August 25, 2017

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act, 2015 [Our File #: MAE/48/2017]

On July 28, 2017, the Department of Municipal Affairs and Environment received your request for access to the following records/information:

"Confirm Deer Lake water supply was distributed to the town's lines via a creosote treated wooden penstock? How many years this was operated through the treated penstock? Has any chemicals shown up in water test that could be attributed from the treatment product used on this penstock? Were there ever concerns about health risk to residents drinking water from a treated wooden penstock? If yes? When and from whom? Has any Health Dept looked into if Deer Lake has a higher than NL average health issues."

On August 3, 2017, your request was partially transferred to the Department of Health and Community Services (HCS) under authority of section 14 of the Access to Information and Protection of Privacy Act, 2015 (the Act). The following part of your request was transferred to HCS:

"Were there ever concerns about health risk to residents drinking water from a treated wooden penstock? If yes? When and from whom? Has any Health Dept looked into if Deer Lake has a higher than NL average health issues."

The Department of Municipal Affairs and Environment continued to process the following part of your request:

"Confirm Deer Lake water supply was distributed to the town's lines via a creosote treated wooden penstock? How many years this was operated through the treated penstock? Has any chemicals shown up in water test that could be attributed from the treatment product used on this penstock?"
I am pleased to inform you that a decision has been made by the Deputy Minister to grant access to the requested information.

In accordance with your request for a copy of the records, the appropriate copies have been enclosed.

Regarding the first portion of your request for access to the following records/information:

"Confirm Deer Lake water supply was distributed to the towns lines via a creosote treated wooden penstock?"

Please note that pages 57, 60, 62, 63 and 76 of the responsive package, as well as the project plans on pages 67-75, confirm that the Deer Lake water supply was indeed distributed via penstocks. Page 81 of the responsive package confirms that these penstocks were wooden. However, we do not have any record confirming that these wooden penstocks were treated with creosote.

Regarding the second portion of your request for access to the following records/information:

"How many years this was operated through the treated penstock?"

Although we do not have any records indicating the exact number of years the Deer Lake water supply was distributed via wooden penstocks, page 57 of the responsive package confirms that in August of 1970, the Town of Deer Lake was obtaining its water supply from penstocks. Page 63 of the responsive package confirms that on August 8, 2000, approval was given to the Town of Deer Lake to install a new intake connection which would relocate the intake from the penstocks to a thimble at the main control structure. Pages 76 and 81 confirm that this work had already taken place as of April, 2001. Therefore, we can confirm that the Deer Lake water supply was distributed via wooden penstocks for at least 30 years.

Regarding the final portion of your request for access to the following records/information:

"Has any chemicals shown up in water test that could be attributed from the treatment product used on this penstock?"

Please note that the 1971 Chemical Analysis of Water found on page 59 of the responsive package indicates there were no concerns detected for the Town of Deer Lake. The report entitled "Atlantic Region Federal-Provincial Toxic Chemical Survey of Municipal Drinking Water Sources 1985-1988 – Interpretive Report" found on pages 1-56 of the responsive package shows that no drinking water quality concerns were flagged for the Town of Deer Lake during the late 1980s.

As mentioned above, please note that we have no record confirming that the wooden penstocks were treated with creosote. Creosote is not an inorganic parameter that is normally analyzed when it comes to drinking water sources. As such, we have no record of any creosote testing with regards to drinking water in the Town of Deer Lake. You can find a listing of the regular monitoring parameters on our departmental website: http://www.mae.gov.nl.ca/waterres/regulations/policies/water_quality.html
Please be advised that nothing of concern has ever been identified via water quality monitoring for the Town of Deer Lake that warranted any special testing as a result of the wooden penstocks. You can access more information on drinking water quality data for the Town of Deer Lake via the Newfoundland and Labrador Water Resources Portal found on our departmental website: http://maps.gov.nl.ca/water/

Section 42 of the Access to Information and Protection of Privacy Act (the Act) provides that you may ask the Information and Privacy Commissioner to review the processing of your access request. A request to the Commissioner must be made in writing within 15 business days of the date of this letter or within a longer period that may be allowed by the Commissioner.

