

PERMIT TO ALTER A BODY OF WATER

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

Date: **AUGUST 16, 2023**

File No: **525**

Permit No: **ALT13102-2023**

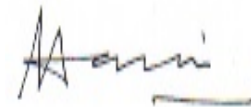
Permit Holder: **Town of Middle Arm
PO Box 51
Middle Arm NL A0K 3R0
townofmiddlearm@hotmail.com**

Attention: **Ms. Loretta Budgell**

Re: **Middle Arm Water Supply Dam - Dam Upgrades**

Permission is hereby given for : **adding 1 meter of height to the current concrete dam and associated activities as detailed in the application received from Allnorth Consultants Limited on March 21, 2023 with additional information sent on April 24 and May 2, 2023.**

- 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*.



(for) MINISTER

APPENDIX A
Terms and Conditions for Permit

Dam/Reservoir Design

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

Name	Latitude (decimal degrees)	Longitude (decimal degrees)
Middle Arm Water Supply Dam	49.7064	56.1022

2. The dam must have the following dimensions:

Name	Height/Elev. of Dam (m)	Height/Elev. of Spillway (m)
Middle Arm Water Supply Dam	5.56/44.56	4.56/43.56

3. As the CDA consequence classification and size of the existing spillway are not being altered by the proposed upgrades, the proponent is not currently required to increase the spillway capacity to meet the inflow design flood. The proponent is aware the spillway capacity will not pass the inflow design flood and should make future plans to update the spillway accordingly. To safely convey peak flows the dam and spillway must be designed according to the following hydraulic criteria:

Name	Design Return Period (years)	Minimum Flow Capacity (m³/s)
Middle Arm Water Supply Dam	1/3 Between 1:1000 year and PMF	45

4. The proponent must make future plans to update the spillway so that the reservoir is 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.
5. As part of future plans, the proponent must provide a sufficient minimum free board between the highwater elevation and the crest of the dam to prevent overtopping.
6. Alteration of the natural minimum streamflow is not permitted in order to preserve aquatic life.
7. 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.

8. The dam and associated works shall be designed according to the Canadian Dam Association Dam Safety Guidelines and associated Bulletins (most recent edition).

Dam Safety

9. 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 upgrades 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,
 - Prepare an Emergency Preparedness Plan (EPP) within one year of the issuance of this permit.

Dam Construction

10. 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.
11. 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.
12. The transportation of labour and materials to the site must be along existing access roads.
13. 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.
14. The work must meet the requirements of the Environmental Protection Plan (latest approved version) for the project.
15. All areas of the existing structure in contact with new concrete shall be treated with high pressure water to clean and remove any unsound materials. Any noticeable deteriorated concrete will be removed before the placement of new concrete. All new concrete shall be well bonded to the surface of the existing concrete against which it is cast.
16. Work must be conducted in dry conditions.

General Alterations

17. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
18. 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.
19. 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.
20. 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.

21. 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.
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. The attached Completion Report (Appendix C) for Permit No. 13102 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.
28. 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 term(s) are valid for the life cycle of the structure: 9 and 13.
29. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
30. All work must be carried out within the Permit Holder's legal property boundaries.

Water & Sewer General

31. 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*.
32. 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.
33. 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.
34. 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 this Department's publication *Guidelines for the Design, Construction, and Operation of Water and Sewerage Systems, 2005*, and as amended from time to time.

35. 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.
36. 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.
37. 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.
38. 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.
39. The Owner must update any drawings maintained of the drinking water system to reflect the modification or replacement of the works, where applicable.

Water Systems

40. Under no circumstances shall sewage be permitted to enter the waterline trench during or after construction.
41. All new waterlines and appurtenances shall be hydrostatically tested in accordance with the *Municipal Water, Sewer and Roads Specifications*.
42. All components, lubricants and chemicals provided shall be compatible for use with drinking water and shall meet the requirements of ANSI/NSF 60 Drinking Water Treatment Chemical Standard and ANSI/NSF 61 Drinking Water and System Component Standard and any other standard applicable to potable water.
43. All new lines and appurtenances must be disinfected by an approved method described in the latest edition of the AWWA C651 Standard for Disinfecting Watermains and using only chlorine products that meet the NSF 60 standard.

Intake

44. A water supply intake may be placed in Dam Pond as part of the water supply system for the Town of Middle Arm .
45. The intake shall consist of a 200 mm diameter PVC pipe and a screened stainless steel intake structure.
46. Pipe zone cutoff walls or other means must be installed to prevent lowering of the water table due to groundwater flow through the porous pipe zone material.
47. 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.
48. Cofferdams must be properly designed and constructed of suitable materials to prevent leakage and to resist loss of any material as a result of erosion. Cofferdams must be removed upon completion of their intended function. All material must be removed carefully to prevent disturbance of the water body and to prevent water quality degradation.

