

**PERMIT TO ALTER A BODY OF WATER**

Pursuant to the *Water Resources Act*, SNL-2002 cW-4.01, specifically Section(s) 39, 48

Date: **OCTOBER 16, 2015**

File No: **524**  
Permit No: **ALT8348-2015**


Permit Holder: **Town of Grand Bank  
PO Box 640  
Grand Bank NL A0E 1W0**

Attention: **Mr. Wayne Bolt, Town Manager**

Re: **Grand Bank Brook Dam Upgrades**

Permission is hereby given for :

- This Permit does not release the Permit Holder from the obligation to obtain appropriate approvals from other concerned municipal, provincial and federal agencies.
- The Permit Holder must obtain the approval of the Crown Lands Administration Division if the project is being carried out on Crown Land.
- This Permit is subject to the terms and conditions indicated in Appendices A and B (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this Permit must be obtained from the Department of Environment and Conservation under Section 49 of the *Water Resources Act*.
- Failure to comply with the terms and conditions will render this Permit null and void, place the Permit Holder and their agent (s) in violation of the *Water Resources Act* and make the Permit Holder responsible for taking any remedial measures as may be prescribed by this Department.



MINISTER

**APPENDIX A**  
**Terms and Conditions for Permit**

**Dam/Reservoir Design**

1. Reservoirs must be provided with a spillway of adequate capacity to safely discharge design flows at non-erosive velocities without causing flooding of the reservoir or damage to the spillway or section downstream channel.
2. The normal operating water level in the reservoir shall be an elevation 19.2 metres.
3. The dam shall provide a minimum freeboard of 0.91 metres between the normal operating water level elevation and the crest of the dam. The dam crest will act as an overflow spillway during high flow events.
4. Alteration of the natural minimum streamflow is not permitted in order to preserve aquatic life.
5. The dam and appurtenant structures shall be constructed at the following coordinates:

Name	Datum	Northing (m)	Easting (m)	Zone
Grand Bank Brook Dam	NAD83	5215377.5	593974.4	21

6. The dam(s) must have the following dimensions:

Name	Height of Dam/Elev of Dam (m)	Elev of Spillway (m)	Maximum Water Elevation (m)	Minimum Water Elevation (m)
Grand Bank Brook Dam	12.5/20.12	19.2	20.12	13.72

7. To safely convey peak flows the dam(s) must be designed according to the following hydraulic criteria:

Name	Design Return Period (years)	Minimum Flow Capacity (m <sup>3</sup> /s)
Grand Bank Brook Dam	1/3 between 1/1000 and PMF	> 71.8

**General Alterations**

8. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
9. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
10. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
11. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
12. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be

confined to dry stable areas.

13. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
14. During the construction of concrete components, formwork must be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
15. Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed.
16. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of the Department.
17. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
18. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
19. The attached Completion Report (Appendix C) for Permit No. 8348 must be completed and returned to this Department upon completion of the approved works. Pictures must be submitted along with the completion report, showing the project site prior to and after development.
20. This Permit is valid for two years from the date of issue for all construction related work. Construction work must be completed by that date or the application and approval procedure must be repeated. The following terms are valid for the life cycle of the structure: 31, 39 and 40.
21. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

#### **Water Supply Area**

22. No fuels, chemicals, or other deleterious material shall be stored at the site.
23. The proponent must take necessary measures to control dust that may impair the quality of any adjacent waterbody.
24. Equipment must not be serviced within the boundaries of protected watersheds.
25. The proponent is hereby informed that if there is any change in water quality in a protected watershed resulting directly from the project which causes sufficient changes in physical, chemical or bacteriological composition to render the water within the protected watershed unsuitable as a public water supply, then the proponent must ensure that an alternate source of potable water is provided to the citizens until water quality returns to an acceptable level.
26. All persons working on this project must be informed that they are within a Protected Public Water Supply Area, and must be made aware of all conditions of this Permit. A copy of this Permit must be on site during operations.
27. Liaison is to be maintained with the Regional Watershed Management Specialist for all activities within the PWSA. If there are any problems, she may be reached at (709) 729-4817.
28. Forging is only permitted within the boundaries of Protected Water Supply Areas where conditions are conducive to forging (stable non-erodible stream channels, low approach grades etc.) and where forging sites are not in close proximity to water supply intakes.
29. All vegetation removal within 100 metres of a body of water or within the Protected Water Supply Area for the Town of Grand Bank must be carried out by hand operated equipment only.
30. A complete oil spill clean-up kit must be on site at all times when gasoline or fuel powered equipment is being used or refuelled. The kit must contain the following:
  - One hand operated fuel pump
  - One recovery container such an empty 205 litre drum
  - One shovel
  - One pick ax
  - Five metres of containment boom

- Five absorbent pads
- Twenty-five litres of loose absorbent material

#### **Dam Safety**

31. The dam has been conditionally classified in the HIGH Consequence category based on the 2007 Canadian Dam Association (CDA) guidelines. To meet the CDA's Dam Safety guidelines (Current Edition) for dams of this classification, the owner must:
- Carry out an annual Dam Safety Inspection and provide the results to this Department,
  - Carry out a Dam Safety Review and submit a Dam Safety Report to this Department within two years of the date of issue of this permit and every seven years after that,
  - Develop in consultation with this Department, an Operation, Maintenance and Surveillance (OMS) Manual for the operation of the dam once all phases of upgrade work have been completed,
  - Prepare an Emergency Preparedness and Response Plan (EPRP) upon completion of the Dam Safety Review and confirmation of the dam classification.

