

PERMIT TO ALTER A BODY OF WATER

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

Date: **OCTOBER 04, 2016**

File No: 524
Permit No: ALT8903-2016

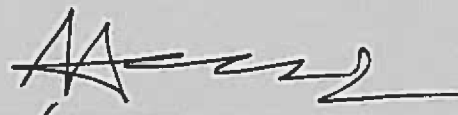
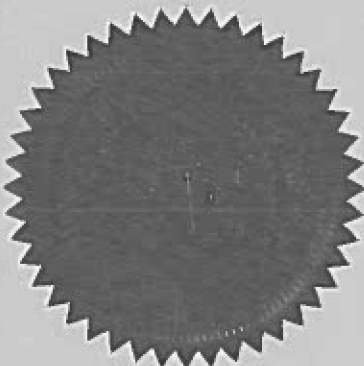
Permit Holder: **Dewcor**
34 Harvey Road
St. John's NL A1C 2G1

Attention: **Mr. Andy Carew**

Re: **Galway-CP14B Stormwater Pond**

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 August 25, 2016 and supporting documentation received on September 16, 2016.**

- 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 Climate Change 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
CP14B- Stormwater Pond	NAD83	5262933.009	362730.659	22

3. 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)
CP14B- Stormwater Pond	7.7/192.25	191.85	191.092	188.85	0.4

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)
CP14B- Stormwater Pond	100	5.641

General Alterations

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

11. 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.
12. 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.
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. 8903 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. 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: 24 and 28.
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.

Dam Safety

24. 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 three years of the start of the initial filling of the dam and a maximum of every ten 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,
 - Carry out an annual Dam Safety Inspection and provide the results to this Department.

Special Conditions

25. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).
26. 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.
27. The CDA dam classification level must be reviewed on an annual basis. Additional requirements may be placed on the dam if the classification level increases including the development of an Emergency Preparedness and Response Plan.

28. 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 1.1 m facing of armour stone or rip-rap with a D50=600 mm.
29. The stormwater detention pond must have the following minimum dimensions:

Name	Length (m)	Width (m)	Depth (m)	Width of Spillway (m)
CP14B	135.1	48.6	3	9.5

30. The stormwater detention pond must be designed according to the following criteria:

Name	Flow Capacity (m ³ /s)	Contributing Watershed (ha)	Return Period (years)	Retention Time (hrs)
CP14B	6.01	44.992	100	48

31. The stormwater detention pond must provide enough storage for any captured sediment.

Dam Construction

32. 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.
33. 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.
34. 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.
35. The upstream and downstream face of the embankment, excluding the downstream toe drain and the upstream toe berm, shall be constructed with a 150 mm layer of topsoil and seeding. The downstream toe drain and upstream toe berm shall be constructed with a riprap overlay.
36. 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 0.3 m 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 1.1 m facing of armour stone or rip-rap with a D50=600mm 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.
37. The embankment crest shall be capped with a 0.3 m layer of 150mm blasted rock with an additional layer of 100mm class A gravel.
38. 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.
39. 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.
40. The area to be flooded by the reservoir must be prepared by removing timber, brush, and slash up to the maximum water elevation.

41. The transportation of labour and materials to the site must be along existing access roads.
42. 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.
43. 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.

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: 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: City of St. John's
Jason Sinyard, P.Eng.
Director of Planning & Development
P.O. Box 908
St. John's, NL A1C 5M2
planning@stjohns.ca

cc: File Copy for Binder



Appendix C - Completion Report

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

Date: **OCTOBER 04, 2016**

File No: **524**
Permit No: **ALT8903-2016**

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

Attention: **Mr. Andy Carew**

Re: **Galway-CP14B Stormwater Pond**

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 August 25, 2016 and supporting documentation received on September 16, 2016.**

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 Climate Change 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 Climate Change
Water Resources Management Division
PO Box 8700
St. John's NL A1B 4J6

APPENDIX D
Location Map for Permit

