

## PERMIT TO CONSTRUCT

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 37, 39, 48

Date: **MARCH 08, 2017**

File No: **842.134.1**  
Permit No: **WS9055-2017**

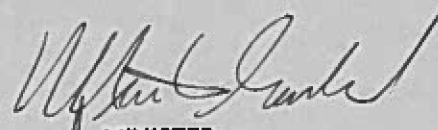
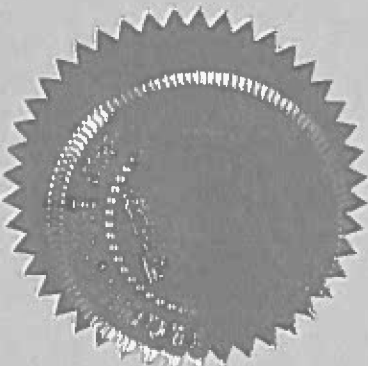
Permit Holder: **Town of Brent's Cove  
General Delivery  
Brent's Cove NL A0K 1R0**

Attention: **Mr. Scott Corbett**

Re: **Brent's Cove - Dam Replacement & Watermain Insulation**

Permission is hereby given for : the demolition and removal of the existing dam the construction of a new dam complete with spillway, impervious membrane face and protective timber face, relocation of the existing intake pipe and new screen intake chamber and related works and appurtenances as described in a specification entitled "Town of Brent's Cove, Watermain Insulation and Dam Replacement" as well as a set of revised drawings numbered 16221, sheets SP1, SP2, S1 and S2 as received from Cecon Limited on March 1, 2017.

- 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 Municipal Affairs and Environment 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**

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**Water & Sewer General**

1. 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*.
2. 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.
3. 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 this Department.
4. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
5. The works proposed must satisfy the requirements of the latest applicable codes and standards, and be consistent with or otherwise address the design criteria set out in the Department of Environment and Climate Change publication *Guidelines for The Design, Construction, and Operation of Water and Sewerage Systems, 2005*, and as amended from time to time.
6. The work must be undertaken in strict compliance with the submitted documents and the latest version of the *Municipal Water, Sewer and Roads Master Construction Specifications*. A copy of all documents, including the *Municipal Water, Sewer and Roads Master Construction Specifications* must be available for viewing at the construction site office at all times.
7. Liaison is to be maintained with the Design Approval Specialist representing the Drinking Water and Wastewater Section of this Department, during the construction and operation of the project. The Specialist shall be notified of the pre-construction and post-construction meetings so that he may attend, if deemed necessary. He can be reached at telephone (709) 637-2034 .
8. Officials of this Department may visit the project from time to time to ensure that work is carried out within the provisions of this Permit, and is not creating any environmental hazard.
9. Any changes in the approved works, or works other than those specified in the application, must be submitted, in writing, to this Department, and approved, in the form of an Amendment to this Permit, prior to any work.
10. Copies of this Permit, 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.
11. The attached Completion Report (Appendix C) for Permit No. 9055 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.
12. The drinking water system shall be operated and maintained in accordance with the Permit to Operate issued by this Department.
13. The Owner must update any drawings maintained of the drinking water system to reflect the modification or replacement of the works, where applicable.

**Dam/Reservoir Design**

14. 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.
  15. The dam and appurtenant structures shall be constructed at the following coordinates:
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Name	Datum	Northing (m)	Easting (m)	Zone
Paddy's Pond Dam	NAD83	5531400	591300	21

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

Name	Height/Elev of Dam (m)	Elev of Spillway (m)	Maximum Water Elevation (m)	Minimum Water Elevation (m)	Minimum Freeboard (m)
Paddy's Pond Dam	1.8/114	113.6/114	114.4	113.6	0.4/dam meant to be overtopped

17. 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)
Paddy's Pond Dam	100	8.34

#### General Alterations

18. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
19. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
20. 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.
21. 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.
22. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
23. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any watercourse. Care must be taken to prevent spillage of pollutants into the water.
24. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
25. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
26. Fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.
27. 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 mine dam structures: 37, 40.
28. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

### **Water Supply Area**

29. No fuels, chemicals, or other deleterious material shall be stored at the site.
30. The Permit Holder must take necessary measures to control dust that may impair the quality of any adjacent waterbody.
31. Equipment must not be serviced within the boundaries of protected watersheds.
32. The Permit Holder 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 Permit Holder must ensure that an alternate source of potable water is provided to the citizens until water quality returns to an acceptable level.
33. 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.
34. Liaison is to be maintained with the Regional Watershed Management Specialist for all activities within the PWSA. If there are any problems, Ms. Carla Hayes may be reached at (709) 637-2542.
35. All vegetation removal within 100 metres of a body of water or within the Protected Water Supply Area for the Town of Brent's Cove must be carried out by hand operated equipment only.
36. 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**

37. The dam has been conditionally classified in the SIGNIFICANT 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 three years of the start of the initial filling of the dam and a maximum of every ten years after that,
  - Carry out dam operation, maintenance and surveillance operations in accordance with the recommendations of the Dam Safety Review so that an acceptable level of the dam safety is ensured.

### **Special Conditions**

38. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).
39. 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.
40. The Town of Brent's Cove must undertake dam breach analysis and flood inundation mapping of the water supply dam as there is a permanent population located downstream of the dam that is potentially at risk in the event of a dam failure. Such mapping will be used in the preparation of an Emergency Preparedness and Response Plan (EPRP) or Emergency Management Plan for the town.
41. An experienced geosynthetics/membrane installer will install the membrane liner associated with this project. Installation will be carried out in accordance with the International Association of Geosynthetics Installers and Geosynthetics Research Institute industry standards.

