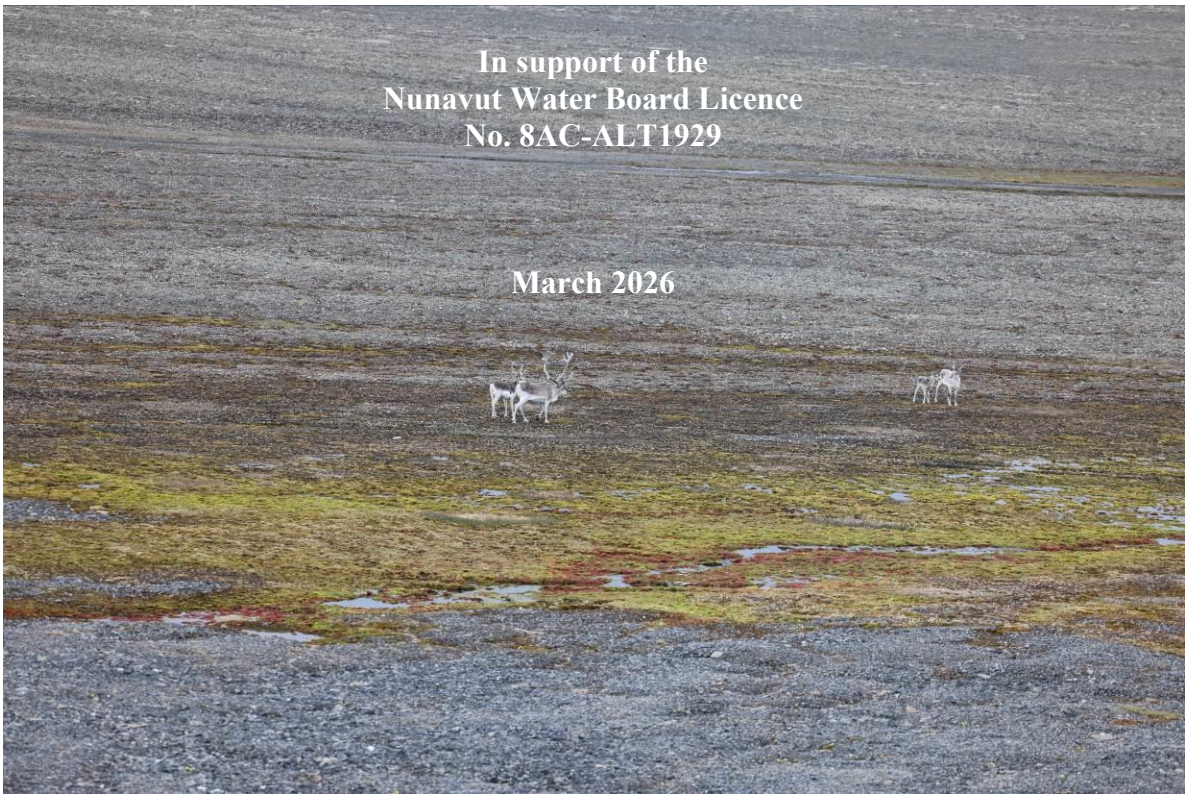
2025 Annual Report for CFS Alert, Nunavut



Prepared for:
Nunavut Water Board

Licensee:
RP Ops Group North
Department of National Defence

Prepared & Submitted by:
8 Wing Environmental Management,
8 Wing Trenton,
Department of National Defence
31 March 2026

Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut, X0B 1J0

Attention: Manager of Licencing

Subject: 2025 Annual Report for CFS Alert, Nunavut

Please find enclosed a copy of the 2025 Annual Report to the Nunavut Water Board and Executive Summary in English and Inuktitut for the following site:

1. Canadian Forces Station (CFS) Alert – 8AC-ALT1929 Type "A"

The Annual Report is being submitted by the Department of National Defence at 8 Wing/Canadian Forces Base Trenton on behalf of the licensee, the Department of National Defence at RP Ops N- ADM (IE).