The address and contact information of the Information and Privacy Commissioner is as follows:

Office of the Information and Privacy Commissioner
2 Canada Drive
P. O. Box 13004, Stn. A
St. John's, NL A1B 3V8

Telephone: (709) 729-6309
Toll-Free: 1-877-729-6309
Facsimile: (709) 729-6500

You may also appeal directly to the Supreme Court Trial Division within 15 business days after you receive the decision of the public body, pursuant to section 52 of the Act.

Please be advised that responsive records will be published following a 72 hour period after the response is sent electronically to you or five business days in the case where records are mailed to you. It is the goal to have the responsive records posted to the Completed Access to Information Requests website within one business day following the applicable period of time. Please note that requests for personal information will not be posted online.

If you have any further questions, please feel free to contact me by telephone at 709-729-3631 or by e-mail at debikeith@gov.nl.ca.

Sincerely,

DEBI KEITH
ATIPP Coordinator
Policy and Strategic Planning

Endlosures
Access or correction complaint

42. (1) A person who makes a request under this Act for access to a record or for correction of personal information may file a complaint with the commissioner respecting a decision, act or failure to act of the head of the public body that relates to the request.

(2) A complaint under subsection (1) shall be filed in writing not later than 15 business days

   (a) after the applicant is notified of the decision of the head of the public body, or the date of the act or failure to act; or

   (b) after the date the head of the public body is considered to have refused the request under subsection 16(2).

(3) A third party informed under section 19 of a decision of the head of a public body to grant access to a record or part of a record in response to a request may file a complaint with the commissioner respecting that decision.

(4) A complaint under subsection (3) shall be filed in writing not later than 15 business days after the third party is informed of the decision of the head of the public body.

(5) The commissioner may allow a longer time period for the filing of a complaint under this section.

(6) A person or third party who has appealed directly to the Trial Division under subsection 52(1) or 53(1) shall not file a complaint with the commissioner.

(7) The commissioner shall refuse to investigate a complaint where an appeal has been commenced in the Trial Division.

(8) A complaint shall not be filed under this section with respect to

   (a) a request that is disregarded under section 21;

   (b) a decision respecting an extension of time under section 23;

   (c) a variation of a procedure under section 24; or

   (d) an estimate of costs or a decision not to waive a cost under section 26.

(9) The commissioner shall provide a copy of the complaint to the head of the public body concerned.
Direct appeal to Trial Division by an applicant

52. (1) Where an applicant has made a request to a public body for access to a record or correction of personal information and has not filed a complaint with the commissioner under section 42, the applicant may appeal the decision, act or failure to act of the head of the public body that relates to the request directly to the Trial Division.

(2) An appeal shall be commenced under subsection (1) not later than 15 business days

(a) after the applicant is notified of the decision of the head of the public body, or the date of the act or failure to act; or

(b) after the date the head of the public body is considered to have refused the request under subsection 16(2).

(3) Where an applicant has filed a complaint with the commissioner under section 42 and the commissioner has refused to investigate the complaint, the applicant may commence an appeal in the Trial Division of the decision, act or failure to act of the head of the public body that relates to the request for access to a record or for correction of personal information.

(4) An appeal shall be commenced under subsection (3) not later than 15 business days after the applicant is notified of the commissioner’s refusal under subsection 45(2).
Potential copyright material

If you wish to obtain a copy please contact the ATIPP Office at (709) 729-7072 or atippoffice@gov.nl.ca.
On Saturday and Sunday August 1st and 2nd, 1970 a visit was made to the town of Deer Lake. Arrangements had been made with Mr. Grant Hiscock, Town Manager, and Mr. Ron Smith, acting Chairman of the Public Works Committee of the Town. Mr. Smith had asked for a meeting at the time of my visit to Gander on July 7th, 1970 and this was a follow up.

The town of Deer Lake obtains its water supply from the penstock of the Bowaters Power Corporation and the supply is chlorinated using a Wallace & Tiernan V-Notch chlorinator paced by a Foxboro indicating flow meter. The maximum chlorine dose is 10 pounds per day although the chlorinator has a rotameter tube rated at 30 pounds per day. The chlorinator has not been operating in the automatic mode for something over one year. Mr. Hiscock said that he had talked to Ralph MacInnis the Wallace and Tiernan representative and asked him to come in and have a look at the instrument on his return trip across Newfoundland, but apparently this was not done. The present method of operation is for a fixed dose of chlorine to be applied to the water, this apparently is at the rate of 5 or 6 pounds per day and this would result in a varying dose. However, there are places at the extreme end of the system which do not have chlorine residuals showing. Tests for coliform bacteria which have been carried out by the Department of Health indicate that there are less than 4 in all samples.

