Small Drinking Water Systems: Who Does What in Nunavut?

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1.0 Source Water Protection

1.1 Who has a stewardship role related to water source protection (lead agency)?

Aboriginal Affairs and Northern Development Canada (AANDC) manages water resources in the Northwest Territories and Nunavut. AANDC is responsible for the development, implementation, and interpretation of all legislation and policy relating to its responsibilities for water management in the Northwest Territories and Nunavut.1 AANDC’s overall responsibility for water management is set out in Section 5 of the DIAND Act,2 which gives the department provincial-type responsibilities for the north. The federal Crown has ownership of the water and other natural resources in the Northwest Territories and Nunavut.

Water use and waste disposal into water are controlled through regulatory processes established under the federal Northwest Territories Waters Act,3 the Mackenzie Valley Resource Management Act (MVRMA)4 and the Nunavut Waters and Nunavut Surface Rights Tribunal Act.5 Water use, and waste disposal in or near water, must be either licensed by water licensing boards or authorized by regulation. The mandate of the water boards is to provide for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit for all Canadians and for the residents of the Northwest Territories and Nunavut in particular. In addition to its main responsibility under the DIAND Act and federal water legislation, DIAND has additional water management responsibilities under:

- Canadian Environmental Assessment Act6
- Arctic Waters Pollution Prevention Act
- Dominion Water Power Act8

1 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
4 http://laws-lois.justice.gc.ca/eng/acts/M-0.2/index.html
6 http://laws-lois.justice.gc.ca/eng/acts/C-15.2/
AANDC only has jurisdiction over fresh water, such as lakes and rivers. Drinking water and other water issues are the responsibility of other agencies.9

1.2 Who oversees liquid and solid waste management?

The Department of the Environment and the Department of Community and Government Services and the Department of Health (Public Sewerage Systems Regulations under the Public Health Act) work in partnership with communities to improve solid waste management and prevent pollution. They both lead the development of a Nunavut-wide Solid Waste Management Strategy.10,11

Canadian Council of Ministers of the Environment developed the Municipal Wastewater Effluent Strategy in 2009 to provide a national framework for managing wastewater. From the Strategy, the Wastewater Systems Effluent Regulations were developed and came into effect on January 1, 2013.12

The regulations apply to any wastewater system that deposits deleterious substances specified in the regulations into water frequented by fish or a place referred to in subsection 36(3) of the Fisheries Act and that is designed to collect an average daily volume of influent of 100 m3 (100,000 litres) or more or that actually collects an average daily volume of influent of 100 m3 or more during any calendar year. As of January 1, 2013, wastewater systems operators assumed the responsibility of:

- monitoring effluent quality and quantity;
- keeping records in preparation for sending initial identification reporting to Environment Canada in May; and
- recording combined sewer overflow if applicable.13

In 2010, Dalhousie University entered into a five-year contract with Department of Community and Government Services in the Government of Nunavut to investigate wastewater treatment processes in Nunavut. The objectives of the research are to:14

- determine the performance of current wastewater systems;
- determine and characterize the risk to the receiving environment and human health;
- assess technological or management solutions to improve treatment;
- develop and parameterize mathematical models to predict and assess treatment;
- propose appropriate Northern Performance Standards for the WSER.

1.3 Who is responsible for land use planning activities (from livestock to farming practices, including activities addressing drinking water concerns)?

The Nunavut Planning Commission (NPC) is responsible for the development, implementation, and monitoring of land use plans that guide and direct resource use and development in the Nunavut Settlement Area. Currently, the NPC implements and monitors the North Baffin Regional Land Use Plan and the Keewatin Regional Land Use Plan. The NPC is also working on a Draft Nunavut Land Use Plan.15 Once approved, this Nunavut-wide plan will replace the North Baffin and Keewatin Regional Land Use Plans.16

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9 http://www.aadnc-aandc.gc.ca/eng/1100100027865/1100100027867
10 http://env.gov.nu.ca/programareas/environmentprotection
12 http://laws-lois.justice.gc.ca/eng/regulations/SOR-2012-139/FulIText.html
13 http://www.auma.ca/live/MuniLink/Communications/Member+Notices?contentId=16053
14 http://centreforwaterresourcesstudies.dal.ca/projects/view/8
15 http://npc.nunavut.ca/en/draft-plan
16 http://npc.nunavut.ca/
For Iqaluit, under the direction of City Council, the Planning and Development Department is responsible for land-use planning, land development, and the administration of municipal lands.17