Should the Nunavut Water Board have comments or require additional information regarding the Annual Report, please contact Dr. Andrew Tam, 8 Wing Environment Officer, 8 Wing Environmental Management at (613) 392-2811 x827-3930 or by e-mail at: Andrew.Tam@forces.gc.ca.

Sincerely,

TAM, ANDREW 832

Digitally signed by TAM, ANDREW 832
Date: 2026.03.23 17:19:05 -04'00'

Andrew Tam, PhD.
8 Wing Environment Officer, Environmental Management
Department of National Defence / Government of Canada
Andrew.Tam@forces.gc.ca / Tel: 613-392-2811 Ext. 827-3930

8 Wing Environmental Management, Room 305, 74 Polaris Avenue, Box 1000 Stn Forces, Astra, Ontario, K0K 3W0
Fax: 613-965-3368

Table of Contents

2025 Annual Report to the Nunavut Water Board

Annual Report to the Nunavut Water Board

Licensee: Department of National Defence – RP Ops - ADM (IE)
Licence: 8AC-ALT1929 Type "A",
Location: Canadian Forces Station Alert, Ellesmere Island, Qikiqtani Region, Nunavut.

Report submitted by: Department of National Defence –
8 Wing/Canadian Forces Base Trenton –
8 Wing Environmental Management,
31 March 2026

Executive Summary

The 2025 annual report to the Nunavut Water Board (NWB) is a requirement under Licence Number 8AC-ALT1929 Type "A", Part B, Paragraph 1. This annual report is for Canadian Forces Station (CFS) Alert, Nunavut. The Licence was issued on November 1st, 2019, to the Department of National Defence (DND) Real Property Operations North (RP Ops N) - Assistant Deputy Minister of Infrastructure & Environment (ADM(IE)). As 8 Wing – Canadian Forces Base (CFB) Trenton, Ontario, oversees CFS Alert, 8 Wing Trenton is filing the annual report on behalf of the DND licensee, Real Property Operations North (RP Ops N) - Assistant Deputy Minister of Infrastructure & Environment (ADM(IE)).

For 2025, the average daily water usage at CFS Alert was 262 m^3. This usage is below the 875 cubic meters daily water usage allowed by the NWB Licence. The daily water usage amount being reported is less than the daily intake amount of raw water from the source at Upper Dumbell Lake. A large portion of this usage water is directly returned (raw and untreated) to the source concurrently to the intake process, the average return amount was 197 m^3/day. This constant circulatory (return) flow of the raw water prevents freezing damages to the water pipelines. The average daily water consumption amount was 118 m^3. The total annual quantity of water used in 2025 was 95,547 m^3.

Hazardous wastes (Glycol, waste oils, waste fuel and other hazardous liquids) were backhauled from CFS Alert in 2025 for disposal outside of Nunavut in Ontario, by external contractors. Non-hazardous domestic wastes produced from CFS Alert were incinerated and the ashes directed to the designated Main Station Landfill. All sewage was directed to the Sewage Terrace System.

DND maintains committed to demonstrating compliance to the NWB Licence and is planning to continue the CFS Alert Surveillance Network Program capabilities in Summer 2026.

2025 ᐊᕐᕌᒍᓕᒫᒧᑦ ᐅᓂᒃᑳᖅ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔨᖏᓐᓂ

ᓚᐃᓵᓯᓕᕆᔨ: ᑲᓇᑕᒥ ᐅᓇᑕᖅᑐᓵᓕᕆᔨᒃᑯᑦ – RP Ops - ADM (IE)
ᓚᐃᓴ: 8AC-ALT1929 Type "A",
ᓇᒦᓐᓂᖓ: ᑲᓇᑕᒥ ᐅᓇᓕᑦᑕᓕᒃ ᐊᓘᑦ (Alert), ᐊᐅᓯᐃᑦᑑᑉ ᕿᑭᖅᑖᓗᐊ,
ᕿᑭᖅᑖᓗᒻᒥ, ᓄᓇᕗᑦ.

