

PERMIT TO CONSTRUCT

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 36, 48

Date: **AUGUST 28, 2018**

File No: **843.058.009**
Permit No: **WS9839-2018**

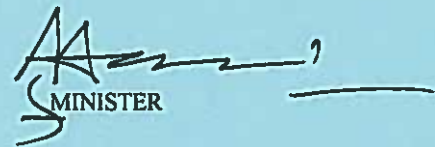
Permit Holder: **Town of Gander
100 Elizabeth Drive
PO Box 100
Gander NL A1V 1G7**

Attention: **Mr. James Blackwood, P. Eng.**

Re: **Gander - Wastewater Treatment Facility**

Permission is hereby given for : the installation of a new wastewater treatment facility with a peak capacity of 23,800 m³/day to include: duplex automated coarse screen system, by-pass channel with manual bar screen, duplex aerated grit channel system, four aerated lagoon cells in series, UV disinfection system consisting of four UV banks in series, a submerged outfall with headwall to Whitman's Pond, and related appurtenances as described in the drawings titled, "Gander Wastewater Treatment Facility" as received from Pomerleau on July 16, 2018.

- 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

Water & Sewer General

1. 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*.
2. 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.
3. 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.
4. All waste materials resulting from this project must be disposed of at a site approved by the Department of Service NL.
5. 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 the Department of Municipal Affairs and Environment publication *Guidelines for The Design, Construction, and Operation of Water and Sewerage Systems, 2005*, and as amended from time to time.
6. 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.
7. Liaison is to be maintained with the Environmental Scientist representing the Drinking Water and Wastewater Section of this Department, during the construction and operation of the project. They shall be notified of the pre-construction and post-construction meetings so that they may attend, if deemed necessary. They can be reached at telephone (709) 729-2558.
8. 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.
9. 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.
10. 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.
11. The attached Completion Report (Appendix C) for Permit No. 9839 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.
12. 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.
13. The wastewater system shall be operated and maintained in accordance with the Permit to Operate issued by this Department.
14. Management of stormwater is the responsibility of the municipality or LSD. Stormwater management should focus on ensuring that the post-development stormwater runoff rate will be equal to or less than the pre-development runoff rate. Any stormwater runoff has the potential to contribute to flooding downstream which may have liability issues for the municipality or LSD if not managed properly.
15. The Owner must update any drawings maintained of the wastewater system to reflect the modification or replacement of the works, where applicable.

Miscellaneous

16. The Permit Holder must prevent erosion of drainage ditches, streams or other natural bodies of water by installing rip-rap and/or sodding.
17. All drains and vents shall be equipped with screens to prevent the entry of insects, birds and rodents.
18. The ends of drains and overflows shall be located so as to prevent erosion. Where necessary, concrete or similar splash plates shall be located below the end of the overflow, and the immediate surrounding area shall be filled to a depth of 10 cm with 19 mm minus stone to

prevent ponding.

Wastewater Treatment

19. Effluent from the wastewater treatment facility must meet the *Environmental Control Water and Sewage Regulations, 2003* and the federal *Wastewater Systems Effluent Regulations, 2012*.
20. The municipal water system and the potable water piping system within any part of the treatment facility, shall be protected from the potential backflow of sewage due to back-siphonage or backpressure with the use of certified backflow prevention devices. In this case, the minimum device(s) to be used on the all buildings service lines shall be a certified reduced pressure zone backflow preventer, meeting or exceeding CSA 64.4. This device must be tested on an annual basis by a certified tester. This device must be tested on an annual basis by a certified tester. For protection of water users within any of the buildings, appropriate backflow preventers shall be attached to any hose bibb connection or water line where there is the possibility of contaminants entering the potable water system due to back-siphonage or backpressure.
21. The treatment facility must be equipped with a hydrogen sulfide and combustible solvent detection system which controls an audible alarm and an alarm light. The alarm light is to be located in an area(s) where it can be easily seen on approach to the building.
22. Standby or backup power shall be provided where discharges may endanger public health or the environment, for aeration systems, activated sludge systems, and disinfection systems.
23. Flow measurement facilities shall be provided on all wastewater treatment plants for monitoring of the final discharged effluent.
24. The wastewater treatment plant shall be enclosed by a fence.
25. The wastewater treatment plant shall be equipped with adequate gas detectors.
26. Adequate means or equipment for removing screenings shall be provided.
27. A screened bypass channel shall be provided.
28. Grit removal shall be provided in the headworks of all wastewater treatment plants. Grit removal systems shall be located upstream of the lagoon cells and downstream of any coarse bar racks. Indoor grit removal facilities shall be provided with air exchange systems.
29. Emergency generators and fuel storage tanks must be approved by Service NL.
30. The Water Resources Management Division of this Department is to be informed prior to start-up or restart-up of the sewage treatment facility. Specifically, this Division must be given adequate notice of manufacturer's training sessions and demonstrations of all major components as well as full plant initiation so that a representative may be present.
31. Drainage from mechanical sludge dewatering units shall be returned to the wastewater treatment plant.
32. Riprap or other erosion control is required around all piping inlets and outlet in lagoons.
33. All lagoon cells shall be provided with an emergency overflow system.
34. Any wastewater treatment facility that is designed to collect or collects an average daily volume of 100m³ or more of influent must adhere to the requirements of the federal *Wastewater Systems Effluent Regulations, 2012*.