### **Dam Construction**

42. The dam foundation shall be on bedrock. Dam foundations shall be prepared to ensure a clean, stable, competent foundation.

Exposed foundations will be inspected and approved by a qualified engineer prior to construction.

43. Rockfill material must be obtained from the existing dam or an approved quarry site. It must not be taken from beaches or streams, and must not be dredged from a body of water. Rockfill material for the new timber-crib, rockfill dam shall have a D50 of 200 mm and be hand placed.
44. The old dam located upstream of the proposed dam shall be used as a cofferdam to the extent practical. The old dam shall be demolished and all old timbers shall be removed to a suitable site for disposal upon completion of the project.
45. The reservoir side of the dam structure will be lined with a membrane liner to form a hydraulic barrier. The membrane liner shall extend 1200 mm below the dam to the bedrock foundation. The membrane liner shall be secured to the bedrock foundation with rock anchors and washer plates. The membrane liner shall be anchored to the dam crest under 6x100 mm aluminum strapping.
46. The finished upstream side of the dam shall have a slope of 4 horizontal to 12 vertical. The finished downstream side of the dam shall be vertical.
47. A protective facing will extend across the upstream face of the dam to protect the membrane liner. The protective facing will be anchored to the face of the dam such that the membrane liner is not penetrated.
48. The downstream side of the new dam shall be braced against the natural bedrock convergence at this location.
49. The entire crest of the dam will spill onto bedrock.
50. The area to be flooded by the reservoir must be prepared by removing timber, brush, and slash up to the maximum water elevation.
51. The transportation of labour and materials to the site must be along existing access roads or trails.
52. The dam, spillway and intake 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.
53. The dam shall be constructed of untreated timber.

#### **Water Intake**

54. A water supply intake may be placed in Paddy's Pond as part of the water supply system for the Town of Brent's Cove.
55. The installation of the water supply pipe must comply with the manufacturers specifications, particularly with regard to pipe zone bedding material, degree of compaction, and maximum - minimum pipe cover for design loadings.
56. The intake must be fitted with a removable mesh screen or a trash rack.
57. Adequate protection must be provided against clogging by sediment, debris, ice, frazil ice, wind, floatation and wave pressure.

**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: Mr. Chris Blanchard, B.Tech.(Env), AScT  
Environmental Scientist  
Water Resources Management Division  
Department of Municipal Affairs and Environment  
P.O. Box 2006  
Corner Brook, NL A2H 6J8  
cblancha@gov.nl.ca
- cc: Ms. Carla Hayes, P.Tech  
Environmental Scientist , Drinking Water and Wastewater Section  
Water Resources Management Division  
Department of Environment and Climate Change  
P.O. Box 2006  
Corner Brook, NL A2H 6J8  
CarlaHayes@gov.nl.ca
- cc: Ms. Deneen Spracklin, P.Eng.  
Environmental Engineer, Drinking Water and Wastewater Section  
Water Resources Management Division  
Department of Municipal Affairs and Environment  
P.O. Box 8700  
4th Floor, West Block, Confederation Building  
St. John's, NL A1B 4J6  
dspracklin@gov.nl.ca
- cc: Ms. Paula Dawe, P.Eng.  
Manager, Drinking Water and Wastewater Section  
Water Resources Management Division  
Department of Environment and Climate Change  
P.O. Box 8700  
4th Floor, West Block, Confederation Building  
St. John's, NL A1L 4J6  
pauladawe@gov.nl.ca
- cc: Mr. Chris Power, P. Eng.  
Regional Engineer, Western Regional Office  
Department of Municipal Affairs and Environment  
6th Floor, Sir Richard Squires Building  
P.O. Box 2006  
Corner Brook, NL A2H 6J8  
ChrisPower@gov.nl.ca
- cc: Mr. Wayne Lynch  
Regional Director (Central)  
Service NL  
P.O. Box 2222  
Gander, NL A1V 2N9  
waynelynch@gov.nl.ca
- cc: Fisheries Protection Division  
Ecosystem Management Branch  
Fisheries and Oceans Canada  
P.O. Box 5667  
St. John's, NL A1C 5X1  
FPP-NL@dfo-mpo.gc.ca
- cc: Mr. Barry Thomson, P.Eng.  
Cecon Limited  
93 Edinburgh Avenue, 2nd fl. Lancaster  
Gander, NL A1V 1C9

bthomson@cecon.ca





### Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 37, 39, 48

Date: **MARCH 08, 2017**

File No: **842.134.1**  
Permit No: **WS9055-2017**

Permit Holder: **Town of Brent's Cove  
General Delivery  
Brent's Cove NL A0K 1R0**

Attention: **Mr. Scott Corbett**

Re: **Brent's Cove - Dam Replacement & Watermain Insulation**

Permission was given for : the demolition and removal of the existing dam the construction of a new dam complete with spillway, impervious membrane face and protective timber face, relocation of the existing intake pipe and new screen intake chamber and related works and appurtenances as described in a specification entitled "Town of Brent's Cove, Watermain Insulation and Dam Replacement" as well as a set of revised drawings numbered I6221, sheets SP1, SP2, S1 and S2 as received from Cecon Limited on March 1, 2017.

*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 Municipal Affairs and Environment 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 Municipal Affairs and Environment  
Water Resources Management Division  
PO Box 8700  
St. John's NL A1B 4J6

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

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