

Compliance with Drinking Water Quality Standards in Northern Ireland in 2007

November 2008

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To satisfy regulatory requirements for monitoring drinking water quality, samples are required to be collected from different locations within the water supply chain: from water treatment works, water supply points, service reservoirs, and water supply zones (consumers' taps). The Regulations contain specific Schedules which identify what parameters are to be tested for and under what circumstances. The results of the monitoring carried out by Northern Ireland Water Ltd (NI Water) for 2007 is presented in the following summary tables.

Table 1.1: Quality of Water Leaving Water Treatment Works - European Directive Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Works with Failures
Nitrite (works)	0.1 mg NO ₂ /l	387	0	0.00	0
Total		387	0	0.00	0

Table 1.2: Quality of Water Leaving Water Treatment Works - National Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Works with Failures
Coliform bacteria	0/100ml	9,471	11	0.12	9
<i>Escherichia coli</i>	0/100ml	9,471	4	0.04	4
Total		18,942	15	0.08	

Table 1.3: Quality of Water Leaving Water Treatment Works - Additional European Monitoring Requirements

Parameter	Specification Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Works with Failures
Colony counts @ 22°C	No abnormal change	9,471			
Colony counts @ 37°C	No abnormal change	9,471			
Residual disinfectant (Free chlorine mg/l)		9,471			
Residual disinfectant (Total chlorine mg/l)		9,471			
Turbidity	1 NTU	9,471	50	0.53	17
Total		47,355	50	0.11	

Table 1.4: Quality of Water Leaving Water Treatment Works – Northern Ireland Requirement

Parameter	Reporting Value	Total Number of Tests	Number of Tests >1 Oocysts/100mls	% of Tests Reported	Number of Works Reported
<i>Cryptosporidium</i> oocysts	<1 oocysts per 10 litres	130	0	0.00	1*
Total		130	0	0.00	

* Continuous monitoring at one water treatment works deemed to be at risk, out of a total of 43 water treatment works.

Table 1.5: Quality of Water Leaving Service Reservoirs - National Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Reservoirs with Failures
Coliform bacteria	0/100ml	17,581	43	0.24	35
<i>Escherichia coli</i>	0/100ml	17,581	5	0.03	5
Total		35,162	48		

Table 1.6: Quality of Water Leaving Service Reservoirs - Additional European Monitoring Standards

Parameter	Specification Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Reservoirs with Failures
Colony counts @ 22°C	No abnormal change	17,581			
Colony counts @ 37°C	No abnormal change	17,581			
Residual disinfectant (Free Chlorine mg/l)		17,581			
Residual disinfectant (Total chlorine mg/l)		17,581			
Total		70,324			

Number of service reservoirs = 342

Table 1.7: Quality of Water Leaving Supply Points - European Directive Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Supply Points with Failures
1,2-dichloroethane	3 µg/l	388	0	0.00	0
Benzene	1 µg/l	388	0	0.00	0
Boron	1 mg B/l	388	0	0.00	0
Cyanide	50 µg CN/l	388	0	0.00	0
Fluoride	1.5 mg F/l	387	0	0.00	0
Mercury	1 µg Hg/l	388	0	0.00	0
Pesticides - 2,4-D	0.1 µg/l	388	0	0.00	0
Pesticides - 2,4-DB	0.1 µg/l	388	0	0.00	0
Pesticides - Aldrin	0.03 µg/l	388	0	0.00	0
Pesticides - Alpha-cypermethrin	0.1 µg/l	388	0	0.00	0
Pesticides - Asulam	0.1 µg/l	388	0	0.00	0
Pesticides - Atrazine	0.1 µg/l	388	0	0.00	0
Pesticides - Bentazone	0.1 µg/l	388	0	0.00	0
Pesticides - Bromoxynil	0.1 µg/l	388	0	0.00	0
Pesticides - Carbendazim	0.1 µg/l	388	0	0.00	0
Pesticides - Chlormequat	0.1 µg/l	388	0	0.00	0
Pesticides - Chlorothalonil	0.1 µg/l	388	0	0.00	0
Pesticides - Chlorpyrifos	0.1 µg/l	388	0	0.00	0
Pesticides - Clopyralid	0.1 µg/l	388	0	0.00	0
Pesticides - Cypermethrin	0.1 µg/l	388	0	0.00	0
Pesticides - Diazinon	0.1 µg/l	388	0	0.00	0
Pesticides - Dicamba	0.1 µg/l	388	0	0.00	0
Pesticides - Dichlorbenil	0.1 µg/l	388	0	0.00	0
Pesticides - Dichlorophen	0.1 µg/l	388	0	0.00	0
Pesticides - Dichlorprop	0.1 µg/l	388	0	0.00	0
Pesticides - Dichlorvos	0.1 µg/l	388	0	0.00	0
Pesticides - Dieldrin	0.03 µg/l	388	0	0.00	0
Pesticides - Diuron	0.1 µg/l	388	0	0.00	0
Pesticides - Endrin	0.1 µg/l	388	0	0.00	0
Pesticides - Fenpropidin	0.1 µg/l	388	0	0.00	0
Pesticides - Fenpropimorph	0.1 µg/l	388	0	0.00	0
Pesticides - Fluroxypyr	0.1 µg/l	388	0	0.00	0
Pesticides - Flutriafol	0.1 µg/l	388	0	0.00	0
Pesticides - Gamma-HCH	0.1 µg/l	388	0	0.00	0
Pesticides - Glyphosate	0.1 µg/l	388	0	0.00	0
Pesticides - Hexachlorobenzene	0.1 µg/l	388	0	0.00	0