Sewage disposal from the community which is about 60% sewered at the present time is by discharge through a barminutor into the tail waste from the power station. Occasionally some evidence of sewage discharges is seen in the tail waste but this is quite occasional.

A more serious pollution in the lake occurs from the rafting of pulp wood. Large quantities of bark are deposited on the beach which would otherwise would be a marvelous sandy beach and probably large quantites of bark exist on the bottom of the lake. In addition to the bark, actual pulp logs litter the whole beach except in an area near the mouth of the Humber River where the beach has been cleared by the Town for a municipal park. The rafts of pulp wood, in addition to depositing bark and creating a boating hazard with floating and partially floating logs also causes discoloration of the water. Considerable areas of the lake are barred to boaters because of the floating logs.
The swimming area is tested at intervals by the Department of Health and Mr. Hiscock informed me that the latest set of three tests showed 10 and 12 coliform per 100 milliliters. This is exceptionally good for the swimming area and is probably explained by the fact that the river discharges into and across the swimming area.

In meeting with Mr. Smith and Mr. Hiscock I informed them that further extension of the sewer system would necessitate a treatment plant installation for the town. Their present thinking is that to expand the sewage collection system to serve up to 83% of the community from the present 60%, I suggested that a rated aeration plant meter package for custom built would probably be the proper type for that location. I further advised them that a loan for two-thirds of the cost of the sewage treatment and trunk collectors could be obtained from Central Mortgage and Housing Corporation with 1/3 of the loan being forgiven but that this was the only aid given by a straight formula. It might be that they would be able to obtain other assistance from the Provincial Department of Municipal Affairs and Housing. I advised them of course that their plans and specifications would require approval of the Minister of Mines, Agriculture and Resources prior to their beginning construction. I was advised that a study has been done by Proctor and Redfern some five or six years ago but that the town would be seeking the advice of Municipal Affairs as to whom they should retain as consultants for this contemplated extension of collection system and treatment plant construction.

A visit was made to the site of the asphalt plant at Birchy Lake. There had been reports that an oil slick was sighted on Birchy Lake and the suspicion was that the asphalt plant was responsible. During our visit to the plant operations site there was no evidence oil would or did leak into the lake. Although the operation was quite close to the lake there was a definite band of undisturbed land between the lake and the plant and there was no sign that oil would or had reached the water. The construction camp for the asphalt plant was observed and there was no indication of oil discharge from it to the lake. It was located on the side of the Trans Canada Highway remote from the lake although there was a stream nearby. The stream showed no indication of contamination.

H. T. DOANE, P. Eng.,
Sanitary Engineer.

c.c. G. Hiscock,
Town Manager, Deer Lake.

G. B. Malone,
Deputy Minister, Dept. of Resources
# Chemical Analysis of Water

**Location:** Deer Lake, Nfld.  
**Date Sampled:** March 18, 1970  
**Identifying Marks:** Grand Lake  
**Sampled By:** D. Winsor

**Submitted By:** Health Inspection Div.  
**Date Received In Lab.:** March 30, 1970  
**P.O. Box 306, Corner Brook, Nfld.**

<table>
<thead>
<tr>
<th>Ions, Etc., In Parts Per Million</th>
<th>Ions, Etc., In Parts Per Million</th>
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</thead>
<tbody>
<tr>
<td>PH Value</td>
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<tr>
<td>Hardness (EDTA) as CaCO₃</td>
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<tr>
<td>Alkalinity—Phenolphthalein as CaCO₃</td>
<td>0 Nil</td>
</tr>
<tr>
<td>Total as CaCO₃</td>
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<tr>
<td>Iron (Fe) (Total)</td>
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<td>Manganese (Mn) (Total)</td>
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<td>Color (Units)</td>
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<td>Turbidity (Units)</td>
<td>J.T.U.</td>
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<td>Nitrate Nitrogen (N)</td>
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<tr>
<td>Nitrite Nitrogen (N)</td>
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<tr>
<td>Free Ammonia Nitrogen (N)</td>
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<tr>
<td>Albuminoid Nitrogen (N)</td>
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<td>Calcium (Ca)</td>
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<td>Magnesium (Mg)</td>
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<td>Sodium (Na)—Calculated</td>
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<td>Bicarbonate as CO₃</td>
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<td>Sulphate (SO₄)</td>
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<td>Chloride (Cl)</td>
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<tr>
<td>Nitrate (NO₃)</td>
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<td>Fluoride (F)</td>
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<tr>
<td>Silica (SiO₂)</td>
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<td>Total Dissolved Solids—Determined</td>
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<tr>
<td>Specific Conductance (Micromhos/cm)</td>
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</tr>
</tbody>
</table>

