

### **QA/QC of Water Supply to the Hamlet of Arctic Bay in Baffin Region**

The population of the Hamlet of Arctic Bay in 2010 is 916 and annual water consumption is 21,000 cubic meters. The source is the natural lake. Water is extracted to the Treatment Plant through an intake pipe. The intake line is heat traced with electric heating cables and for the case of the intake, the heating cable placed inside the pipe.

The plant was originally operated by a Generator. Now it is hooked up with Power line and the Generator is kept there as a standby emergency power supply.

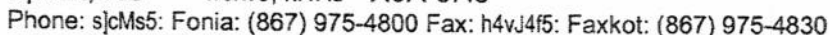
Water is disinfected inside the Treatment plant with chlorine following the guidelines given to them by the Department of Health and Social Services of Government of Nunavut. Hamlet is responsible to supply safe drinking water to the community. The regular water quality is monitored by the hamlet and QA/QC is followed along with the Department of Health and Social Services.

Hamlet tests Chlorine residual contents in the water of each water truck before delivery to satisfy the National Drinking Water Guidelines. Five samples are collected from five different locations. Sample must be kept cold but not frozen and sent via the local health centre lab box to Iqaluit Environmental Health office lab . Hamlet follows the guidelines given to them by the Department of Health and Social Services for sampling, preservation, and shipping.

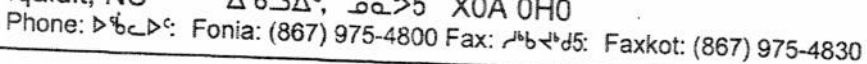
The Environmental health officers also sample at least twice annually from the field and ship the samples with them to the lab.

The Lab conducts testing on the microbiological parameters and finds the quality of water is always in good standing order.

The QA/QC plan and Procedure of the lab, sampling etc along with the hamlet is attached.



Please refer to the *Public Water Supply Regulations* pursuant to the *Public Health Act* for additional information.



**For more information on drinking water disinfection, Please contact an Environmental Health Officer at (867) 975-4800.**

## CHLORINE MIXING INSTRUCTIONS FOR CALCIUM HYPOCHLORITE 65 %

1. Put on rubber apron, rubber gloves, and face shield.
2. Read manufacturer's safety data sheet for Calcium Hypochlorite.
3. Close valves on tanks.
4. Fill mix tank on work bench with (120) litres of water.
5. Add four (4) kilo-gram (bottles) of calcium hypochlorite 65% to water.
6. Mix solution for two (2) hours.
7. Fill feed tank by opening valve at bottom of mix tank.
8. Rinse mix tank and agitator with water.
9. Reintroduce clear one inch pipe from mix tank in feed tank.
10. Test first truck of day for adequate chlorination by using HATCH Colorimeter test kit. Let the sample sit for 20 minutes then test for FREE CHLORINE per the manual. The chlorine dosage should read between 0.5 and 1.0 mg/litres before delivery.
11. Adjust the stroke and/or rate of the injection pump to either increase or decrease the chlorine dosage if required. Retest FREE CHLORINE after adjusting the stroke and/or rate.



**Instructions:**

1. Drain any water from the tank.
2. Close any drains and add 5 gallons of warm water to the tank.
3. Add 2 cups of liquid household bleach (i.e. javex) for disinfection.
4. Using a new or clean brush (mop or long handled brush is recommended), thoroughly clean the entire inside.
5. Drain the tank and flush the interior with fresh (treated) water. Ensure all dirt, etc. has been removed.
6. Refill tank with treated water for storage and use.

**Tank cleaning and disinfection is recommended once per year or more often if necessary.**

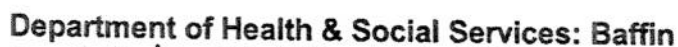


**To ensure safe drinking water, follow the procedures outlined below at least twice a year or as required:**

1. If there is excessive rust present in the interior, please ensure that this rust is scraped out.
2. The interior should then be rinsed in order to remove particles of rust.
3. Fill tank with water and add 1 gallon of 5% chlorine bleach (Javex) per 1000 gallons of water.
4. If possible, drive the truck around town to allow for proper mixing and to ensure the surface area in the interior is superchlorinated.
5. Let this solution stand for 12-24 hours to ensure proper contact time for super-chlorination.
6. Drain truck completely and fill with drinking water.
7. Contact the Environmental Health Officer to submit a water sample for bacterial analysis.

**Ensure that during the super-chlorination procedure the hose is also filled with chlorinated water for complete sanitation.**





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Okoa Kavamat Monakhikakvilikiot Olasilikiot

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Taking sanitary care of water storage tanks helps to protect your family's good health and safeguard the well-being of the entire community.

1. People can become very sick from drinking water from a tank contaminated with bacteria, viruses, or parasites.
2. To prevent tanks from being contaminated:
  - Keep the tank clean both inside and out at all times.
  - Keep the lid of the tank on and tight at all times.
  - Use only the tap to obtain water.
  - Do not use a dipper or cup to scoop water from the tank. (Bacteria on the dipper can stay in the tank and grow there.)
  - Do not store things on top of the water tank.
  - CLEAN your water tank at least once a year or more often as required.
3. If you are not sure how to clean your tank properly, contact your Environmental Health Officer or local Community Health Representative for more information.
4. If your water tank is in poor condition, contact your Housing Association about obtaining a new one.

Odd tastes or smells from the water in your water tank may mean that it has been contaminated with bacteria. Don't take chances, have your tank cleaned out regularly.

To disinfect drinking water from a lake, river, stream, snow, or ice source, make sure you **BOIL THE WATER FOR AT LEAST 1 MINUTE** to kill any harmful bacteria, viruses, or parasites.









[illegible][illegible]

## November 2010

[illegible]

## December 2010

[illegible]



# Daily Temperature Log - Refrigerator

January 2010																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Temperature above 4°C																															
Temperature = 0°C to 4°C																															
Temperature below 0°C																															
Corrective Action Taken																															
Cleaning Conducted																															
Initial																															

Notes:

February 2010																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Temperature above 4°C																															
Temperature = 0°C to 4°C																															
Temperature below 0°C																															
Corrective Action Taken																															
Cleaning Conducted																															
Initial																															

Notes:



# Daily Temperature Log - Incubator

January 2010

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Temperature above 35°C																															
Temperature = 35°C ± 0.5°C																															
Temperature below 35°C																															
Corrective Action Taken																															
Cleaning Conducted																															
Initial																															

Notes:

February 2010

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
Temperature above 35°C																															
Temperature = 35°C ± 0.5°C																															
Temperature below 35°C																															
Corrective Action Taken																															
Cleaning Conducted																															
Initial																															

Notes: