%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0301	Buckna Glenarm	ZN0402	Killylane Ballynure
ZN0302	Dungonnell Glarryford	ZS0201	Dorisland Carrick
ZN0401	Dunore Point Antrim		

2009 water quality Capital Works Programmes affecting the council area:

Crosshill Service Reservoir Water Booster Station, Larne
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Limavady Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Limavady Council MZC	99.82%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0603	Carmoney Eglinton
ZN0501	Moyola Magherafelt	ZN0604	Caugh Hill Dungiven
ZN0601	Ballinrees Limavady	ZN0606	Stradreagh Aghanloo
ZN0602	Brishey Limavady East		

2009 water quality Capital Works Programmes affecting the council area:

Limavady Zone Watermain Improvements
 Coolagh Road, Greysteel - Replacement Watermain
 Removal of Stradreagh Spring Source
 Ballinrees to Limavady/Londonderry Supply Augmentation
 Brishey Springs Decommissioning, Dungiven
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

Lisburn City Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Lisburn City Council MZC	99.86%

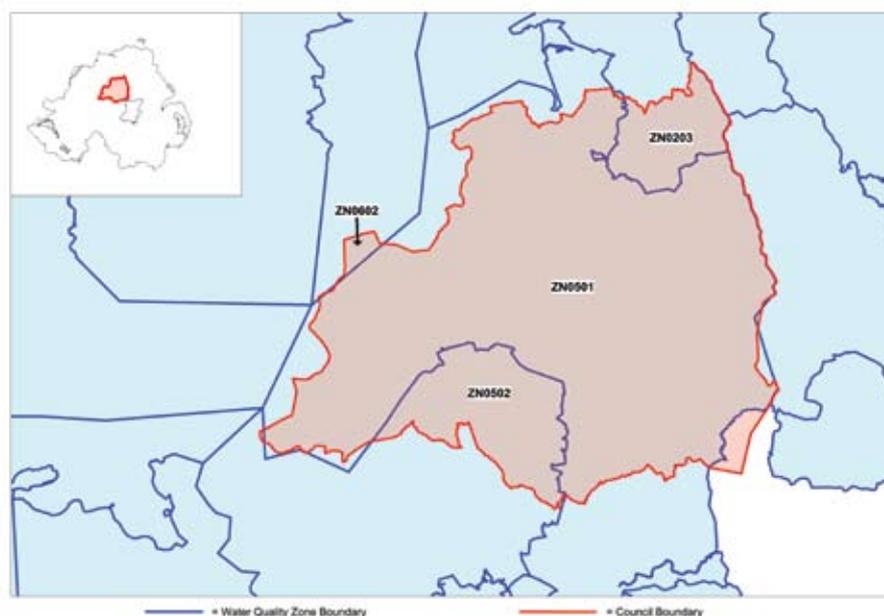
2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0503	Forked Bridge Stoneyford
ZS0102	Belfast Ballygomartin South	ZS0601	Drumroad Ballynahinch
ZS0108	Belfast Purdysburn	ZS0802	Castor Bay Lurgan
ZS0501	Drumroad Lisburn	ZS0902	Fofanny Dromore
ZS0502	Forked Bridge Dunmurry		

2009 water quality Capital Works Programmes affecting the council area:

Castor Bay / Magheraliskmisk Zone Watermain Improvements
 Castor Bay/Moira Zone Watermain Improvements
 Metering and Treatment of WTW effluents
 West Belfast / North Lisburn
 Strategic Link - Castor Bay to Belfast
 Service Reservoir Enhanced Security
 Security improvements at Key point Installations
 Lisburn North Rural Zone Watermain Improvements
 Lisburn Town Zone Watermain Improvements
 Lisburn to R.O.I. Border Trunk Road Improvements

Magherafelt District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Magherafelt Council MZC	99.64%

2009 water supply zones wholly or partially within the council area:

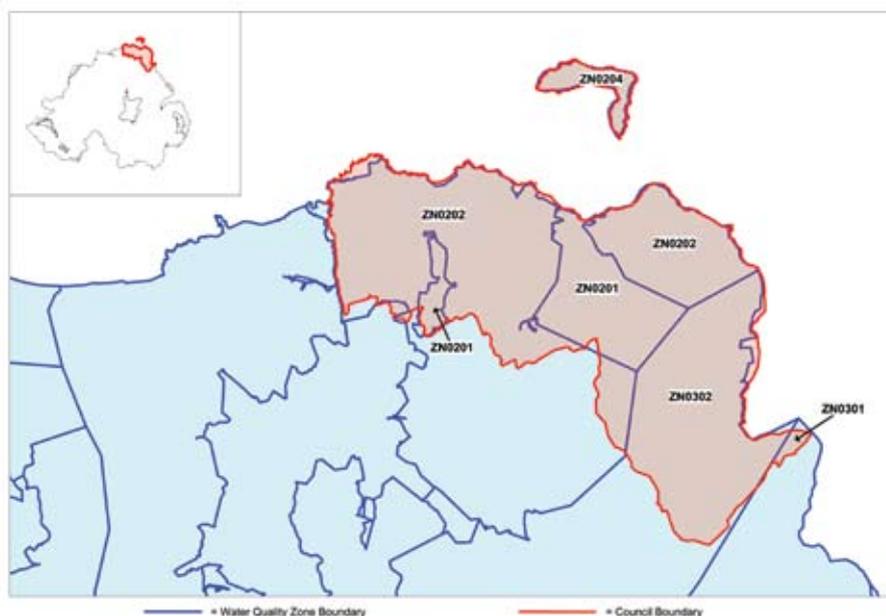
Zone Code	Zone Name	Zone Code	Zone Name
ZN0202	Altnahinch Bushmills	ZN0501	Moyola Magherafelt
ZN0203	Ballinrees Ballymoney	ZN0502	Lough Fea Cookstown
ZN0304	Glarryford Ahoghill	ZN0602	Brishey Limavady East

2009 water quality Capital Works Programmes affecting the council area:

Moyola Zone Watermain Improvements
 Bank Square, Maghera
 Drummuck Road Maghera Watermain Extension
 Magherafelt Road, Tobermore, Watermain Extension
 Grange Lane, Magherafelt, Watermain Extension
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security

A part of the Magherafelt Council area was supplied by Glarryford WTW during much of 2009. This WTW has now been taken out of service with the area now supplied from the newly upgraded Dunore Point WTW. This will significantly improve water quality in the area supplied.

Moyle District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Moyle Council MZC	99.82%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0101	Ballinrees Coleraine	ZN0204	Rathlin Island
ZN0201	Alcrossagh Ballycastle	ZN0301	Buckna Glenarm
ZN0202	Altnahinch Bushmills	ZN0302	Dungonnell Glarryford
ZN0203	Ballinrees Ballymoney		

2009 water quality Capital Works Programmes affecting the council area:

Portballintrae Zone Watermain Improvements
 Ballycastle Zone Watermain Improvements
 Ballynahone Zone Watermain Improvements
 Loughguile Zone Watermain Improvements
 Rasharkin Zone Watermain Improvements
 Cushendall Road, Ballycastle, Watermain Extension
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 The Park, Armoy - Watermain & Sewer

Newry & Mourne District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Newry & Mourne Council MZC	99.51%

2009 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
ZN1102	Seagahan Armagh	ZS0903	Fofanny Jerrettspass
ZS0602	Drumaroad Downpatrick	ZS0904	Fofanny Mourne
ZS0901	Camlough Newry West	ZS1001	Carran Hill Crossmaglen

2009 water quality Capital Works Programmes affecting the council area:

Fofanny WTW EC Compliance
 Ballydougan to Newry Main Link Reinforcement
 Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Security improvements at Key point Installations
 Kilkeel & Annalong Water Supply
 Lisburn to R.O.I. Border Trunk Road Improvements
 Newry Zone Watermain Improvements
 Warrenpoint Zone Watermain Improvements
 Ashtree Hill Drumbanagher Watermain Extension
 Carran Hill Supply Zone Management Plan
 Moneydarragh Road, Annalong, Replacement Watermain

Much of the area in the Newry and Mourne Council area is supplied by Clay Lake WTW. This WTW is due to be upgraded with work commencing spring 2011. This in conjunction with the recent upgrade to Seagahan WTW will significantly improve water quality in the area supplied.

Newtownabbey Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Newtownabbey Council MZC	99.66%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0401	Dunore Point Antrim	ZS0110	Dunore Point Glengormley
ZN0402	Killylane Ballynure	ZS0201	Dorisland Carrick
ZS0109	Dorisland Whiteabbey		

2009 water quality Capital Works Programmes affecting the council area:

Metering and Treatment of WTW effluents
 Service Reservoir Enhanced Security
 Whiteabbey Lower, Mains Replacement Newtownabbey

Much of the area in the Newtownabbey Council area is supplied by Killylane WTW. This WTW is scheduled to be upgraded during the PC10 period and should significantly improve the quality of water in the area supplied.

North Down Borough Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
North Down Council MZC	99.90%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZS0104	Belfast Breda North	ZS0402	Drumaroad Comber
ZS0108	Belfast Purdysburn	ZS0403	Drumaroad Peninsula
ZS0401	Drumaroad Bangor		

2009 water quality Capital Works Programmes affecting the council area:

- Metering and Treatment of WTW effluents
- Service Reservoir Enhanced Security
- North Down Strategic Trunk Watermains
- North Down, Bangor Zone Watermain Improvements
- Bangor Outer Zone Watermain Improvements
- Newtownards Town Zone Watermain Improvements
- Portaferry, Ballyquinton area Watermain Replacement

Omagh District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Omagh Council MZC	99.66%

2009 water supply zones wholly or partially within the council area:

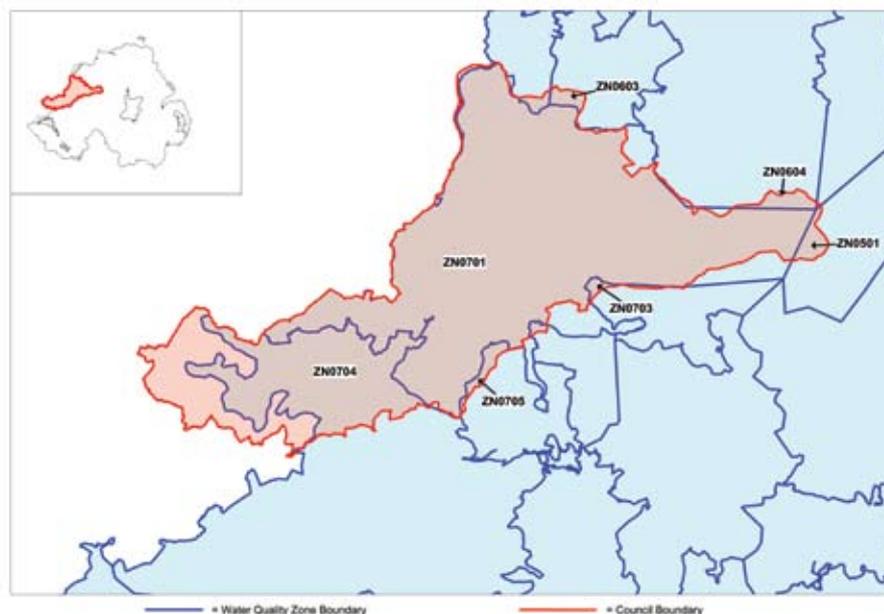
Zone Code	Zone Name	Zone Code	Zone Name
ZN0501	Moyola Magherafelt	ZN0704	Lough Bradan Drumquin
ZN0502	Lough Fea Cookstown	ZN0705	Lough Macrory Beragh
ZN0701	Derg Strabane	ZN0706	Lough Macrory Killyclogher
ZN0702	Glenhordial Omagh	ZN0802	Killyhevin Enniskillen
ZN0703	Lenamore Greencastle	ZN0902	Altmore Donaghmore

2009 water quality Capital Works Programmes affecting the council area:

Killyhevin to Lough Bradan Link Watermain
 Reservoir Rehabilitation Western Area Phase1
 Metering and Treatment of WTW effluents
 North Tyrone Zone Watermain Improvements
 Derg - Omagh Area Transfer Pumps
 Lough Bradan WTWs Upgrade
 Cornavarrow, Omagh. Replacement Watermain
 Killymore Road, Gortin Pumping Station
 Glenhordial WTW replacement of Camowen pumping main
 Creggan Road Carrickmore Watermain Extension
 Clanabogan Road Mullaghbane Replacement Watermain
 Service Reservoir Enhanced Security

Much of the Omagh Council area is fed from Lough Bradan WTW. This works is currently being upgraded with completion due in spring 2011. This will significantly improve water quality in the area supplied.