**Remarks:** N.D. = None Detected

**Date:** April 2, 1971  
**Chemist:** D. Lockerbie

W.S. 37 Rev. 5-64

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[Signature: Deer Lake 74]
Memo To: Haseen Khan, P.Eng
Manager
Community Water and Wastewater Section

From: Ervin McCurdy, CET
Western Region
Community Water and Wastewater Section

Re: Deer Lake - EDM Report on Treatment of Giardia & Subsequent Meeting

I have reviewed the DRAFT Preliminary Report on Options Available to Town of Deer Lake for Treatment of Giardia and offer the following comments:

- It is acknowledged that the document received is a Draft, and as such contains typographical errors as well as some mathematical errors. These have been discussed with the author of the report, and he is aware of them.

- **Section 2.0 Present Situation in Deer Lake**
   This section mistakenly assumes the contact time between the chlorination facility and the first user to be 20 minutes. This is a gross exaggeration, as the contact time is more in the order of 5 minutes, given the proximity of homes to the facility. The statement regarding the Watershed Management Committee is accurate, and this activity is most likely the only level of protection against giardia currently in place. The 0.5 log inactivation allowed for this barrier is in order.

- **Section 3.2 Intake**
   As noted in the report, the removal of the intake from the penstock to the thimble at the Deer Lake Power Forebay is highly recommended. At present, the town is at the mercy of the penstock owner, and should there occur an event such as a penstock rupture, or downtime for maintenance, the Town is without water. Relocation of the line to the thimble is supported by Deer Lake Power as well for the same reasons. This option has already been agreed upon by the two parties concerned.
Conclusions/Recommendations
The report has presented 2 options, with costs ranging from approximately $11.5 million to $1.2 million. The least costly has obviously been chosen, recommending the use of a thread filter available from Filtromat, followed by chlorination. Chlorine contact time will be increased by the installation of additional transmission mains and a storage tank. This would increase Peak Flow CT to 26. The Watershed Management Committee, the filtration equipment and the additional chlorine contact time will provide a multi-barrier approach that should provide a reasonable level of assurance that the consumer has been afforded protection from giardia, and in future from cryptosporidia.

A meeting was held at the Deer Lake Council Office on September 17, 1998 to review the report, and to view a presentation by the supplier regarding the thread filter. At that time as well, the supplier was to set up a small scale filtration unit in the town to determine filter performance. To date, no results have been received from those tests.

Ervin McCurdy, CET
DEPARTMENT OF ENVIRONMENT AND LABO
WATER RESOURCES MANAGEMENT DIVISION

FILE 562.160.7

DATE: Aug 8, 2000

TRANSMITTAL SLIP FOR:
- Certificate of Approval
- Order for Gazetting
- Watershed Protection
- Water Use Authorization
- Well Drilling Licence
- Other

ORIGINATOR: Eric McCurdy

DIRECTOR: Martin Sewell

OTHER: —

A.D.M. —

Deputy Minister: —

PLEASE:
- Sign original and all attached copies
- Return to K in formatting and copying
- Affix Seal with Official Department Stamp

COMMENTS:
This is Sheet 1 of 4: Use Site 1 Water Treatment. All piping and intake connects to freeboard on perimeter in 100 ft. and 100 square m. to 2 H.P. Heat pipe will be reworked to allow for future use.
GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Labour

Certificate of Approval

Pursuant to the Environment Act, SN 1995, c E-13.1

Section(s) 6

Date: August 8, 2000

Approval No.: WS00-07-0350

Proponent: Town of Deer Lake
P.O. Box 940
Deer Lake, NF
A0K 2E0

Attention: Mr. Walter Dominie, Town Manager

Re: Water Treatment, Phase 2 - Intake & Water Main
Deer Lake

Approval is hereby given for installation of approximately 580 metres of 450 mm φ PVC or DI Water Main; connection to the new intake at the Deer Lake Power Penstock; and related works and appurtenances, as shown on drawings entitled "Town of Deer Lake, Water Treatment Phase 2", numbered 20013, sheets C-01 to C08 excepting sheets or portions thereof marked N.I.C., submitted in July 2000 by EDM Consultants Ltd.

This approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies.

This approval is subject to the terms and conditions indicated in Appendix A (attached).

It should be noted that prior approval of any significant change in the design or installation of the proposed works must be obtained from the Department of Environment and Labour.

Failure to comply with the terms and conditions will render this approval null and void, place the proponent and their agent(s) in violation of the Environment Act, SN 1995, c E-13.1 and make the proponent responsible for taking any remedial measures as may be prescribed by this Department.

[Signature]
MINISTER
1. The works proposed in this undertaking must meet the requirements of the latest applicable codes and standards and in particular, the Government of Newfoundland and Labrador Guidelines for Design, Construction and Operation of Water and Sewerage Systems, 1980 and the Municipal Water, Sewer and Road Specifications.

2. A copy of the Municipal Water, Sewer and Roads Master Construction Specifications must be on site at all times.

3. All necessary measures must be taken to prevent damage to land, vegetation, and watercourses, and to prevent pollution of bodies of water by labour force, equipment, and construction operations. Water pumped from excavations and work areas and discharged directly or indirectly to receiving waters must comply with The Environmental Control Water and Sewage Regulations C. Nfld. Reg. 1078/96.

4. All areas affected by the proposed work must be restored to a state that resembles the local natural conditions. Further remedial measures to mitigate environmental impacts can and will be specified, if necessary in the opinion of the Department of Environment and Labour.

5. Liaison is to be maintained with the Water and Wastewater Specialist representing the Community Water and Wastewater Section, Department of Environment and Labour, during the construction and operation of the project. He can be reached at telephone (709) 637-2481.

6. Officials of the Department of Environment and Labour may visit the project from time to time to ensure that work is carried out within the provisions of this Certificate of Approval, and is not creating any environmental hazard.

7. All new lines and appurtenances must be disinfected by an approved method such as described in the Water Mains Standard for Disinfecting, C651-92 prepared by the American Water Works Association. The solution used for disinfecting waterlines may not be discharged to a water course without the prior permission of the Regional Environment Office in Corner Brook, telephone 637-2481. In this regard, a maximum chlorine residual of 1.0 ppm will be permitted in the water to be discharged. After final flushing, samples shall be collected and tested for bacteriological quality. The sampling locations shall be determined by the engineer. A copy of the test results shall be submitted to the Regional Environment Office (Water Resources Management Division) before the line is placed in service.

8. All new waterlines and appurtenances shall be hydrostatically tested in accordance with the American Water Works Association Standard, C600.
9. Any changes in the approved works, or works other than those specified in the application, must be submitted, in writing, to the Department of Environment and Labour, and approved, in the form of an Amendment to this Certificate of Approval, prior to any field work. Copies of this Approval, as well as any subsequent Amendments, must be provided to the contractor(s) who will be carrying out these works, and to the engineer's site representative.

10. The attached Appendix B for Certificate of Approval No. WS00-07-0350 must be completed and returned to this Department upon completion of the approved works.

11. This Approval is valid for two years from the date of issue. Installation must be completed by that date or the application and approval procedure must be repeated.
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Environment and Labour

Approval No. WS00-07-0350

August 8, 2000

cc. EDM Consultants Ltd.
P.O. Box 1240
Deer Lake, NF
A0K 2E0
Attn: Mr. Terry Coates, P.Eng

cc: Dept. of Municipal & Provincial Affairs
Municipal Engineering Services
P.O. Box 8700
St. John's, NF
A1B 4J6
Attn: Mr. Wayne Churchill, P.Eng, Director

cc: Dept. of Municipal & Provincial Affairs
P.O. Box 2006
Corner Brook, NF
A2H 6J8
Attn: Mr. Dan Hynes, P.Eng.

cc: Dept. of Government Services and Lands
Regional Government Service Centre
P.O. Box 2006
Corner Brook, NF
A2H 6J8
Attn: Mr. Shawn Tetford, Regional Director

cc: Department of Environment and Labour
P.O. Box 8700
St. John's, NF
A1B 4J6
Attn: Mr. Haseen Khan, P.Eng.
Manager, Community Water & Wastewater Section

cc: Dept. of Environment & Labour
Water Resources Management Division
P.O. Box 2006
Corner Brook, NF
A2H 6J8
Attn: Mr. Ervin McCurdy, CET
Water and Wastewater Specialist
Potential copyright material

If you wish to obtain a copy please contact the ATIPP Office at (709) 729-7072 or atippoffice@gov.nl.ca.
GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR

Department of Environment
Water Resources Management Division
Community Water and Wastewater Section

April 16, 2001

Memo To: Haseen Khan, P.Eng
Manager
Community Water and Wastewater Section

From: Ervin McCurdy, CET
Water and Wastewater Specialist
Community Water and Wastewater Section – Western Region

Re: Letter to Town of Deer Lake from MOH Dr. wasmeier re Proposed Filtration System

As we discussed by telephone, attached is a copy of the above noted letter, sent to me by EDM Consultants Ltd. They were asked by the town to address the concerns raised in the letter. The Town is very concerned by the letter and the possibility that have been raised at this late stage.

By way of background, the Town has been on a BWA since October 1996 because of the presence of giardia cysts. Since that time, considerable study has been undertaken to address the problem, and it was decided to proceed using a Durpro thread filter process. As well, the intake has been relocated from the penstocks to the thimble at the main control structure to provide additional chlorine contact time, and a watershed management committee has been established. This multi barrier approach was seen as the best and most economical solution, and water quality did not indicate the need for full scale conventional treatment. These decisions were made by a committee comprised of the Town, this Department, Municipal and Provincial Affairs, and the GSC. The lines of communication were kept open to Health and Community Services as well.

The letter in question now appears to question the validity of the work of the committee, and the capital works installed to date. A second filter is to be installed later this summer to provide continuous filtration, and UV disinfection will augment chlorination.

I have discussed the matter with Dan Hynes of MAPA, and we both feel that this letter contains a number of inaccuracies, and attempts to address issues outside the jurisdiction and area of expertise of Health and Community Services.

I also discussed the letter with Deer Lake Town Manager Walter Dominie (who was relieved to hear that we have some concerns with the letter). Mr. Dominie indicated that they intend to proceed as planned, and they have asked EDM to prepare a response to the technical issues. As well, the Mayor
Re Letter from MOH to Deer Lake

intends to respond.

In her letter, Dr. Wasmeier makes reference to "...the amount of organics in your raw water." and "...the enormous quantity of organics alone may trap microorganisms..."

In fact Deer Lake's raw water is better than most supplies with simple chlorination. The average THM levels are 24.8, their raw water colour is 24 TCU, turbidity is 0.28 NTU and DOC is 3.1 mg/L on an average of 44 samples. This is not indicative of a water supply high in organics.

The 4th paragraph raises the issue of residual maintenance throughout the system. This is really a separate issue from the filtration technology issue, and can be addressed separately if it becomes necessary. Again, this is an issue common to many other supplies, and the implementation of the filtration technology should not be held ransom to this issue.

A response to Health and Community Services Western, copied to the Town of Deer Lake may be advisable in this instance, to challenge in particular the statements regarding water quality. EDM will no doubt address the details such as continuous filtration and backwashing. These questions were satisfactorily addressed at the last committee meeting with the equipment suppliers, and will be more thoroughly addressed in our approval process.

Sincerely,

Ervin McCurdy, CET
Water and Wastewater Specialist
2001 04 02

Mr. Walter Dominus
Town Manager
P.O. Box 540
Deer Lake, Nfld.
A0K 200

Dear Mr. Dominus:

As you know, Shawn Telford, Isaac Anderson and I met on March 29, 2001 to review your correspondence dated March 26, 2001. Thank you for the telephone contact on that day. It clarified some issues for us.