Table 1.7: Continued

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Supply Points with Failures
Pesticides - Heptachlor	0.03 µg/l	388	0	0.00	0
Pesticides - Heptachlor epoxide	0.03 µg/l	388	1	0.26	1
Pesticides - Isoproturon	0.1 µg/l	388	0	0.00	0
Pesticides - Linuron	0.1 µg/l	388	0	0.00	0
Pesticides - MCPA	0.1 µg/l	388	4	1.03	3
Pesticides - MCPB	0.1 µg/l	388	0	0.00	0
Pesticides - Mecoprop P	0.1 µg/l	388	0	0.00	0
Pesticides - Metalaxyl	0.1 µg/l	388	0	0.00	0
Pesticides - op-DDT	0.1 µg/l	388	0	0.00	0
Pesticides - pp-DDT	0.1 µg/l	388	0	0.00	0
Pesticides - Pendimethalin	0.1 µg/l	388	0	0.00	0
Pesticides - Pentachlorophenol	0.1 µg/l	388	0	0.00	0
Pesticides - Phorate	0.1 µg/l	388	0	0.00	0
Pesticides - Propazine	0.1 µg/l	388	0	0.00	0
Pesticides - Propetamphos	0.1 µg/l	388	0	0.00	0
Pesticides - Simazine	0.1 µg/l	388	0	0.00	0
Pesticides - Triclopyr	0.1 µg/l	388	0	0.00	0
Pesticides - Trifluralin	0.1 µg/l	388	0	0.00	0
Pesticides: Total	0.5 µg/l	388	1	0.23	1
Tetrachloroethene and Trichloroethene	10 µg/l	388	0	0.00	0
Total		21,727	6	0.03	

Table 1.8: Quality of Water Leaving Supply Points - National Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Supply Points with Failures
Tetrachloromethane	3 µg/l	433	0	0.00	0
Total		433	0	0.00	

Table 1.9: Quality of Water Leaving Supply Points - Additional European Monitoring Requirements

Parameter	Specification Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Supply Points with Failures
Chloride	250 mg Cl/l	387	0	0.00	0
<i>Clostridium perfringens</i>	0/100 ml	2,939	3	0.10	3
Conductivity	2500 µS/cm	2,980	0	0.00	0
*Gross Alpha	0.1 Bq/l	388	0	0.00	0
*Gross Beta	1 Bq/l	388	0	0.00	0
Sulphate	250 mg SO ₄ /l	387	0	0.00	0
Total organic carbon	No abnormal change	388			
Tritium (for radioactivity)	100 Bq/l	388	0	0.00	0
Total		8,245	3	0.36	