ᑐᓂᓯᓯᒪᔪᑦ: ᑲᓇᑕᒥ ᐅᓇᑕᖅᑐᓵᓕᕆᔨᒃᑯᑦ –
8–ᖓᓐᓄᑦᑐᑦ/ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ ᐊᓪᓚᕕᖓᓐᓂ ᑐᕋᓐᑕᓐ –
8–ᖓᓐᓄᑦᑐᖅ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᐅᓚᑦᑎᔨᖏᑦ,
ᒫᔾᔨ 31, 2026

<u>ᓯᕗᓕᖅᑏᑦ ᐅᓂᒃᑳᖏᑦ ᓇᐃᓇᖅᓯᒪᔪᑦ</u>

2025 ᐊᕐᕌᒍᓕᒫᒧᑦ ᐅᓂᒃᑳᖅ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔨᖏᓐᓂ (NWB) ᓄᑖᕈᖅᑎᑦᑎᖃᑦᑕᕆᐊᖃᕐᖓᑕ ᓚᐃᒪᔅᓯᓂᒃ ᓈᓴᐅᑎᓕᒻᒥᑦ 8AC-ALT1929 ᓇᓗᓇᐃᒃᑯᑎᖓ "A", ᐃᓚᖓ B, ᑎᑎᕋᖅᓯᒪᔪᖅ 1–ᒥ. ᑖᓐᓇ ᐊᕐᕌᒍᓕᒫᖅ ᐅᓂᒃᑳᖅ ᑖᒃᑯᓄᖓᓐᖓᔪᑦ ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ (CFS) ᐊᓘᑦ (Alert), ᓄᓇᕗᑦ. ᓚᐃᓵᔅ ᑐᓂᔭᐅᓚᐅᖅᓯᒪᔪᖅ ᓅᕕᐱᕆᒥ 1, 2019, ᑲᓇᑕᒥ ᐅᓇᓕᓵᓕᕆᔨᒃᑯᖏᓐᓄᑦ (DND) – ᑲᓇᑕᒥ ᐃᓪᓗᐊᓗᒻᒥᑦ ᐊᐅᓚᑦᑎᓂᖏᓐᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ (RP Ops N) - ᒥᓂᔅᑕᐅᑉ ᑐᖏᓕᖓᑦᑕ ᐃᑲᔪᖅᑎᖓ ᐃᓪᓗᕐᔪᐊᓕᕆᓂᕐᒧᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᓪᓗ (ADM(IE)). 8–ᒥᑦ ᓇᓗᓇᐃᒃᑯᑎᓕᒃ – ᑲᓇᑕᒥ ᐅᓇᓖᑦ ᐊᓪᓚᕕᖓ (CFB) ᑐᕋᓐᑕᓐ, ᐊᓐᑎᐅᕆᔪ, ᑲᒪᖃᑦᑕᕐᖓᑕ ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ (CFS) ᐊᓘᑦ (Alert), 8–ᒥᑦ ᓇᓗᓇᐃᒃᑯᑎᓕᒻᒥᑦ ᑐᕋᓐᑕᒥ ᑐᓂᓯᒪᑕ ᐊᕐᕌᒍᓕᒫᒧᑦ ᐅᓂᒃᑳᕐᒥᑦ ᐱᔾᔪᑎᖃᖅᑐᑎᑦ ᑲᓇᑕᒥ ᐅᓇᓕᓵᓕᕆᔨᒃᑯᑦ ᓚᐃᓵᓯᖓᓐᓂ, ᐃᓪᓗᕐᔪᐊᒧᑦ ᐊᐅᓚᑦᑎᓂᖓᓐᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ (RP Ops N) - ᒥᓂᔅᑕᐅᑉ ᑐᖏᓕᖓᑦᑕ ᐃᑲᔪᖅᑎᖓ ᐃᓪᓗᕐᔪᐊᓕᕆᓂᕐᒧᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᓪᓗ (ADM(IE)).