Strabane District Council



Mean Zonal Compliance (MZC)

Overall Northern Ireland MZC	99.74%
Strabane Council MZC	99.68%

2009 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0501	Moyola Magherafelt	ZN0703	Lenamore Greencastle
ZN0602	Brishey Limavady East	ZN0704	Lough Bradan Drumquin
ZN0603	Carmoney Eglinton	ZN0705	Lough Macrory Beragh
ZN0604	Caugh Hill Dungiven	ZN0706	Lough Macrory Killyclogher
ZN0701	Derg Strabane		

2009 water quality Capital Works Programmes affecting the council area:

Carmoney to Strabane Strategic Link Watermain
 Reservoir Rehabilitation Western Area Phase1
 Lisdoo Road,Strabane.Watermain Extension.
 Metering and Treatment of WTW effluents
 Strule Intake For Derg WTW
 North Tyrone Zone Watermain Improvements
 Glendergan Impoundment
 Derg West Zone Watermain Improvements
 Service Reservoir Enhanced Security

Much of the Strabane Council area is fed from Lough Bradan WTW. This works is currently being upgraded with completion due in spring 2011. This will significantly improve water quality in the area supplied.

Appendix 5

Water Quality Incidents / Non-incidents

During 2009, there were 55 notifiable events of which 20 were categorised as non-incidents and 35 categorised as incidents by DWI:

Incidents 2009

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
5–12 Jan 2009	Lough Fea WTWs (37,500 population)	Treatment difficulties led to aluminium exceedances in the final water and related supply area.	Cookstown and Magherafelt
9–12 Feb 2009	Castor Bay WTWs (267,000 population)	Treatment difficulties led to turbidity and aluminium exceedances in the final water.	Lisburn
21–22 Feb 2009	Drumaroad WTWs (796,000 population)	Treatment difficulties led to aluminium exceedances in the final water and related supply area.	Ards, Belfast, Castlereagh, Down, Lisburn and North Down
23–25 Feb 2009	Carnhill Estate, Londonderry (350 properties)	Potential contamination incident, following damage to water main by contractor working in the area, requiring a precautionary "Do Not Use Notice".	Derry
26–27 Feb 2009	Tulnacross Road, Cookstown (35 properties)	Potential contamination incident following damage to water main by contractor working in the area, requiring a precautionary "Do Not Use Notice".	Cookstown
8–9 Mar 2009	Calone SR (900 properties)	Power failure, due to adverse weather conditions, led to chemical exceedances in related supply area.	Armagh
21–24 Mar 2009	Portaferry (600 properties)	Extended interruption to supply due to difficulties in effecting burst trunk main repair.	Ards
23–24 Mar 2009	Lough Fea WTWs (37,500 population)	Treatment difficulties led to aluminium exceedances in the final water. A restriction in the sample line led to a turbidity exceedance which was unrepresentative of the water into supply.	Cookstown and Magherafelt
12–14 Apr 2009	Dunore Point WTWs (220,000 properties)	E. coli and coliform bacteria exceedances reported led to a precautionary "Boil Water Notice".	Antrim, Ards, Ballymena, Belfast, Castlereagh, Larne, Lisburn, Moyle, Newtownabbey and North Down
22 Apr 2009	Ballinrees WTWs (127,000 population)	Treatment difficulties led to aluminium and turbidity exceedances in the final water.	Ballymoney, Coleraine and Limavady
3–4 May 2009	Killylane WTWs (51,500 population)	Treatment difficulties led to an aluminium exceedance in the final water.	Antrim, Ballymena and Larne
2–3 Jun 2009	Killylane WTWs (51,500 population)	Treatment difficulties led to aluminium exceedances in the final water.	Antrim, Ballymena and Larne
4–6 Jun 2009	Townhill Road, Rasharkin (12 properties)	Potential contamination incident requiring "Do Not Use Notice".	Ballymoney
15–22 Jun 2009	Drumaroad WTWs (796,000 population)	Treatment difficulties led to aluminium exceedances in the final water and related supply area.	Ards, Belfast, Castlereagh, Down, Lisburn and North Down
Jun/Jul 2009	Derg WTWs (42,500 population)	Pesticide (MCPA) exceedance due to treatment difficulties in removing pesticide from the raw water source.	Strabane
26 Jun–16 Jul 2009	Donegore SR (325 properties)	Coliform bacteria most probably due to localised contamination and low disinfectant level.	Antrim
2–6 Jul 2009	Killylane WTWs (51,500 population)	Treatment difficulties (after high network demand) led to aluminium exceedances in the final water.	Antrim, Ballymena and Larne
7–8 Jul 2009	Guinness SR (200 properties)	E. coli and coliform bacteria exceedances due to inadequate disinfection (The SR was permanently removed from service on 8 July 2009).	Down