One of the primary problems you face is the amount of organic material in your raw water. This limits the effectiveness of chlorine because the organics bind with the chlorine to form by-products and the chlorine is therefore not available to kill potential disease causing organisms in the water. In addition, the enormous quantity of organics alone may trap microorganisms and allow them to get thru and cause human disease. In past discussions there was also some concern regarding unfiltered raw water getting into the system. We need to know for sure that no raw water is getting into the public drinking water without filtration. Could you please outline how the dual filter will work including the back washing process?

Your consultants state that "the UV process would provide a secondary treatment whereby giardia cysts would not be able to reproduce". Would you please get us copies of their sources? We have multiple sources that report that UV is relatively ineffective against protozoa such as giardia, which can be removed by filters of less than 3 um (one source recommends 1 um). Health Canada states that even point of use UV light devices should be accompanied by a prefiltre to remove protozoa cysts and reduce turbidity, thus improving the effectiveness of UV light. Please see attached article. In addition, do your consultants have any information regarding the effectiveness of UV in waters with dissolved and suspended solids similar to the Deer Lake system. Depending on the information and supporting documentation found, if your chlorination system is working appropriately will there be any need to have UV?

Another issue which we discussed concerns continued chlorination throughout your water distribution system. Given the configuration of your public drinking water system, have your consultants considered how you are to maintain a chlorine residual throughout the town? The Giardia is one issue. Bacteria such as E-coli can be reintroduced into your system through broken pipes and cross connections and if chlorine residuals are not maintained the public could be at risk.
Page 2

As we explained to you on the telephone, the ultimate test as to whether your water is safe to drink is when samples at the beginning and in various locations throughout your town show no evidence of disease causing microorganisms and chlorine residuals are obtained to protect against breaks in the system that might introduce disease causing organisms. The proof that your system is working correctly will come only after testing can be carried out. Unfortunately we are not able to make that determination based on technical information alone especially when supporting documentation is limited and often contradictory. We are, however, very pleased that you are continuing to evaluate options to eventually have the boil advisory removed. We understand that this is a pilot and would appear to be movement in the right direction. Unfortunately we are unable to provide any guarantee at this stage that this proposal will solve your problem.

We look forward to your consultant’s follow up on the above questions and any additional information that the town or your consultants can provide.

Yours sincerely,

Dominic Wamsteke, M.D.
Executive Director

MW/ep

c.c. Shawn Testford
    Isaac Anderson
    Darryl Johnson
Dr. Minnie Wasmeier,
Executive Director,
Health & Community Services,
Western Region,
P.O. Box 156,
Corner Brook, Nfld., A2H 6C7.

Dear Dr. Wasmeier;

Re:- Municipal Water System - Deer Lake, Nfld.

This will acknowledge receipt of your letter of April 2nd, 2001 addressed to Mr. Walter Dominie, Town Manager.

To be quite frank, your letter appears to have missed the point of what we have done to date; and what we propose to do in future.

In paragraph two of your letter you say that “one of the primary problems you face is the amount of organic material in your raw water.” The fact that we have a filter which processes all water flowing through our system with a 98.6% removal of everything greater than 5 microns is completely ignored. This rate of removal, or better, has been consistent since the start-up of the filter in January 2000. The current filter is off-line for 14 to 15 minutes on an average of 15/18 hours. That is the only time any raw water enters the system. Chlorination takes place at all times.

Water testing on April 16th, 2001 by an independent laboratory using a Spectrex Laser particle counter showed 98.8%, or 1.9 Log removal. Raw Inlet water was measured at 10.00 mg/l of TSS. This is a 99.9% reduction in suspended solids, primarily organic material.

This is not a ‘pilot’ project, except for the funding arrangement which we have with the Department of Municipal Affairs. It is a fully operating system processing all water used on a 24 hour continuous basis; with the exception of the off-line period mentioned above. I question whether there is a filtration system anywhere in the Province which can match what we have. The vast majority of municipal water systems merely chlorinate raw water; with the effects outlined in paragraph two of your letter. Presumably that is why so many municipal water systems have THM’s in excess of the current Canadian Water Quality Guidelines. Burgeo, Corner Brook, Dunville, Gander, Harbour Grace, and St. Georges are examples. Under those Guidelines the maximum acceptable level is 100 ug/l. Deer Lake water is 35 ug/l.