49. Close cut clearing and disposal must be undertaken around the perimeter of the water supply reservoir to an elevation not less than 200 mm above the proposed high water mark. Special care should be exercised to minimize siltation and erosion problems at the new shore wash area.
50. The intake must be fitted with a removable mesh screen or a trash rack.
51. Intake ports must be located above the bottom of the stream, lake or impoundment, but at sufficient depth to be kept submerged at low water levels and below ice level. The intake structure must not draw air.
52. Adequate protection must be provided against clogging by sediment, debris, ice, frazil ice, wind, floatation and wave pressure.

PPWSA General

53. 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.
54. An undisturbed (no cutting or ground disturbance) buffer zone of at least **150 metres** shall be maintained around Dam Pond Brook for a distance of 1 kilometer upstream and 100 metres downstream of the intake, at least **75 metres** along the remainder of Dam Pond Brook, at least **50 metres** around major lakes or ponds and along both sides of all streams and main tributaries running into Dam Pond Brook, and at least **30 metres** around all ponds and along both sides of all other water bodies including wetlands and field identified streams. Activity or development within these buffer zones is prohibited. All buffer zones must be marked with signs or flagging tape to avoid encroachment into the buffer zones.
55. Treated wood shall not be used in a water body or within buffer zones established in Condition 54 of any water body measured from the high water mark. The use of creosote treated wood anywhere within the Protected Public Water Supply Area is strictly prohibited.
56. For any clearing inside buffer zones: no ground disturbance (no disturbance to the root mat, no grubbing, or removal of soil) shall take place in the buffer zones. The Permit Holder is to ensure that the appropriate best practices are employed to prevent any detrimental effects that could impact water quality, such as the use of hand tools. Where possible, work in buffer zones shall be completed when the ground is frozen.
57. All waste material is to be collected in refuse containers, and disposed of at an approved waste disposal site outside the Protected Public Water Supply Area in accordance with the *Environmental Protection Act, SNL 2002 cE-14.2*.
58. Equipment storage, maintenance facilities associated with this project, and all maintenance other than emergency repairs must not be located/carried out within the Protected Public Water Supply Area.
59. The Department reserves the right to require that the Permit Holder follow, and cover all costs incurred by the Permit Holder or this department, associated with any water quality monitoring program that may be ordered by the Minister for the purpose of ensuring that the water quality is maintained within acceptable guidelines.
60. Officials of the Department and the appropriate Municipal Authority, Operator, or Watershed Management Committee may visit the site to ensure compliance with this Permit.

61. Liaison is to be maintained with the appropriate Municipal Authority and Environmental Scientist. If there are any specific problems (i.e. sedimentation, fuel spill, or other potential water quality impairment), the appropriate Town Manager/Clerk, Mayor, Chair of the Local Service District Committee, or Chair of the Water Supply Committee must be notified immediately at (709)252-2521. The Environmental Scientist must also be notified immediately at (709)637-2542.
62. The felling or disposing of trees, parts of trees, sawdust, bark, logging debris or slash into a water body or upon the frozen surface of a water body is strictly prohibited.
63. Drainage from roads and other disturbed areas, and all water, runoff or effluent from the site, that is pumped or flows by gravity, shall have silt, sludge, sediment, cuttings, and visible turbidity removed by means of sediment boxes, settling tanks, settling ponds, sumps dug into the ground, filtration or other suitable treatment, to less than or equal to 30 milligrams per litre of Total Suspended Solids (TSS), before being discharged to the environment. More specifically, at the last point of control, the final discharge of all water, runoff or effluent must conform to the limits specified in Schedule A of the Environmental Control Water and Sewer Regulations, 2003, <https://www.assembly.nl.ca/Legislation/sr/Regulations/rc030065.htm>. It is the responsibility of the Permit Holder to demonstrate, that the final discharge meets the requirement of these Regulations.
64. The Permit Holder must inspect the site daily, during construction, and any water quality impairment related problems are to be reported immediately to the Environmental Scientist at (709)637-2542 and the appropriate Municipal Authority or Watershed Monitoring Committee at (709)252-2521.
65. Any changes in water quality resulting directly from this project, rendering the water unsuitable as a public water supply, are the responsibility of the Permit Holder. The Minister may order the Permit Holder to provide an alternate source of potable water to the affected community until water quality returns to an accepted level.
66. All precautions are to be taken to ensure that blowing debris does not blow into Dam Pond Brook.
67. All stationary motorized equipment and associated fuel tanks shall have metal trays, absorbent pads or impervious liners under them to catch and contain in excess of 110 % of the aggregate volume of any fuel, lubricant and oil.
68. Where permits, licences, approvals or authorizations are issued by multiple governments departments or agencies, in the case of similar conditions, the more stringent of those shall prevail; in the case of conflicting conditions, the Permit Holder shall seek clarification and direction in writing from each of the respective departments or agencies.
69. The Permit Holder is required to ensure that adequate sanitary (bathroom) facilities are available or provided on site. This may be in the form of a portable toilet, chemical toilet, or municipal sewer system. If a portable toilet or chemical toilet is used, the waste water must be disposed of in a septic disposal system approved by Service NL, or at an approved waste disposal site, outside the Protected Public Water Supply Area in accordance with the Environmental Protection Act, SNL 2002 cE-14.2. .