**Monitored for the calculation of total indicative dose.*

Number of Supply Points = 43

Table 1.10: Quality of Water at Consumers' Taps (Water Supply Zones) - European Directive Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Zones with Failures
1,2-dichloroethane	3 µg/l	388	0	0.00	0
Antimony	5 µg Sb/l	464	0	0.00	0
Arsenic	10 µg As/l	464	0	0.00	0
Benzene	1 µg/l	388	0	0.00	0
Benzo(a)pyrene	0.01 µg/l	464	0	0.00	0
Boron	1 mg B/l	388	0	0.00	0
Bromate	10 µg BrO ₃ /l	464	0	0.00	0
Cadmium	5 µg Cd/l	464	0	0.00	0
Chromium	50 µg Cr/l	464	0	0.00	0
Copper	2 mg Cu/l	464	0	0.00	0
Cyanide	50 µg CN/l	388	0	0.00	0
<i>Escherichia coli</i>	0/100 ml	5,568	3	0.05	3
Enterococci	0/100 ml	464	0	0.00	0
Fluoride	1.5 mg F/l	387	0	0.00	0
Lead	25 µg Pb/l	464	4	0.86	4
Mercury	1 µg Hg/l	388	0	0.00	0
Nickel	20 µg Ni/l	464	1	0.22	1
Nitrate	50 mg NO ₃ /l	492	0	0.00	0
Nitrite	0.5 mg NO ₂ /l	492	0	0.00	0
Pesticides - Aldrin	0.03 µg/l	388	0	0.00	0
Pesticides - Dieldrin	0.03 µg/l	388	0	0.00	0
Pesticides - Heptachlor	0.03 µg/l	388	0	0.00	0
Pesticides - Heptachlor epoxide	0.03 µg/l	388	1	0.26	1
Pesticides - MCPA	0.1 µg/l	388	4	1.03	3
Pesticides - other substances	0.1 µg/l	17,072	0	0.00	0
Pesticides: Total	0.5 µg/l	388	1	0.26	1
Polycyclic aromatic hydrocarbons	0.1 µg/l	464	0	0.00	0
Selenium	10 µg Se/l	464	0	0.00	0
Tetrachloroethene and Trichloroethene	10 µg/l	388	0	0.00	0
Trihalomethanes:Total	100 µg/l	752	243	32.31	25
Total		33,047	48	0.15	

Table 1.11: Quality of Water at Consumers' Taps (Water Supply Zones) - National Standards

Parameter	Prescribed Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Zones with Failures
Aluminium	200 µg Al/l	2,012	30	1.49	19
Colour	20 mg/l Pt/Co	2,012	2	0.10	2
Hydrogen ion	<6.5 - >10 pH value	2,012	1	0.05	1
Iron	200 µg Fe/l	2,012	34	1.69	22
Manganese	50 µg Mn/l	2,012	23	1.14	20
Odour	3 at 25°C dilution number	2,012	0	0.00	0
Sodium	200 mg Na/l	464	0	0.00	0
Taste	3 at 25°C dilution number	2,012	0	0.00	0
Tetrachloromethane	3 µg /l	388	0	0.00	0
Turbidity	4 NTU	2,012	5	0.25	4
Total		16,948	95	0.56	

Table 1.12: Quality of Water at Consumers' Taps (Water Supply Zones) - Additional European Monitoring Requirements

Parameter	Specification Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Zones with Failures
Ammonium	0.5 mg NH ₄ /l	2,012	0	0.00	0
Chloride	250 mg Cl/l	387	0	0.00	0
<i>Clostridium perfringens</i>	0/100 ml	2,939	2	0.10	3
Coliform bacteria	0/100 ml	5,568	31	0.56	24
Colony counts @ 22°C	No abnormal change	2,012	0	0.00	0
Colony counts @ 37°C	No abnormal change	2,012	0	0.00	0
Conductivity	2500 µS/cm	2,980	0	0.00	0
*Gross Alpha	0.1 Bq/l	388	0	0.00	0
*Gross Beta	1 Bq/l	388	0	0.00	0
Hydrogen ion	>9.5 pH value	2,012	3	0.15	2
Residual disinfectant (Free chlorine) mg/l		5,568			
Residual disinfectant (Total chlorine) mg/l		5,568			

* Monitored for the calculation of total indicative dose.

Table 1.12: Continued

Parameter	Specification Concentration or Value	Total Number of Tests	Number of Tests Failed	% of Tests Failed	Number of Zones with Failures
Sulphate	250 mg SO ₄ /l	387	0	0.00	0
Total organic carbon	No abnormal change	388	0	0.00	0
Tritium (for radioactivity)	100 Bq/l	388	0	0.00	0
Total		32,997	36	0.11	

Number of Water Supply Zones = 62