The Land Administrator Specialist with the Land Administration Office (AANDC) is responsible for surface rights administration. This includes the issuance of land use permits under the Territorial Land Use Regulations, leases and licences of occupation under the Territorial Lands Regulations, and the issuance of quarrying permits under the Territorial Quarrying Regulations.18

The Nunavut Planning and Project Assessment Act is to ensure clarity, consistency, and legal certainty with respect to land use planning and environmental assessment processes in Nunavut. This Act represents the first commitment flowing from the Action Plan to Improve the North’s Regulatory Regimes.19 Both the Act and the Action Plan outline planning and impact assessment frameworks for development initiatives.20

1.4 Who is responsible for ensuring that activities, such as construction of highway infrastructure, logging, or mining neither degrade source waters nor introduce contaminants into the water supply?

Aboriginal Affairs and Northern Development Canada (AANDC) works with partners including the Nunavut Planning Commission, the Nunavut Impact Review Board, the Nunavut Water Board, the Government of Nunavut, and Nunavut Tunngavik Incorporated, and with regulatory agencies including Environment Canada, Fisheries and Oceans Canada, and Health Canada.21 The Department of Health also reviews and makes recommendations on the above noted activities.

AANDC has revised the Northern Land Use Guidelines – Access: Roads and Trails, designed to guide land use activity on Crown land in the Northwest Territories and Nunavut. These guidelines are designed to assist proponents and operators in planning proposed land use activities, assessing related environmental effects, and minimizing the impacts of these activities. Activities on land under private ownership (e.g., First Nations or Inuit-owned land) and land under municipal or territorial control (e.g., Commissioner's land) require direction from the appropriate agency. The Land Administration Office is part of AANDC.22

The Contaminated Sites directorate manages contaminated sites located on Crown land in Nunavut that fall under AANDC’s control. AANDC identify waste/contaminated sites located on Crown land for which the department is liable, assess environmental impacts, clean up and manage contaminated sites on a priority basis, provide advice to northerners, and circulate educational material concerning contaminated sites. There are a number of sites in Nunavut under other federal control such as the Department of National Defense.

Legislation relating to land use includes the Territorial Lands Act23:

- Territorial Lands Regulations
- Territorial Land Use Regulations
- Territorial Quarrying Regulations
- Northwest Territories and Nunavut Mining Regulations
- Territorial Coal Regulations

18 http://www.aadnc-aandc.gc.ca/eng/1100100027931/1100100027935
19 http://www.aadnc-aandc.gc.ca/eng/1100100015534/1100100015535
20 http://www.aadnc-aandc.gc.ca/eng/1100100015531/1100100015532
21 http://www.aadnc-aandc.gc.ca/eng/1100100028179/1100100028183
22 http://www.aadnc-aandc.gc.ca/eng/1100100023568/1100100023583
23 http://www.aadnc-aandc.gc.ca/eng/1100100027931/1100100027935
1.5 Who delivers permits to draw water?

The Nunavut Water Board provides permits to draw water. Applications for a water licence are submitted to the NWB by application and fee. Subject to applicable requirements for land use planning and environmental assessment, the licensing process begins once the Manager of Licensing deems the application complete. 24

The powers and responsibilities of the Nunavut Water Board have been defined further by the Nunavut Waters and Nunavut Surface Rights Tribunal Act, (2002, c-10). 25 The purpose of the Act is to give effect to the provisions of the Nunavut Land Claims Agreement related to the management of waters in Nunavut, establish the Nunavut Water Board (and the Surface Rights Tribunal), identify transitional provisions, and make consequential and transitional amendments. Section 173(1) of the Act provides that the regulations made pursuant to the Northwest Territories Waters Act 26 will continue to apply until they are replaced or repealed under the Act. At this time, the Northwest Territories Waters Regulations (SOR/93-303) 27 continue to apply in Nunavut. 28 Under the Act, the Nunavut Water Board can issue, renew, amend, and cancel a water licence, with or without a public hearing, depending on the type of activity. Licences issued following a public hearing must be approved by the Minister of Aboriginal Affairs and Northern Development Canada (“Minister”).

The Nunavut Water Board does not have enforcement powers. Once a licence is issued by the Board, the jurisdiction of the Board ceases. Compliance and enforcement of water licences and provisions of the Act fall under the jurisdiction of the Department of Aboriginal Affairs and Northern Development Canada, whose minister appoints inspectors for that purpose. 29, 30

1.6 Who has control over the watershed and delineates the watershed/aquifer area?

The Department of the Environment (Environmental Protection Division) delivers a range of regulatory and operational program functions, including a number of commitments under the Nunavut Land Claims Agreement. The division administers the Environmental Protection Act, and all associated regulations and guidelines, recognizing that all sectors of society must share the responsibility as stewards of the environment. 31

24 http://www.nunavutwaterboard.org/en/license_appl
25 http://www.canlii.org/ca/sta/n-28.8/whole.html
26 http://www.canlii.org/ca/sta/n-27.3/
27 http://www.canlii.org/ca/regu/sor93-303/
28 However, Section 5 of the current Northwest Territories Waters Regulations, which permits some water use and waste deposit activities without a license, is inconsistent with Section 13.7.1 of the NLCA, which states that “with the exception of domestic or emergency use of water as set out in Section 5 of the Northern Inland Waters Act (RSC 1985, c. N-25), no person may use water or dispose of waste into water without the approval of the NWB.” In the case of inconsistency or conflict between the Act and the NLCA, the Act provides that the NLCA prevails to the extent of the inconsistency or conflict. Therefore, in order to uphold the letter, spirit, and intent of Section 13.7.1 of the NLCA, the NWB has passed Order 2002-253 on July 31, 2002 to the effect that the provisions of the regulations made under paragraph 33(1)(m) or (n) of the Northwest Territories Waters Act cease to apply in relation to Nunavut. This order is made pursuant to the Board’s power under clause 173(3) of the Act, and specifically nullifies the application of Section 5 of the regulations.
31 http://env.gov.nu.ca/programareas/environmentprotection
1.7 Who is responsible for the watershed/aquifer management plan? (The plan establishes measures to reduce risks. The watershed management plan may also include an incident and emergency response plan, plan for water conservation, and contingency plans for dealing with water scarcity emergencies.)

Aboriginal Affairs and Northern Development Canada’s water resource use and water quality protection planning is achieved through a comprehensive ecosystem approach; this means that planning is based on watersheds rather than political jurisdictions. Strategic water planning requires that all jurisdictions sharing a common resource be involved in the planning and research of the resource. The Mackenzie River Basin Board was established for this purpose. Under the Mackenzie River Basin Transboundary Waters Master Agreement, signed in 1996 by Canada, British Columbia, Alberta, Saskatchewan, Northwest Territories and Yukon, individual bilateral agreements between provinces/territories will be finalized to share information, water plans, practices, and procedures to manage shared watersheds.

1.8 Any source vulnerability assessment and ranking?

Nunavut has not implemented source water protection plans.

2.0 Water Treatment and Distribution

2.1 Any lead funding organization for water system planning and infrastructure improvements?

Applications for water licences are reviewed, proposals evaluated, and licences issued by water licensing boards in the Northwest Territories and Nunavut, but all Type "A" licences must be approved by the Minister of Aboriginal Affairs and Northern Development Canada (AANDC) for them to take effect. AANDC also has a policy that it will present an intervention to the boards on all major water licence applications.

The jurisdiction of the Nunavut Water Board extends to the whole territory of Nunavut (except national parks), including Inuit-owned lands where additional provisions also apply.

2.2 Any construction permits?

Municipalities grant development permits for construction. The Government of Nunavut is responsible for construction standards in the territory. There is no building permit process that exists territory-wide. The Nunavut Planning Commission ensures development conformity within the existing land use plan.

2.3 Any fee collected for water distribution?

The Nunavut Water Board manages licenses and applies an application fee and water use fee. Water use fees of varying amounts are required depending upon the classification of the undertaking and the amount of water authorized for use. Section 9 of the Northwest Territories Waters Regulations (NTWR or Regulations) outlines the fees payable by a licensee for the right to the use of water and the Nunavut Water Board’s Guide 4:

32 http://www.mrbb.ca/
33 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
34 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
35 http://www.nunavutwaterboard.org/en/license_app
Completing and Submitting a Water Licence Application for a New Licence, part 1, Section 11 provides guidance regarding the calculation of water use fees.36

2.4 Any operator permit? Any training? How are new policies disseminated?

The Government of Nunavut is proposing regulatory amendments to better deal with drinking water issues. Training for treatment plant operators is being done through the Canadian Water and Wastewater Association (CWWA), but there are language and educational barriers. The government is discussing the idea of creating a unique training course with CWWA.37

The Centre for Water Resources Studies (Dalhousie University) staff use the National Water Quality Laboratory to build local human resource capacity by providing water quality analysis training to Environmental Technology Program students at the Nunavut Arctic College as part of their curriculum.