Outfalls and Overflows

35. A minimum of 1.0 metres of water cover at L.N.T. is required over the outfall outlet, and the end of the outfall shall extend a minimum of 40 metres from the mean low water mark.
36. The outfall or overflow shall be installed in such a manner as to protect against the effects of tides, floodwater, ice or other hazards to ensure continuous function.
37. A sign shall be posted indicating the location of the outfall.
38. A manhole or other sampling location shall be provided so that an effluent sample can be obtained at a point after the final treatment process and prior to discharge to the receiving water.
39. Backwater prevention devices are required when there is the risk of flooding of the overflow.
40. Screening or baffling of the overflow is required to remove floatable material from being discharged into the environment.

Commissioning and Monitoring

41. The wastewater treatment system shall meet the required performance standards/criteria/objectives as established in the Request for Proposals.
42. This Department must be informed of the date of commission of the wastewater treatment system.
43. This Department shall require quarterly reporting of grab samples of wastewater influent and effluent quality analysed at an accredited lab or in house, as applicable, for the following parameters: CBOD5, TSS, un-ionized ammonia, total phosphorous, Total Coliforms and *E. Coli* counts (diluted if necessary), pH, and temperature (grab sample or in-situ). Results must be reported to the regional Environmental Scientist on a quarterly basis. At least one sample a year must be analysed for other parameters as referenced in Schedule A of the provincial *Environmental Control Water and Sewage Regulations, 2012*.
44. Effluent quantity and quality sampling and reporting shall be undertaken in accordance with the federal *Wastewater Systems Effluent Regulations, 2012* and the requirements of this Permit.

Alternative Disinfection

45. UV systems used to disinfect wastewater must be equipped with a meter to monitor transmittance. Flow gates and weirs shall be used to control the water level over the top of the UV lamps.

General Alterations

46. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
47. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
48. 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.
49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
55. 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.
56. 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.
57. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
58. All work must be carried out within the Permit Holder's legal property boundaries.

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
P.O. Box 8700
4th Floor, West Block, Confederation Building
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- cc: File Copy for Binder
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Environmental Engineer, Drinking Water and Wastewater Section
Water Resources Management Division
Department of Municipal Affairs and Environment
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- cc: Fisheries Protection Division
Ecosystem Management Branch
Fisheries and Oceans Canada
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- cc: Mr. Kenneth AuCoin, P.Eng
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Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 36, 48

Date: **AUGUST 28, 2018**

File No: **843.058.009**
Permit No: **WS9839-2018**

Permit Holder: **Town of Gander
100 Elizabeth Drive
PO Box 100
Gander NL A1V 1G7**

Attention: **Mr. James Blackwood, P. Eng.**

Re: **Gander - Wastewater Treatment Facility**

Permission was given for : the installation of a new wastewater treatment facility with a peak capacity of 23,800 m³/day to include: duplex automated coarse screen system, by-pass channel with manual bar screen, duplex aerated grit channel system, four aerated lagoon cells in series, UV disinfection system consisting of four UV banks in series, a submerged outfall with headwall to Whitman's Pond, and related appurtenances as described in the drawings titled, "Gander Wastewater Treatment Facility" as received from Pomerleau on July 16, 2018.

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

