Fisheries and Oceans Canada | Pêches et Océans Canada

Fish and Fish Habitat Protection Program
Arctic Region
301 – 5204 50th Ave. (Franklin)
Yellowknife, Northwest Territories
X1A 1E2

Programme de protection du poisson et de son habitat
Région de l'Arctique
301 – 5204 50th Ave. (Franklin)
Yellowknife, Territoires du Nord-Ouest
X1A 1E2

April 17, 2026

Your file *Votre référence*
2BE-STO2025

Subject: **Aston Bay Holdings Inc. Storm Project Application for Amendment to Water Licence 2BE-STO2025**

To whom it may concern,

On March 20, 2026, the Nunavut Water Board invited parties to comment on the Aston Bay Holdings Inc. Storm Project Application for Amendment to Water Licence 2BE-STO2025. The Fish and Fish Habitat Program of Fisheries and Oceans Canada (FFHPP-DFO) appreciates the opportunity to review the application and offers a comment below.

Comment DFO:

Comment
The Department of Fisheries and Oceans Canada, Fish and Fish Habitat Protection Program (DFO-FFHPP) has reviewed the Aston Bay Application for Amendment to Water Licence 2BE-STO2025 in accordance with DFO's mandate. The documents discuss using year-round water withdrawal activities for the duration of the project which has the potential to impact fish and fish habitat.

Direct fish mortality can occur during water withdrawal activities through entrainment/impingement. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when a fish is held in contact with the intake screen and is unable to free itself. Excessive amounts of water withdrawn from ice-covered waterbodies can impact fish through oxygen depletion, loss of over-wintering habitat and/or reductions in littoral habitat.

Recommendation
In order to comply with the Fisheries Act, it is recommended that the Proponent follow DFO's protective measures for fish and fish habitat and standard codes of practice which can be found on DFO's website (https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html and https://www.dfo-mpo.gc.ca/pnw-ppe/practice-practique-eng.html).

Proponents are also asked to respect the NU in-water works restricted activity timing windows (Projects Near Water - Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (dfo-mpo.gc.ca) to protect fish during spawning and

incubation periods when spawning fish, eggs and fry are vulnerable to disturbance or sediment.

The proponent should refer to DFO's Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater available at https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html when using fish screens and if the water intake flow is up to 0.150 m^3/s, or 150 liters per second (L/s).

For water withdrawal from watercourses, DFO recommends the proponent follow the Framework for Assessing the Ecological Flow Requirements to Support Fisheries In Canada (https://waves-vagues.dfo-mpo.gc.ca/Library/348881.pdf) and demonstrates that water withdrawal rate remains <10% of actual (instantaneous) flow and does not result in flows <30% of mean annual discharge (MAD).

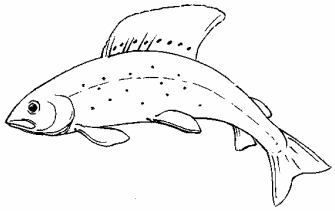
In addition, the proponent should follow the DFO Protocol for Winter Water Withdrawal in the NWT (2010) and not withdrawal more than 10% of under-ice water volumes (Attachment 1: DFO Winter Water Withdrawal Protocol, 2010).

If the proposal meets the criteria for a site specific review, as described on DFO's website (https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/request-review-demande-d-examen-003-eng.html), they should complete and submit the request for review form available on the website (https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/request-review-demande-d-examen-004-eng.html).

It is also the proponent's Duty to Notify DFO if they have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption, or the destruction of fish habitat. Such notification should be directed to DFO.ARCEMTriage-TriageGEARC.MPO@dfo-mpo.gc.ca

Yours sincerely,

Sarah Pakozdi
Biologist
Fish and Fish Habitat Protection Program
Fisheries and Oceans Canada



DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut

Rationale

In the Northwest Territories and Nunavut, winter activities such as access road construction, exploratory drilling and camp operations often require large amounts of water. Excessive amounts of water withdrawn from ice-covered waterbodies can impact fish through oxygen depletion, loss of over-wintering habitat and/or reductions in littoral habitat. The potential for such negative impacts to over-wintering fish and fish habitat has made winter water withdrawal a critical issue for Fisheries and Oceans Canada (DFO) in the Northwest Territories and Nunavut. To mitigate impacts to fish from water withdrawal from ice-covered waterbodies, and to provide standardized guidance to water users, including volume limits for certain water source types, DFO has developed this protocol in conjunction with industry and other regulators.

