

PERMIT TO ALTER A BODY OF WATER

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

Date: **MAY 30, 2017**

File No: **524**
Permit No: **ALT9187-2017**

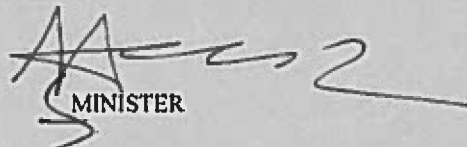
Permit Holder: **Dewcor**
34 Harvey Road
St. John's NL A1C 2G1

Attention: **Mr. Andy Carew**

Re: **Galway Stormwater Detention Pond CP 07C**

Permission is hereby given for : **the construction of an earthfill dam for the detention of stormwater, and associated appurtenances and activities, as detailed in the application received from Dewcor on March 17, 2017 and supporting documentation received on May 24, 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. Alteration of the natural minimum streamflow is not permitted in order to preserve aquatic life.
3. The dam and appurtenant structures shall be constructed at the following coordinates:

Name	Datum	Northing (m)	Easting (m)	Zone
CP07C Stormwater Pond	NAD83	5263237.87	360664.55	22

4. 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)
CP07C Stormwater Pond	4.35/190.6	190.15	190.3	187	0.3

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

Name	Design Return Period (years)	Inflow Design Flood(m ³ /s)	Spillway Capacity (m ³ /s)
CP07C Stormwater Pond	1/3 between 1:1000 and PMF	10.15	10.42

General Alterations

6. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
7. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
8. 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*.
9. 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.
10. 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.

11. 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.
12. 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.
13. 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.
14. 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.
15. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
16. 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.
17. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
18. 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.
19. 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.
20. The attached Completion Report (Appendix C) for Permit No. 9187 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.
21. 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: 27, 28, 30 and 33.
22. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
23. All work must be carried out within the Permit Holder's legal property boundaries.

Storm Drainage Works

24. The storm sewer outfall must be set back a minimum of 15 metres from the waters of the nearby Unnamed Stream.
25. Removal of streambank vegetation or trees is not permitted. Overhanging brush that collects snow and blocks ice movement may be pruned and cut back to allow free flow of water.
26. Outside the scope of work outlined in this Permit, a minimum 15 metre wide vegetated buffer zone must be maintained along the edge of all waterbodies in order to provide bank stability, maintain local aesthetics and to help protect water quality.
27. Outfalls must be inspected regularly so that immediate action can be taken to clear blockages caused by ice or debris or to undertake repairs as required.
28. 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.
29. Adequate erosion protection must be provided in the area where storm/sewer outfall discharges as per detail #560 of the *Municipal Water, Sewer and Roads Specifications*.

Dam Safety

30. 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 start of reservoir filling and a maximum of every seven years after that,
 - Develop within one year of the issuance of this permit, and in consultation with this Department, an Operation, Maintenance and Surveillance (OMS) Manual for the operation of the dam,
 - Prepare an Emergency Preparedness and Response Plan (EPRP) including dam break flood inundation mapping within two years of the start of reservoir filling.

Special Conditions

31. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).
32. 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.
33. 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.
34. The stormwater detention pond must provide enough storage for any captured sediment.

Dam Construction

35. The finished upstream sides of the earthen dam structures shall have a minimum slope of 2.5 horizontal to 1 vertical. The finished downstream sides of the earthen dam structures shall have a minimum slope of 3 horizontal to 1 vertical.
36. 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.
37. 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.
38. The upstream and downstream face of the embankment, excluding the downstream toe drain, shall be constructed with a 150 mm layer of topsoil and seeding. The dam crest shall be constructed with a 100 mm layer of class A material overlaying a 300 mm layer of 150 minus blasted rock.
39. The emergency spillway chute shall have a slope of 3 horizontal to 1 vertical with side slopes of 2 horizontal to 1 vertical. The top of the emergency spillway must be constructed with a 150 mm facing of armour stone or rip-rap with a D50=50mm to provide adequate protection from erosive velocities. The emergency spillway chute must be constructed with a 750 mm facing of armour stone or rip-rap with a D50=500mm to provide adequate protection from erosive velocities. Rip-rap shall be placed on a bedding layer comprised of a geotextile with 150mm thick granular B material.
40. All geotextiles used in the construction of the stormwater pond (spillway, downstream toe drain, upstream to berm) shall be properly keyed/anchored into the embankment.
41. A minimum 2.0x2.5 m downstream toe drain shall be constructed where the embankment height is 2.5 m or higher. The toe drain shall be comprised of 100mm rockfill and shall be separated from the common fill of the embankment by a geotextile layer.
42. A minimum 1.5x1.5 m upstream toe berm shall be constructed where the embankment height is 2.5 m or higher. The toe drain shall be comprised of 100mm rockfill and shall be separated from the common fill of the embankment by a geotextile layer.
43. The area to be flooded by the reservoir must be prepared by removing timber, brush, and slash up to the maximum water elevation.
44. The transportation of labour and materials to the site must be along existing access roads.

45. 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.
46. Riprap of adequate size, depth and length must be used at all inlets into the pond and at the pond outlet. The stormwater pond outlet apron must be constructed with a 750 mm facing of armour stone or rip-rap with a D50=350 mm.

Flood Zone Development

47. The proponent's property is within the designated flood plain for the City of St. John's and Mount Pearl (Waterford River). This development, and future development at the site, must comply with this Department's policy directive for *Flood Plain Management W.R. 96-1*.
48. Any further development in the flood zone area not specifically covered by this permit will require a separate permit from this Division under Section 48 of the *Water Resources Act*.
49. The proposed use of the facility and site will not involve any storage of pollutants such as fuels, chemicals, pesticides, etc.
50. The structure will not interfere with the flow of water or displace water such that it creates a worse flooding situation for other properties.

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: File Copy for Binder
- cc: Ms. Paula Dawe, P.Eng.
Manager, 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 A1L 4J6
pauladawe@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. Jason Sinyard, P. Eng.
City of St. John's
Department of Planning Development and Engineering
P.O. Box 908
St. John's NL A1C 5M2
-

Appendix C - Completion Report

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

Date: **MAY 30, 2017**

File No: **524**
Permit No: **ALT9187-2017**

Permit Holder: **Dewcor**
34 Harvey Road
St. John's NL A1C 2G1

Attention: **Mr. Andy Carew**

Re: **Galway Stormwater Detention Pond CP 07C**

Permission was given for : **the construction of an earthfill dam for the detention of stormwater, and associated appurtenances and activities, as detailed in the application received from Dewcor on March 17, 2017 and supporting documentation received on May 24, 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

