

PERMIT TO ALTER A BODY OF WATER

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

Date: **NOVEMBER 13, 2017**

File No: **526**
Permit No: **ALT9474-2017**

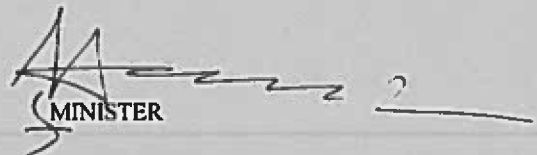
Permit Holder: **Town of Goose Cove East
PO Box 8
Goose Cove East NL A0K 4S0**

Attention: **Patricia Reardon**

Re: **Goose Cove East Jack's Pond Dam Upgrades**

Permission is hereby given for : **upgrades to the existing Jack's Pond water supply dam used by the Town of Goose Cove East including installation of a dam liner, new spillway, filling of eroded areas along the dam embankment and crest, dredging of the pond, and associated activities as detailed in the application received from Atlantic Engineering Consultants Ltd. on October 10, 2017 and additional documentation received on November 7, 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

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 dam and appurtenant structures shall be constructed at the following coordinates:

Name	Datum	Northing (m)	Easting (m)	Zone
Jack's Pond Dam	NAD83	5686750	594900	21

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

Name	Height/Elev of Dam (m)	Elev of Spillway (m)	Maximum Water Elevation (m)	Minimum Freeboard (m)
Jack's Pond Dam	2.67/37.67	37.17	37.17	0.5

4. 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 ³ /s)
Jack's Pond Dam	100	4.12

Dredging

5. Alteration of the natural minimum streamflow is not permitted in order to preserve aquatic life.
6. The natural course of any stream must not be altered.
7. Dredging activity must only be carried out during periods when wind, wave and tide conditions minimize the dispersion of silt and sediment from the work site.
8. A water quality monitoring program is not required at this time. However, the Department reserves the right to require that the Permit Holder sample, analyse, and submit results of water quality tests, for the purpose of ensuring that the water quality is maintained within acceptable guidelines. All analyses must be undertaken by a CALA accredited laboratory.
9. The area to be dredged must be enclosed and isolated from the rest of the body of water through the use of a filter fabric curtain or similar method.
10. Dredged material must be disposed of in accordance with the regional Service NL Centre of the Department of Service NL. The Department of Service NL may require samples to be submitted for testing and analysis.

General Alterations

11. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
12. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
13. 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*.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.
20. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
21. Care must be taken to prevent spillage of pollutants into the water.
22. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
23. 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.
24. 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.
25. The attached Completion Report (Appendix C) for Permit No. 9474 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.
26. This Permit is valid for two years from the date of issue. 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 dam structure: 37, 40.
27. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

Water Supply Area

28. No fuels, chemicals, or other deleterious material shall be stored at the site.
29. The Permit Holder must take necessary measures to control dust that may impair the quality of any adjacent waterbody.
30. Equipment must not be serviced within the boundaries of protected watersheds.
31. 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.

32. 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.
33. 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) 637-2542.
34. Fording is only permitted within the boundaries of Protected Water Supply Areas where conditions are conducive to fording (stable non-erodible stream channels, low approach grades etc.) and where fording sites are not in close proximity to water supply intakes.
35. All vegetation removal within 100 metres of a body of water or within the Protected Water Supply Area for the Town of Goose Cove East 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 as 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 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 a maximum of every **ten years** after that,
 - Carry out an annual Dam Safety Inspection and provide the results to this Department,
 - Carry out dam operation, maintenance and surveillance operations in accordance with the OMS Manual and any recommendations of the most recent 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 Goose Cove East must submit to this Department a dam safety review report of the drinking 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 confirm the dam classification. Hydrotechnical analysis must be undertaken as part of this review to determine the adequacy of the dam design including assessment of the inflow design flood, spillway capacity, freeboard capacity and other relevant design factors.
41. The area to be dredged shall not exceed 38.7 m by 42.6 m.
42. If the geomembrane becomes detached from the pre-cast concrete anchors at either the upstream dam toe or crest, it will need to be re-anchored using an anchor trench.
43. The intake pipe, screens and chlorination building shall not be disturbed during upgrades to the dam.

Dam Construction

44. The timber liner portion of the existing dam is to be removed.
45. Fill material must be obtained from an approved quarry site. It must not be taken from beaches or streams, and must not be

dredged from a body of water.

46. Reservoir shorelines with moderately steep slopes or vulnerability to wave induced erosion, must be adequately protected with armour stone, rip-rap, or by other suitable measures.
47. Any areas of the dam crest below an elevation of 37.67 m shall be filled with appropriate material that is properly compacted so as to match the surrounding dam elevation.
48. The upstream face of the dam crest shall be lined with a 30mil PVC geomembrane liner. The liner shall be anchored at the upstream toe with 1830 mm pre-cast concrete anchors, butt jointed across the length of the upstream dam toe. The liner shall be anchored at the upstream crest by 1830 mm pre-cast concrete anchors, butt jointed across the length of the dam crest. The liner shall be placed underneath the invert of the new pre-cast concrete spillway. The sides of the liner may be anchor trenched or anchored with 1830 mm pre-cast concrete anchors.
49. The 1830 mm pre-cast concrete anchors used at the dam crest will be anchored into the embankment dam using re-bar anchor pins.
50. Where pumping is used to bypass flow, cofferdams must be installed both above and below areas of construction. The Permit Holder must provide pumps with sufficient capacity to prevent washout of cofferdams.
51. The area to be flooded by the reservoir must be prepared by removing timber, brush, and slash up to the maximum water elevation.
52. The transportation of labour and materials to the site must be along existing access roads.
53. A trench shall be excavated through the dam crest to allow for the installation of the pre-cast concrete spillway such that the invert is at an elevation of 37.17 m. The spillway will be comprised of three 2.8 m wide sections placed side by side. The upstream end of the spillways will be equipped with stop log anchors. The concrete spillway shall have a downstream grade of 2.5%.
54. The toe of the pre-cast concrete spillway to the toe of the embankment dam shall be lined with a layer of D50 = 1000 mm rip rap at to be sloped towards the natural drainage. The rip rap lined channel shall be wider than the concrete spillway.

APPENDIX B
Special Terms and Conditions for Permit

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: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling Section
Water Resources Management Division
Department of Municipal Affairs and Environment
4th Floor, Confederation Building, West Block
P.O. Box 8700, St. John's NL Canada A1B4J6
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- cc: File Copy for Binder
- cc: Mr. Chris Blanchard, B.Tech.(Env), AScT
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Ecosystem Management Branch
Fisheries and Oceans Canada
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Appendix C - Completion Report

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

Date: **NOVEMBER 13, 2017**

File No: **526**

Permit No: **ALT9474-2017**

Permit Holder: **Town of Goose Gove East
PO Box 8
Goose Cove East NL A0K 4S0**

Attention: **Patricia Reardon**

Re: **Goose Cove East Jack's Pond Dam Upgrades**

Permission was given for : upgrades to the existing Jack's Pond water supply dam used by the Town of Goose Cove East including installation of a dam liner, new spillway, filling of eroded areas along the dam embankment and crest, dredging of the pond, and associated activities as detailed in the application received from Atlantic Engineering Consultants Ltd. on October 10, 2017 and additional documentation received on November 7, 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