2025–ᒥ, ᐃᒥᕐᒥ ᖃᐅᑕᒫᑦ ᐊᑐᖃᑦᑕᓚᐅᕐᖓᑕ ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ (CFS) ᐊᓘᕐᒥ (Alert) ᑕᒫᓂ 262 m³. ᐊᑐᖅᑕᐅᓂᖓ ᐊᑖᓂᓚᐅᖅᑐᑦ 875 (cubic meters) ᓯᒃᑭᑦᑕᑲᓪᓚᓐᓂᒃ ᒦᑕᓂᒃ ᖃᐅᑕᒫᑦ ᐱᔪᓐᓇᐅᖅᑎᑕᐅᓪᓗᑎᑦ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ (NWB) ᓚᐃᓵᔅᓯᖓᒍᑦ. ᐃᒪᕐᒥᑦ ᐊᑐᕈᓐᓇᖅᑕᖏᓐᓂ ᐅᓂᒃᑳᓕᐅᖃᑦᑕᖅᑐᑎᑦ ᖃᑦᑏᓐᓇᐅᓂᖅᓴᐅᕙᑦᑐᓂ ᐊᑐᕆᐊᓕᖏᓐᓂ ᐃᒥᑐᐃᓐᓇᕐᒥᑦ ᑕᐃᑲᓂ ᖁᕝᕙᓯᑦᑐᒥᑦ ᑕᓯᕐᒥᑦ (Upper Dumbell Lake). ᐃᒪᖅ ᐊᑐᖅᑕᖓ ᐅᑎᖅᐸᑦᑐᑎ ᐊᖏᓂᖅᓴᖅ (ᑭᓯᓕᖅᓯᒪᓐᖏᑦᑐᖅ) ᒫᓐᓇᐅᔪᖅ ᐱᔭᐅᕙᑦᑐᓂᒃ, ᑕᒫᓂᖃᐃ ᐅᑎᖅᐸᑦᑐᑦ 197 m³/ᖃᐅᑕᒫᑦ. ᑕᒪᓐᓇ ᐃᖏᕐᕋᐃᓐᓇᖅᑐᖅ ᐅᑎᖅᑕᖅᑐᒥ ᐃᒪᒃᑯᕕᒻᒧᑦ ᖁᐊᓐᖏᓚᕿᕙᑦᑐᖅ ᓱᓪᓗᓕᒃᑰᖅᑐᑦ. ᖃᐅᑕᒫᑦ ᐃᒥᖅᑐᐸᑦᑐᑦ ᑕᒫᓂ 118 m³. ᑲᑎᑦᑐᒋᑦ ᐊᕐᕌᒍᑕᒫᑦ ᐃᒥᖅᑐᖃᑦᑕᖅᑐᑦ 2025 ᑕᒫᓃᓚᐅᖅᑐᖅ 95,547 m³.