#### **Dam Construction**

32. Every effort shall be made to lower water levels in the reservoir as low as reasonably possible prior to the start of construction.
33. Surfaces to come in contact with concrete plugs shall be free of debris and cleaned as best as possible prior to the application of concrete.
34. New steel plates shall be fixed to the downstream dam face over the six plugged overflow pipes using steel rods chemically anchored to the dam.
35. The transportation of labour and materials to the site must be along existing access roads.
36. The dam and spillway must be inspected regularly to identify any indications of structural failure, leaking, erosion or other problem so that immediate action can be taken to rectify the problem.

#### **Special Conditions**

37. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).
38. The dam and associated works must be designed and constructed under the direct supervision of an engineer eligible for membership with the Professional Engineers and Geoscientists of Newfoundland and Labrador (or equivalent Canadian organization) who is able to demonstrate competence in the design, construction, and surveillance of dams.
39. The Town of Grand Bank must submit to this Department a dam safety review report of its water supply dam within 2 years of the date of issue of this permit. Dam breach analysis and flood inundation mapping must be undertaken as part of this review to identify populations at risk of a potential dam failure and to confirm the dam classification. Hydrotechnical and structural analysis must be undertaken as part of this review to determine the adequacy of the dam design.
40. The Department of Environment and Conservation may require the set-up of water resources monitoring stations through a Memorandum of Agreement as per provisions of Section 31 of the Water Resources Act, SNL2002 Chapter W-4.01.

**APPENDIX B**  
**Special Terms and Conditions for Permit**

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1. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall keep all systems and works in good condition and repair and in accordance with all laws, by-laws, directions, rules and regulations of any governmental authority. The Permit Holder or its agent(s), subcontractor(s), or consultant(s) shall immediately notify the Minister if any problem arises which may threaten the structural stability of the systems and works, endanger public safety and/or the environment or adversely affect others and/or any body of water either in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for all damages suffered by the Minister and Government resulting from any defect in the systems and works, operational deficiencies/inadequacies, or structural failure.
2. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall operate the said Project and its systems and works in a manner which does not cause any water related and/or environmental problems, including but not limited to problems of erosion, deposition, flooding, and deterioration of water quality and groundwater depletion, in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for any and all damages associated with these problems caused as a result of changes, deficiencies, and inadequacies in the operational procedures by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
3. If the Permit Holder or its agent(s), subcontractor(s), or consultant(s) fails to perform, fulfil, or observe any of the terms and conditions, or provisions of this Permit and/or Ministerial orders and guidelines, as determined by this Department, the Minister may, after providing ten (10) day notice to the Permit Holder, amend, modify, suspend or cancel this Permit in accordance with the *Water Resources Act*.
4. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) indemnify and hold the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from granting this Permit, systems and works in or outside the said Project areas, or any act or omission of the Permit Holder or its agent(s), subcontractor(s), or consultant(s) in or outside the said Project areas, or arising out of a breach or non-performance of any of the terms and conditions, or provisions of this Permit by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
5. This Permit is subject to all provisions of the *Water Resources Act* and any regulations in effect either at the date of this Permit or hereafter made pursuant thereto or any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
6. This Permit shall be construed and interpreted in accordance with the laws of the Province of Newfoundland and Labrador.

- cc: Ms. Christa Ramsay (E)  
Environmental Scientist  
Water Resources Management Division  
Department of Environment and Conservation  
PO Box 8700  
St. John's NL A1B 4J6
  
- cc: Ms. Paula Dawe, P.Eng.  
Environmental Engineer, Drinking Water and Wastewater Section  
Water Resources Management Division  
Dept. of Environment and Conservation  
PO Box 8700  
St. John's, NL  
A1B 4J6
  
- cc: Mr. Inayat Rehman, P.Eng.  
Department of Municipal and Intergovernmental Affairs  
Main Floor, West Block, Confederation Bldg.  
PO Box 8700  
St. John's NL A1B 4J6
  
- cc: Fisheries Protection Division  
Ecosystem Management Branch  
Fisheries and Oceans Canada  
P.O. Box 5667  
St. John's NL A1C 5X1
  
- cc: File Copy for Binder

**Appendix C - Completion Report**

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 39, 48

Date: **OCTOBER 16, 2015**

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Permit No: **ALT8348-2015**

Permit Holder: **Town of Grand Bank  
PO Box 640  
Grand Bank NL A0E 1W0**

Attention: **Mr. Wayne Bolt, Town Manager**

Re: **Grand Bank Brook Dam Upgrades**

Permission was given for :

*I (the Permit Holder named above or agent authorized to represent the Permit Holder) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Environment and Conservation and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.*

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

This completion report must be completed and forwarded to the following address upon completion of the approved work.

Department of Environment and Conservation  
Water Resources Management Division  
PO Box 8700  
St. John's NL A1B 4J6

**APPENDIX D**  
**Location Map for Permit**