Fuel Storage

70. There shall be no bulk fuel storage associated with this project within the protected water supply area. Fuel shall be brought to the operating area in no more than one (1) 500 litre slip tank. The Permit Holder is hereby informed that fuel storage and handling requires a separate approval under the *Storage and Handling of Gasoline and Associated Products Regulations*, CNR 775/96.

71. Contaminated snow and soil must be removed from the site and disposed of at an approved location outside the protected public water supply area, in accordance with the *Environmental Protection Act, SNL 2002 cE-14.2*.
72. Any spills of gasoline, fuel or oil, regardless of volume, shall be reported immediately to the Environmental Scientist at (709)637-2542 and the appropriate Municipal Authority or Watershed Management Committee by calling and (709)252-2521 respectively. Furthermore, all spills in excess of 70 litres shall be reported immediately to the 24 hour spill report line at 1-800-563-9089.
73. 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 axe
 - Five metres of containment boom
 - Five absorbent pads
 - Twenty-five litres of loose absorbent material
74. Refueling sites shall be located at least 150 metres from any water body or wetland.

Protected Miscellaneous

75. The Permit Holder is required to provide this Department with all documentation, information and data which may be requested or required in order to carry out the inspection or investigation.
76. Sawdust, bark, and logs must not be stored within undisturbed buffer zones of any body of water, and must be removed at regular intervals to prevent excessive accumulation at the site.
77. Wood and brush removed from the work site must not be stored within undisturbed buffer zones of any water body.
78. The Permit Holder is required to undertake a water quality monitoring program as outlined below. Samples are to be submitted to a CALA-certified laboratory and all water quality data must be submitted to this Department, within 14 days of the samples being taken.
- Water samples shall be collected from the intake area on Dam Pond.
 - A water sample shall be collected at the completion of the work.
 - A list of parameters can be obtained by calling the Environmental Scientist at (709)637-2542.

Special Conditions

79. Cleaning of any equipment, including but not limited to, equipment that comes into contact with concrete or paint, is not permitted within the Dam Pond Brook Protected Public Water Supply Area.
80. All pumps and hoses that will be used to lower water levels must not have been in prior contact with contaminants including but not limited to chemicals and sewage, that could negatively impact water quality.

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, as determined by this Department, the Minister may, without notice, 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. Reg Hedges, P. Eng.
All North Consultants Ltd.
185 Roe Avenue
Gander NL A1V 1W6
rhedges@allnorth.com
- cc: Mr. Chris Blanchard, B.Tech.(Env), AScT
Environmental Scientist
Water Resources Management Division
Department of Environment and Climate Change
P.O. Box 2006
Corner Brook, NL A2H 6J8
cblancha@gov.nl.ca
- cc: Ms. Carla Hayes, P.Tech
Environmental Scientist, Drinking Water 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.
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 A1B 4J6
dspracklin@gov.nl.ca
- cc: Ms. Paula Dawe, P.Eng.
Manager, Water Rights, Investigations and Modelling 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 A1B 4J6
pauladawe@gov.nl.ca
- cc: Mr. Wayne Lynch (Central)
Regional Director (Central)
Digital Government and Service Newfoundland and Labrador
P.O. Box 2222
Gander, NL A1V 2N9
waynelynch@gov.nl.ca



Appendix C - Completion Report

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

Date: **AUGUST 16, 2023**

File No: **525**
Permit No: **ALT13102-2023**

Permit Holder: **Town of Middle Arm**
PO Box 51
Middle Arm NL A0K 3R0
townofmiddlearm@hotmail.com

Attention: **Ms. Loretta Budgell**

Re: **Middle Arm Water Supply Dam - Dam Upgrades**

Permission was given for : **adding 1 meter of height to the current concrete dam and associated activities as detailed in the application received from Allnorth Consultants Limited on March 21, 2023 with additional information sent on April 24 and May 2, 2023.**

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