The Department of Health through its environmental health officers provides on site informal training and education to water plant operators during routine inspections of water facilities.

2.5 Any assessment of treatment system? Any licence of treatment system? By whom?

Nunavut Water Board manages licensing.38 Department of Health conducts routine water system inspections which include source protection, treatment, distribution and water quality sampling.

2.6 Who is responsible for the maintenance and upgrade of the water treatment?

Water licensees are responsible and the Nunavut Water Board manages compliance of water licensees.39

2.7 Any requirements for the water supply system?

The licensee is required to submit an annual report to the Board that contains information about the project’s activities and performance including:40

- data generated under the monitoring program;
- quantities of water used;
- quantities of waste discharged and disposed;
- summary of any modifications and/or maintenance work carried out;
- list of unauthorized discharges and follow-up actions;
- summary of any abandonment and restoration work completed;
- any updates or revisions to management plans and/or manuals;
- summary of any studies or reports requested by the Board and a description of any future studies planned; and
- any other details requested by the Board that relate to water use and/or waste disposal.

38 http://www.nunavutwaterboard.org/en/applications
39 http://www.nunavutwaterboard.org/en/applications
3.0 Drinking Water Quality and Monitoring

3.1 Who is the lead agency for drinking water quality?

The Department of Health is the lead agency. Environmental health officers act as regulators to ensure safe drinking water. This includes source protection, water treatment (mandatory disinfection), good operation and maintenance of water supply systems, water sampling and monitoring programs, and appropriate abatement and enforcement measures.

Small populations of some communities (Iqaluit, Rankin Inlet, and Resolute Bay) have water supplied through above-ground piping (16%). Generally, Nunavut customers are delivered water through trucking. Operating costs are high, but there is a lower investment in construction and maintenance, making it the most economical solution in the north.  

Aboriginal Affairs and Northern Development Canada (AANDC) collects water quantity and water quality information.

3.2 Who defines water quality standards?

Nunavut relies on the Canadian Drinking Water Guidelines as guidance for drinking water quality.

3.3 Who is responsible for administering drinking water regulations, if any?

Environmental health officers and medical officers of health, employed by the Department of Health administer the Public Water Supply Regulations under the Public Health Act.

According to the Public Water Supply Regulations under the Public Health Act, the chief medical officer of health determines the manner and frequency of sampling for bacteriological, physical, and chemical characteristics. The Department of Health issues water sampling protocols.

There is no requirement for individual systems to provide public reporting, and the territorial government does not produce an annual report. Online reporting is not available even though a database is kept. However, there are no regulatory criteria specifying when boil water alerts should be issued or the proper notification procedures.

3.4 Who enforces regulations, if any?

The Department of Health and environmental health officers enforce the Public Water Supply Regulations under the Public Health Act.

Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA) provides for enforcement measures and penalties as well as the designation of qualified inspectors and analysts to facilitate such enforcement measures and penalties. Inspectors and analysts are designated by Aboriginal Affairs and Northern Development Canada (AANDC).

AANDC has the responsibility for inspections on licensed operations in the Northwest Territories and Nunavut. If a licensee is in contravention of the terms or conditions of their licence, it is an AANDC inspector who enforces the applicable legislation.

42 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
43 http://www.ecojustice.ca/publications/reports/waterproof-2/attachment
44 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
Conservation officers are stationed at wildlife offices in every Nunavut community and are responsible for enforcing territorial laws concerning wildlife and the environment, including the Wildlife Act, the Territorial Parks Act, and the Environmental Protection Act.45

3.5 Who ensures the accountability of government and water suppliers?

The Territorial Governments are responsible for safe drinking water in all communities in their territories, including First Nations and Inuit communities.

Responsibility for drinking water quality monitoring and boil water advisories reside with the Territorial Governments and Aboriginal Affairs and Northern Development Canada.

Environmental public health and surveillance programs were transferred when the federal government devolved certain health services to the Government of the Northwest Territories in 1988 and to the Yukon Territorial Government in 1997 and Nunavut in 1999.