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
8-11 Jul 2009	Slievebane Road, Irvinestown (3 properties)	E. coli and coliform bacteria exceedances after a burst repair led to a "Boil Water Notice".	Fermanagh
17-19 Aug 2009	Carmony WTWs (50,000 population)	Treatment difficulties led to aluminium exceedances in the final water.	Derry
21-24 Aug 2009	Altmore WTWs (14,000 population)	Treatment difficulties led to aluminium exceedances in the final water.	Dungannon & South Tyrone
25-30 Aug 2009	Ardboe Road, Ardboe (2 properties)	E. coli and coliform bacteria exceedances after a fire hydrant was replaced led to a "Boil Water Notice".	Cookstown
25 Aug-8 Sep 2009	Killylane WTWs (51,500 population)	Treatment difficulties led to aluminium and turbidity exceedances in the final water.	Antrim, Ballymena and Larne
31 Aug-10 Sep 2009	Carmony WTWs (50,000 population)	Treatment difficulties led to aluminium exceedances in the final water.	Derry
Sep/ Nov 2009	Carron Hill WTWs (16,000 population)	Pesticide (MCPA) exceedance due to treatment difficulties in removing pesticide from the raw water source.	Newry & Mourne
2 & 8 Oct 2009	Altmore WTWs (14,000 population)	Treatment difficulties led to turbidity exceedances in the final water.	Dungannon & South Tyrone
6 Oct-6 Nov 2009	Killylane WTWs (51,500 population)	Treatment difficulties led to aluminium exceedances in the final water.	Antrim, Ballymena and Larne
7-8 Oct 2009	Drumaroad WTWs (796,000 population)	Treatment difficulties led to aluminium exceedances in the final water and related supply area.	Ards, Belfast, Castlereagh, Down, Lisburn and North Down
3-13 Nov 2009	Bridge Street, Portadown (4 properties)	E. coli and coliform bacteria exceedances after external contamination led to a "Boil Water Notice".	Craigavon
20-23 Nov 2009	Altmore WTWs (14,000 population)	Treatment difficulties led to manganese and turbidity exceedances in the final water.	Dungannon & South Tyrone
30 Nov-4 Dec 2009	W1702 Altnahinch WTWs (28,500 population)	Treatment difficulties led to chemical exceedances in the final water and related supply area.	Ballymena, Ballymoney, Coleraine and Moyle
5-9 Dec 2009	Carrick Avenue, Limavady (3 properties)	E. coli and coliform bacteria exceedances after a burst main repair led to a "Boil Water Notice".	Cookstown
8-10 Dec 2009	Cumber Road area, Claudy (30 properties)	Taste and Odour failures following operational work.	Derry
26 Dec 2009 - 21 Jan 2010	Mostly western areas	Loss of supply due to frozen pipes and burst mains, etc during severe freeze/thaw weather conditions.	
30 Dec 2009 - 26 Jan 2010	W2517 Cabragh/ Gortlenaghan at Cabragh SR	Chemical exceedances due to emergency supply brought in to maintain water supplied to customers during severe freeze/thaw weather conditions.	Dungannon & South Tyrone