ᐊᑦᑕᕐᓇᖅᑐᑦ ᐊᒃᑕᑯᑦ (ᓂᒡᓕᓇᖅᑐᑦ, ᐅᖅᓱᖅᑎᕈᑎᕕᓃᑦ, ᐅᖅᓱᐊᓗᕕᓃᑦ ᐊᓯᖏᓪᓗ ᐊᑦᑕᕐᓇᖅᑐᑦ ᐃᒪᖏᑦ) ᐅᓯᔭᐅᓪᓗᑎᑦ ᑕᐃᑲᖓᑦ ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ (CFS) ᐊᓘᕐᒥ (Alert) 2025–ᒥ ᐃᕆᑕᐅᓂᐊᖅᑐᑎᑦ ᓄᓇᕗᑦ ᓯᓚᑖᓂ ᐊᓐᑎᐅᕆᔪᒧᑦ, ᓯᓚᑖᓂ ᑳᓐᑐᕆᔅᓯᓪᓗᑎᑦ. ᖁᐊᖅᓵᕐᓇᖏᑦᑐᑦ ᐊᖏᕐᕋᕆᔭᐅᔪᓂ ᐊᒃᑕᑯᑦ ᓴᓇᔭᐅᔪᑦ CFS–ᑯᓐᓂᑦ ᐃᑯᐊᓚᑎᑕᐅᓚᐅᖅᐳᑦ ᐊᐅᒪᖏᓪᓗ ᑐᕌᖅᑎᑕᐅᓪᓗᑎᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᒧᑦ ᐃᓂᒋᔭᐅᓪᓗᐊᑕᖅᑐᒧᑦ ᐊᒃᑕᕐᕕᖕᒧᑦ. ᑭᓈᓗᓕᒫᑦ ᑐᕌᖅᑎᑕᐅᓚᐅᖅᐳᑦ ᑭᓈᓗᖃᕐᕕᖕᒧᑦ.

ᑲᓇᑕᒥ ᐅᓇᑕᖅᑐᓵᓕᕆᔨᒃᑯᑦ (DND) ᑲᒪᐃᓐᓇᕐᓂᐊᖅᑐᑦ ᐊᑐᕐᓗᑎᑦ ᒪᓕᓪᓗᑎᑦ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔩᑦ (NWB) ᓚᐃᓵᔅᓯᖏᓐᓂ ᐸᕐᓇᐅᑎᖏᓐᓂᓪᓗ ᑲᔪᓯᑎᑦᑎᓗᑎᑦ ᑲᓇᑕᒥ ᐅᓇᓕᒃᑯᑦ (CFS) ᐊᓘᕐᒥ (Alert) ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᖃᕋᓴᐅᔭᒃᑯᑦ ᐃᑲᔪᑎᓂᒃ ᐱᔪᓇᕐᓂᐊᖅᑐᖅ ᐊᐅᔭᒃᑯᑦ 2026–ᒥ.

2025 Rapport annuel à l'Office des eaux du Nunavut

Détenteur du permis :	Ministère de la Défense nationale – Ops Imm – SMA(IE)
Permis :	8AC-ALT1929 Type "A",
Lieu :	Station des Forces canadiennes Alert, île d'Ellesmere, région de Qikiqtani, Nunavut.
Rapport présenté par :	Ministère de la Défense nationale – 8e Escadre/Base des forces canadiennes Trenton – Gestion environnementale de la 8e Escadre, 31 mars 2026

Sommaire

Le rapport annuel 2025 présenté à l'office des eaux du Nunavut (OEN) constitue une exigence aux termes du permis no 8AC-ALT1929 Type « A », partie B, paragraphe 1. Le présent rapport annuel vise la Station des Forces canadiennes (SFC) Alert, au Nunavut. Le permis a été délivré le 1er novembre 2019 au ministère de la Défense nationale (MDN) – Opérations immobilières (Nord) [Ops Imm (Nord)] du sous-ministre adjoint (Infrastructure et environnement) [SMA(IE)]. Comme la 8e Escadre/Base des Forces canadiennes (BFC) Trenton, en Ontario, supervise la SFC Alert, la 8e Escadre Trenton présente le rapport annuel au nom du nouveau détenteur de permis du MDN, les Ops Imm (Nord) du SMA(IE).

En 2025, l'utilisation quotidienne moyenne d'eau à la SFC Alert était de 262 m^3, ce qui est inférieur à la consommation quotidienne de 875 m^3 d'eau autorisée par le permis de l'OEN. La quantité d'eau utilisée quotidiennement qui est déclarée est inférieure à la quantité d'eau brute puisée quotidiennement de la source du lac Upper Dumbell. Une grande partie de l'eau utilisée est retournée directement (brute et non traitée) à la source en même temps qu'elle est puisée, et la quantité moyenne d'eau retournée s'élève à 197 m^3 par jour. Cette circulation constante de l'écoulement (restitué de l'eau brute) empêche le gel d'endommager les canalisations d'eau. La quantité moyenne d'eau consommée quotidiennement était de 118 m^3. La quantité annuelle totale d'eau utilisée en 2025 était de 95,547 m^3.

