

PERMIT TO ALTER A BODY OF WATER

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

Date: **MAY 03, 2019**

File No: **536-12**

Permit No: **ALT10261-2019**

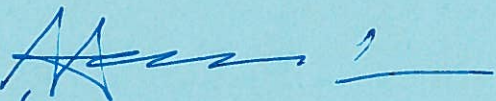
Permit Holder: **Muskrat Falls Corporation
P.O. Box 12800, Hydro Place
500 Columbus Drive
St. John's NL A1B 0C9**

Attention: **Ms. Krista Trowbridge**

Re: **Lower Churchill Project- Pinus River Deflector Berm- Fish Habitat Compensation Work**

Permission is hereby given for : **the construction of a 155 m long rockfill deflector berm in Pinus River to redirect flow of the river towards newly constructed fish habitat compensation work, and associated activities as detailed in the application received from the Muskrat Falls Corporation on February 1, 2019 with additional information sent on April 4, 2019.**

- 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*.



MINISTER

APPENDIX A
Terms and Conditions for Permit

General Alterations

1. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
2. 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*.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
9. Care must be taken to prevent spillage of pollutants into the water.
10. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
11. 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.
12. 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.
13. The attached Completion Report (Appendix C) for Permit No. 10261 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.

14. 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.
15. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

Dyke/Berm Construction

16. The upstream and downstream slopes of the berm must be no steeper than 1.5 horizontal to 1 vertical (1.5H:1V).
17. A berm and appurtenant structures may be constructed at the following coordinates: NAD83, Zone 20, N5876748, E616216.
18. Organics and surface material must be cleared from where the berm foundation is in contact with the bed of the Pinus River, and on the northeast and southwest abutments prior to the placement of material in order to ensure a clean, stable, competent foundation.
19. The berm shall be constructed such that the crest elevation is at 40 m and crest width is 6 m.
20. 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.
21. The berm shall be comprised of D50= 100 mm type 1 rockfill. The portion of the berm from the south bank of the river and further southwest shall have the rockfill underlain by a layer of type 1 granular material.
22. 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.
23. Construction of the berm shall commence from the northwest bank of the Pinus River and continue southwest across the Pinus River until the fish compensation work has been reached.
24. Construction of the berm shall take place after impoundment of the Muskrat Falls reservoir to an elevation of 39 m.

Special Conditions

25. Laydown areas to be used for construction materials must be prepared by removing timber, brush, and slash. A minimum 30 meter buffer shall be maintained between any body of water and any laydown area for material used in construction.
26. 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.
27. 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.
28. The transportation of labour and materials to the site must be along existing access roads.

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: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling 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
akhan@gov.nl.ca
- cc: Brian Harvey
Director, Policy and Planning, Aboriginal Affairs Branch
Intergovernmental and Aboriginal Affairs Secretariat
brianharvey@gov.nl.ca
- 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

Appendix C - Completion Report

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

Date: **MAY 03, 2019**

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Permit No: **ALT10261-2019**

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P.O. Box 12800, Hydro Place
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Attention: **Ms. Krista Trowbridge**

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Compensation Work**

Permission was given for : **the construction of a 155 m long rockfill deflector berm in Pinus River to redirect flow of the river towards newly constructed fish habitat compensation work, and associated activities as detailed in the application received from the Muskrat Falls Corporation on February 1, 2019 with additional information sent on April 4, 2019.**

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