For the purposes of this protocol, a **waterbody** is defined as any water-filled basin that is potential fish habitat. A waterbody is defined by the ordinary high water mark of the basin, and excludes connecting watercourses.

This protocol will **not** apply to the following:

- Any waterbody that is exempted by DFO (e.g. Great Bear Lake, Great Slave Lake, Gordon Lake, and others as and when determined by DFO), and;
- Any waterbody from which less than $100m^3$ is to be withdrawn over the course of one ice-covered period.

In order to establish a winter water withdrawal limit for a given waterbody, the following criteria must be adhered to:

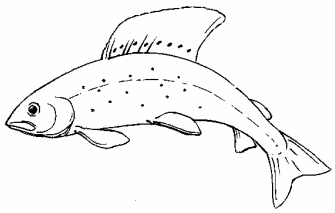
1. In one ice-covered season, total water withdrawal from a single waterbody is not to exceed 10% of the available water volume calculated using the appropriate maximum expected ice thickness provided in Table 1.
2. In cases where there are multiple users withdrawing water from a single waterbody, the total combined withdrawal volume is not to exceed 10% of the available water volume calculated using the appropriate maximum expected ice thickness provided in Table 1. Therefore, consistent and coordinated water source identification is essential.
3. Only waterbodies with maximum depths that are ≥1.5m than their corresponding maximum expected ice thickness should be considered for water withdrawal (Table 1). Waterbodies with less than 1.5m of free water beneath the maximum ice are considered to be particularly vulnerable to the effects of water withdrawal.
4. Any waterbody with a maximum expected ice thickness that is greater than, or equal to, its maximum depth (as determined from a bathymetric survey) is exempt from the 10% maximum withdrawal limit (Table 1).

To further mitigate the impacts of water withdrawal, water is to be removed from deep areas of waterbodies (>2m below the ice surface) wherever feasible, to avoid the removal of oxygenated surface waters that are critical to over-wintering fish. The littoral zone should be avoided as a water withdrawal location. Water intakes should also be properly screened with fine mesh of 2.54 mm (1/10") and have moderate intake velocities to prevent the entrainment of fish. Please refer to the *Freshwater Intake End-of-Pipe Fish Screen Guideline* (DFO, 1995) which is available upon request, or at the following internet address: www.dfo-mpo.gc.ca/Library/223669.pdf.

In order to determine the maximum water withdrawal volume from an ice-covered waterbody, and thereby conform to this protocol, the following information must be provided to DFO for review and concurrence prior to program commencement.

Water Source Identification

1. Proposed water sources, access routes, and crossing locations clearly identified on a map, with geographical coordinates (latitude/longitude and/or UTMs) included.
2. Any watercourse connectivity (permanently flowing and/or seasonal) between the proposed water source and any other waterbody or watercourse.



DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut

3. Aerial photos or satellite imagery of the water sources.
4. Estimated total water withdrawal requirement for work or activity and estimated total water withdrawal per water source (in m^3).

Bathymetric Survey Results

1. For all waterbodies: One longitudinal transect, connecting the two farthest shorelines, is to be conducted regardless of waterbody size. Note: a longitudinal transect may be straight or curved in order to accommodate the shape of a lake (see Figure 1).
2. For waterbodies equal to or less than 1 km in length: a minimum of one longitudinal transect and two perpendicular transects are to be conducted. Perpendicular transects should be evenly spaced on the longest longitudinal transect, dividing the lake into thirds (Figure 1).
3. For lakes greater than 1 km in length: a minimum of one longitudinal transect is to be conducted. Perpendicular transects (minimum of 2) should be evenly spaced on the longest longitudinal transect at maximum intervals of 500 m.
4. Additional transects should be run as required to include irregularities in waterbody shape such as fingers or bays (Figure 1).
5. All longitudinal and perpendicular transects are to be conducted using an accurate, continuous depth sounding methodology, such as open water echo sounding or ground penetrating radar (GPR), that provides a continuous depth recording from one shore to the farthest opposing shore (Figure 1). Any alternative technology should be reviewed by DFO prior to implementing for bathymetric surveys.