Non-Incidents 2009

Date	Area and Estimate of Population / Properties Potentially Affected	Nature and Cause of Event	Council Area
16–17 Feb 2009	Moyola WTWs (71,500 population)	Coliform bacteria exceedance reported - no apparent reason.	Magherafelt and Cookstown
25 Mar–10 Apr 2009	Shanmoy Borewell (6,100 properties)	Coliform bacteria exceedances from unchlorinated borewell. No customers were affected as all customers were supplied from downstream chlorinated service reservoirs.	Armagh, Cookstown and Dungannon & South Tyrone
25–26 Mar 2009	Killylane WTWs (51,500 population)	Primary disinfection problems requiring manual chlorine boosting; however effective chlorination was maintained during period.	Antrim, Ballymena and Larne
26–27 Mar 2009	Clady Bridge and Ballyhill Roads, Belfast (200 properties)	Interruption to supply due to difficulties repairing burst main.	Belfast
24–25 May 2009	Lough Macrory (38,000 population)	E. coli and coliform bacteria reported – no apparent reason.	Omagh
17–18 Jun 2009	Mullaghanagh SR (6,100 properties)	E. coli and coliform bacteria reported – no apparent reason.	Dungannon & South Tyrone
24–25 Jun 2009	Fofanny WTWs and Knock LL SR (212,000 population)	E. coli and coliform bacteria reported – no apparent reason.	Armagh, Banbridge, Craigavon, Down, Lisburn and Newry & Mourne
29–30 Jun 2009	Seagahan WTWs (40,000 population)	Coliform bacteria reported – no apparent reason.	Armagh
9–10 Jul 2009	Drumabest BH at Dunaghy (2,500 properties)	Chemical exceedances due to unrepresentative sampling.	Ballymoney
23–24 Sep 2009	Castor Bay WTWs (267,000 population)	Chemical exceedances due to unrepresentative sampling.	Armagh, Banbridge, Belfast, Craigavon, Dungannon & South Tyrone, Lisburn and Newry & Mourne
19–20 Oct 2009	Seagahan WTWs (40,000 population)	Primary disinfection problems requiring manual chlorine boosting, however effective chlorination was maintained during period.	Armagh
8–9 Nov 2009	Carmony WTWs (50,000 population)	Turbidity exceedance due to unrepresentative sampling.	Derry
20 Nov–1 Dec 2009	Killyhevlin WTWs (85,000 population)	Flooding at WTWs and potential loss of supply due to extreme weather conditions causing water levels at Lough Erne to rise. The pro-active remedial actions taken prevented water quality being compromised.	Dungannon & South Tyrone, Fermanagh and Omagh
23–24 Nov 2009	Seagahan WTWs (40,000 population)	Turbidity exceedance due to intermittent external power cuts due to extreme weather conditions.	Armagh
28–29 Nov 2009	Moyola WTWs (71,000 population)	Turbidity exceedance due to external power cut.	Cookstown and Magherafelt
9–12 Dec 2009	Main Street, Carrickmore (1 property)	A taste and odour failure related to local contamination of the supply pipe at a single dwelling.	Omagh
22–23 Dec 2009	Glarryford Borehole WTWs (14,000 population)	E. coli and coliform bacteria reported – no apparent reason.	Antrim, Ballymena and Ballymoney
24 Dec 2009 – Jan 2010	Killyhevlin WTWs (25,000 properties)	Primary disinfectant problems due to severe weather requiring manual chlorine boosting; however effective chlorination was maintained during period.	Dungannon & South Tyrone, Fermanagh and Omagh
24 Dec 2009 – Jan 2010	Derg WTWs (13,880 properties)	Primary disinfectant problems due to severe weather requiring manual chlorine boosting; however effective chlorination was maintained during period.	Derry, Omagh and Strabane
24 Dec 2009 – Jan 2010	Lough Bradan WTWs (7,700 properties)	Primary disinfectant problems due to severe weather requiring manual chlorine boosting; however effective chlorination was maintained during period.	Dungannon & South Tyrone, Fermanagh, Omagh and Strabane

Appendix 6

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

NI Water has produced a customer leaflet detailing 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 and 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 SIC codes and also guidance provided by WRAS and the Water Regulation guidance on fluid categories. A proactive inspection programme will be 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 is currently liaising with NI Water solicitors regarding the implementation of a prosecution policy should the need arise as a result of non compliance with the regulations or in the event of a contamination incident.

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 (AIR10) return figures:

Description	Number
Total number of connected properties	798700
Total number of new connections in period covered by this report	4899

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 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:

- City and Guilds in Water Regulations for Enforcement staff
- C&G L8 Legionella course

Promotion of the Regulations

As a fully subscribing member of the scheme and part owner NI Water has representation on the 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 occurs regarding the particular meaning of a particular clause. 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.