Now as to ‘Turbidity’: It is my understanding, as is the case with all lay persons, that it is caused by particles such as clay, silt and microorganisms which will not readily settle and cause a cloudy appearance. The current Canadian Water Guidelines maximum acceptable level is 1.0 NTU. Deer Lake water is 0.28 NTU.
With regard to 'Colour': This is caused primarily by organic material. While not typically a health concern, colour does indicate a certain level of impurities. 'True colour' refers to the colour of a sample with its turbidity removed. Turbidity contributes to 'apparent' colour. The current Canadian Water Guidelines maximum acceptable level is 15 TCU. Deer Lake water is 24 TCU. Water may be dark but not turbid; turbidity and colour should not be confused. There must be many places around the Province where unfiltered water clearly exceeds the above Guidelines.

All of the above facts have been available to you and your officials, and will continue to be available.

Before I repeat the remedial action proposed in Mr. Dominie's letter to Mr. Shawn Tetford on March 26th, 2001, I want to make something abundantly clear. Of all the Mayors in the Province, I believe I am the only one who is a member of the legal profession. I understand the legal implications of any action by Council to circumvent the rules. This Council has no intention of doing anything wrong. We just want to be treated fairly, and in accordance with objective standards; whatever they may turn out to be. We know the Canadian Water Guidelines, and we also know that there are no Provincial standards.

When I became Mayor just over three and a half years ago, there had been a Boil Order on for some time. All that was being done was to take water samples for analysis, which solved nothing. This Council, after due deliberation, decided to take a 'multiple barrier approach'. It was determined that the Protected Watershed Area protected very little, as it did not include the Main Dam area and the entrance to the Canal.

There was a fish farm operating at the Main Dam, authorized by Provincial authorities, seemingly without regard to the fact that it was the beginning of the 'drawdown' to our water supply. Fish food bags were regularly hooked out of the grills at the Gatehouse; a clear indication that everything else was flowing through. The fish farm subsequently went out of business. There has not been an adverse water sample since.

Our first step was to have the Protected Watershed Area extended to include everything from the outside headlands, leading to the Main Dam and the Canal. The next step was to get the mess cleaned up.

We then began a search of filtration systems which would be both efficient and cost effective. The MTG, which has been in operation since January 2000, is the result of that search. It was approved by various officials, including the Department of Municipal Affairs. This same system has been in use in Israel, England and Australia for years. These are highly populated countries with long histories of continuous occupation. In the case of Israel and England, they also have polluted water.

Next we changed our water intake from the wooden penstocks. It now flows from the steel thimbles just inside the Gatehouse, with an alternate for shutdowns on another steel thimble.
In view of the fact that the MTG filter has been so efficient, we plan to install another inline. It's flushing cycle will operate while the first filter is in continuous operation. Thus, there will not be any raw water entering the system.

Out of an over abundance of caution, we propose UV disinfection as the next step. We are told that the primary benefit of using ultraviolet light for disinfection is the fact that it is non-chemical. It is a process which is simple, inexpensive and reliable for reduction of bacteria; up to 99%. If this is no good, please tell us; you are the experts.

The final step we propose is to relocate the chlorination plant to the intake at the Gatehouse. This will provide sufficient contact time for chlorine.

It will be appreciated that because of infrastructure funding constraints, not entirely on our side, these steps cannot be undertaken in one budget year.

All of these steps were outlined in our correspondence. Our consultants and officials are, and have been, available for consultation.

We have taken steps, and proposed others, above and beyond what appears to be required in other municipalities. On an objective assessment of what we have done and proposed, we need an answer. What must we do to solve our problem and remove the Boil Order? We cannot continue to spend taxpayers money based on elusive standards, or no standards at all.

Perhaps you would like us to consider charcoal filters, made from bones from India; the origin of which may be doubtful, and the public acceptance of which may be equally doubtful.

Please tell us what we must do to resolve this problem. Also, please make whatever standards may be developed applicable to all municipalities.

Yours truly,
(C.J. Gooyear)
Mayor.

c.c. Hon. Gerald Smith,
Hon. Oliver Langdon,
Hon. Rick Woodford,
Hon. Ralph Wiseman,
Mr. Shawn Tetford,
Mr. Dan Hynes,
Mr. Erwin McCurdy.