Upon request, Health Canada provides scientific support and expertise to the territorial governments through the Healthy Environments and Consumer Safety Branch.46

Most of the water management business lines are carried out in the regional offices in Yellowknife and in Iqaluit. Staff in Headquarters (in the National Capital Region) develop legislation and policy and participate in national water management initiatives and corporate policy development. They also address interdepartmental and intergovernmental issues, transboundary issues, and other departmental initiatives (e.g., devolution, land claims, etc.).47

3.6 Who is responsible for the assessment of public water supply systems? (Identify critical points within the treatment process for effective monitoring, control, and management including determining treatment efficiency in the removal or inactivation of harmful agents found in the source water.)

Environmental health officers enforce the legislation, which covers a multi-barrier approach to ensure water safety. They ensure that routine bacteriological water samples are taken and analysed.

In 2011, Dalhousie University partnered with the Nunavut Research Institute and the Government of Nunavut to establish the Northern Water Quality Laboratory, the first water quality laboratory in Nunavut. Equipment for this laboratory has been provided through contracts with both the Government of Nunavut and the Nunavut General Monitoring Plan.48

3.7 Any approval process for newly built water treatment systems?

The Department of Health approves newly built water treatment systems and new water sources. The Nunavut Water Board manages licenses.

3.8 Who is responsible for monitoring the water system? Any source water monitoring?

Environmental health officers perform inspections of and review the operation of water treatment plants as well as monitor that the required water-sampling program is in place.

45 http://env.gov.nu.ca/programareas/wildlife/wildlifemgmtprog
47 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
48 http://centreforwaterresourcesstudies.dal.ca/projects/view/7
Aboriginal Affairs and Northern Development Canada, in cooperation with Environment Canada and the territorial governments, undertakes water quantity (or hydrometric) and water quality monitoring. This monitoring may include measurements of surface water flow rates/events, rain and snow measurements or other meteorological phenomena. Water quality monitoring is carried out in order to address major development and water planning and management issues.

In addition to these monitoring networks, specific targeted studies are undertaken to respond to particular issues or concerns raised in environmental assessments and license hearings. These targeted studies are often done under the Northern Water Research Studies Program (NWRSP). Also, the Nunavut Research Institute received funding under Health Canada’s Climate and Health Adaptation in Northern First Nations and Inuit Communities Program in 2009 to monitor surface water quality of two rivers: the Apex (Niaqungut) and the Sylvia Grinnell, from which Iqaluit residents collect drinking water throughout the ice-free period.

3.9 In case of adverse quality, who notifies whom (government, public, water supplier)?

If there is a problem with the drinking water quality, or the systems designed to ensure the safety of the drinking water supply, appropriate action is ordered by the Department of Health.

The Office of the Chief Medical Officer of Health and regional environmental health officers notify all the affected parties to ensure appropriate action is taken.

Aboriginal Affairs and Northern Development Canada should be consulted if contaminated surface water or groundwater is encountered.

Department of Environment has a “Report All Spills” line.

4.0 Waste Management (part of source water protection as well)

5.0 Surveillance

5.1 Any process in place to respond to health complaints?

The Department of Health is responsible for health services and would be involved in responding to health complaints in Nunavut.

5.2 Any outbreak surveillance system in place?

The Department of Health is a partner agency involved with the National Enteric Surveillance Program (Public Health Agency of Canada) designed to provide weekly analysis and reporting for laboratory-confirmed isolations of enteric pathogens in Canada, including bacterial, viral, and parasitic pathogens.

5.3 Any system in place to link outbreaks to source or system characteristics?

49 http://www.aadnc-aandc.gc.ca/eng/1100100037427/1100100037428
50 http://climatetelling.ca/community/iqaluit-ri/
51 http://env.gov.nu.ca/node/66
The **Office of Chief Medical Officer of Health** has developed and will utilize outbreak management guidelines for any communicable diseases including enteric and waterborne diseases.

*Environmental health officers* undertake investigation of any suspected waterborne disease outbreaks.

### 5.4 Who is responsible for managing outbreaks?

*Department of Health* is responsible for managing outbreaks within Nunavut. The Department of Health uses its outbreak management guidelines to manage all communicable disease outbreaks.

### 6.0 What is the Role of the Community in the Provision of Safe Drinking Water?

Communities work in cooperation with federal and territorial levels of government in the provision of safe drinking water.

**References/Notes**

*Canada’s Water*
http://www.councilofthefederation.ca/infostream.html

*A guide to Canada’s drinking water (by province/territory)*
http://www.water.ca/wkd-guide-drink-water-1.asp

Note that while the National Collaborating Centre for Environmental Health has used its best efforts to ensure the accuracy and reliability of this information, it is provided as a general reference only. Please contact federal, provincial, municipal, and other agencies noted to verify information provided.

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