NI Water has recently met with the Ulster Farmers Union to apprise them of the new Water Regulations and their implications for the farming industry. In the next 12 months NI Water will be engaging with other professional bodies to educate and inform them about the Regulations whilst ensuring company key account managers and call centre staff are able to display a basic appreciation of the Regulations and direct any technical enquiries to the Water Regulation team.

A Water Regulation web page has been established for both Domestic and Non Domestic customers to reference as well as a Water Regulation "Mailbox" to facilitate customer enquiries. The site contains Regulation specific background information, leaflets in PDF format and customer notification forms.

Notifications

Description	Number
Total No. of water connection application forms received between 1st April 2009 - 31st March 2010 (Notifications)	7326
Total number of written customer notifications other than those associated with new connections applications.	0
Total No. of new connections made between 1st April 2009 – 31st March 2010	4859

Approved Contractors Scheme

NI Water does not subscribe to the Water Industry Approved Plumbing scheme but recognises any practitioners under this scheme. NI Water chooses not to run its own approved contractor scheme but rather promotes and participates in the Scottish and Northern Ireland Plumbing Employers Federation (SNIPEF) scheme.

Description	Number
No of members in SNIPEF at 31 March 2010.	714
No of members in Northern Ireland.	78
No of members in Northern Ireland who are also members of the Approved Contractors Scheme.	43
No of members in Northern Ireland awaiting approval as approved contractors or have been previously been members.	35

Inspections (Other than those arising from Notification)

As the new Water Regulations and reporting requirements commenced mid reporting year the figures below represent just over a half years inspections. Also due to internal re-organisation and change of roles the domestic plumbing inspections carried out by the former plumbing inspections team has not been included with this figure as it is difficult to quantify the actual number of spread across several personnel many of whom have changed role or left the company. Inspections previously carried out by NI Water were recorded on an individual paper based system and not easily reported on. It is anticipated for the next annual return inspection rates, contraventions, notifications, repeat visits and enforcement notifications will have considerably increased over the figures reported below. The majority of next years statistics will be generated electronically using the Connect 2 system.

Description	Number
Total number of Domestic and Non Domestic Inspections	171
Contraventions	177
Contraventions rectified	25
Outstanding contraventions	152

Contraventions found on all property types are various, they range the storage cisterns having the wrong type of Air Gap fitted – overflows running to waste in non visual areas – Dead legs on pipe-work – The properties are also similar in having to install servicing valves at float valves – Insulate and Label pipe-work

Enforcement Actions

There have been no enforcement notices issued during this enforcement period. However, 177 improvement notices have been served on customers.

Disputes

There have been no formal disputes referred to arbitration.

General Information

Assessed number of high risk connections (i.e. Class 4 and 5 Fluid Category)

Estimate = 30,000-40,000 premises, 90 inspections of FC4&5 premises completed.

Number of contamination events (due to issues covered by these Regulations) as reported to DWI

1. Seskinore incident as reported to the DWI
2. Portadown incident as reported to the DWI

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:

- Formed and successfully trained a Water Regulation inspection team of 7 dedicated staff to City and Guilds standard for Water Regulation inspectors;
- Procured and implemented the use of a dedicated software system (Connect 2) to be used for driving a proactive (and reactive) risk based inspection programme, recording inspection results and required remedial actions; and
- Devised the processes and literature necessary for the Water Regulation inspection, education and enforcement obligation as per obligations contained in the Water and Sewerage Services (NI) Order 2006.



Looking Forward

- NI Water intends to develop a comprehensive Water Regulation strategy commensurate with 'Best Practice' across the UK;
- Further develop processes and documentation relating to Water Regulation inspections and enforcement;
- Liaise with NI Water legal team regarding the implementation of a prosecution policy;
- Promote general awareness of the Regulations to customers through appropriate public and professional interfaces;
- Continue to participate and benefit from the attendance and participation on the various WRAS forums;
- Assist SNIPEF in the governance of the approved contractor's scheme as well promotional opportunities to raise plumbing standards in Northern Ireland; and
- Refine Water Regulation reports as output from Connect 2.

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 Cryptosporidium.
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.
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.
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.
Mains rehabilitation	Restoration or replacement of water mains pipework to a proper condition.
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) 2007 S.R. No.147.
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.
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.
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 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.



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