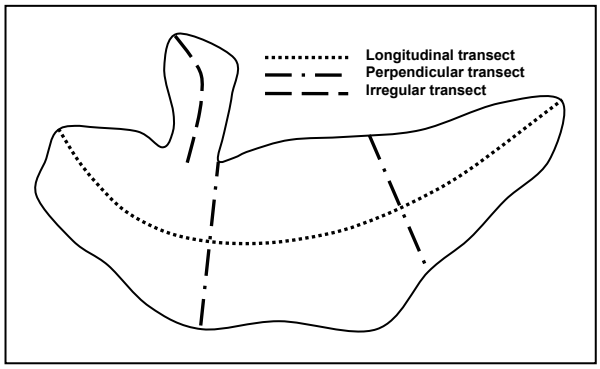
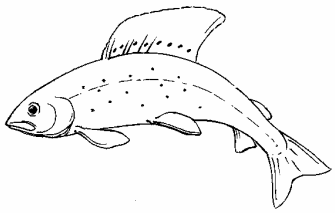


Figure 1. Minimum transect layout for a lake that is less than 1 km in length, with an irregularity.

Volume Calculations

1. Document the methods used to calculate surface area. If aerial photos or satellite imagery were used, provide the date (day/month/year) taken, as surface area may change depending on the time of year. If maps were used, provide the year that they were surveyed.
2. Detail the methods used to determine the total volume of free water, incorporating the relevant bathymetric information.
3. Calculate the available water volume under the ice using the appropriate maximum expected ice thickness, i.e. *Total Volume* $_{lake}$ *– Ice Volume* $_{max\ thickness}$ *= Available Water Volume* (see Table 1 for maximum ice thickness).
4. For programs where ice-chipping is used, the total ice volume to be removed from the waterbody should be converted to total liquid volume and incorporated into the estimate of total water withdrawal requirement per water source.



DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut

Table 1. Maximum expected ice thickness, and corresponding water depth requirements, for different regions in the Northwest Territories.

Area	Maximum Expected Ice Thickness (m)	Minimum Waterbody depth Required for 10% Water Withdrawal (m)
Above the Tree Line	2.0	≥3.5
Below the Tree Line - North of Fort Simpson	1.5	≥3.0
Deh Cho –South of Fort Simpson	1.0	≥2.5

A brief project summary report documenting and confirming total water volume used per water source and corresponding dates should be submitted to DFO within 60 days of project completion. Information should be provided in the following format (this information would also be useful as part of the project description):

Lake ID	number and/or name
Coordinates	latitude and longitude and/or UTM coordinates
Surface area	in ha
Total Lake Volume	in m^3
Under Ice Volume	in m^3 (based on max ice thickness for region)
Max expected ice thickness value used	in m
Calculated 10% Withdrawal volume	in m^3
Total required water volume extracted	in m^3
Aerial photographs of waterbody	PDF format
Bathymetric Map(s) of waterbody	PDF format

Any requests deviating from the above must be submitted to DFO and will be addressed on a site-specific basis.

Beaver and Muskrat

Many species of animals are highly sensitive to water fluctuations. In areas where beaver and muskrat may occur, the appropriate agencies or organizations should be consulted to determine if harmful effects will result from your activities, and whether these effects can be successfully mitigated through modifications to your plans including best management practices.

Please note that adherence to this protocol does not release the proponent of the responsibility for obtaining any permits, licenses or authorizations that may be required.

For more information contact DFO at (867) 669-4915.