En 2025, les déchets dangereux (glycol, huiles usées, combustible résiduaire et autres liquides dangereux) ont été réacheminés de la SFC Alert vers l'Ontario à des fins d'élimination à l'extérieur du Nunavut par des entrepreneurs externes.

Le MDN demeure résolu à démontrer sa conformité au permis de l'OEN et prévoit maintenir les capacités du programme du réseau de surveillance de la SFC Alert à l'été 2026.

NWB Annual Report **Year being reported:** 2025

License No:	8AC-ALT1929	**Issued Date:**	November 1, 2019
		Expiry Date:	October 31, 2029

Project Name: Canadian Forces Station (CFS) Alert, Nunavut

Licensee: Department of National Defence - Real Property Operations-ADM(IE)

Mailing Address:
Real Property Operations Group
Department of National Defence
Assistant Deputy Minister (Infrastructure & Environment)
101 Col By Drive, Ottawa, ON, K1A 0K2

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

8 Wing Environmental Management
Room 308, Building 22, 74 Polaris Ave.
Department of National Defence - 8 Wing/ CFB Trenton
Box 1000, Stn Forces
Astra, Ontario, K0K 3W0

General Background Information on the Project (*optional):

Formerly: 8AC-ALT---- Type A until Oct 31, 2019.
Formerly: 3BC-ALT1015 Type B.

Licence Requirements: the licensee must provide the following information in accodance with

Part B | Item 1

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Upper Dumbell Lake, Nunavut.	
Water Quantity:	875	Quantity Allowable Domestic (cu.m)
	262	Actual Quantity Used Domestic (cu.m)
		Quantity Allowable Drilling (cu.m)
		Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- [x] Solid Waste Disposa
- [x] Sewage
- [ ] Drill Waste
- [x] Greywater
- [x] Hazardous
- [x] Other: Landfarms

Appendix A: Monitoring Program Stations No. ALT-1-2-3-4-5-6-7
Appendix B: Monitoring Program Stations No. ALT-8-9-10-11
Appendix C: Summary of Reporting Results for ALT-1-2-3-4-5-6-7-8-9-10-11-12-13
Appendix D: June/July Analysis Results for ALT-2-4-5-6-7-8-9
Appendix E: Aug/Sept Analysis Results for ALT-2-3
Appendix F: List of Waste Disposal Activities /
Appendix G: Progressive and Final Reclamation Work Undertaken
Appendix H: Proposed/Future Infrastructure Works
Appendix I: Follow up requirements to the NWB and CIRNAC

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

No reportable spills in 2025

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

No revisions required.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

DND is retaining a consultant to develop a reclamations options analysis for the historical waste deposits. DND expects to have a report in 2027.

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

See Appendix H.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details described below

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details described below

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

Inspection was completed By CIRNAC in summer of 2024; debrief and report received 07 Nov 2025.

Any additional comments or information for the Board to consider

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Date Submitted:	March 31, 2026	
Submitted/Prepared by:	Andrew Tam, PhD	
Contact Information:	**Tel:**	613-392-2811 x8273930
	Fax:	613-965-3368
	email:	andrew.tam@forces.gc.ca

GPS Coordinates for water sources utilized

Source Description	**Latitude** Deg °	Min ′	Sec ″	**Longitude** Deg °	Min ′	Sec ″
Upper Dumbell Lake	82	29	6.2	-62	28	9.5

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min ′	Sec ″	Deg °	Min ′	Sec ″
Alert Battery Dump	82	29	16	-62	23	15.32
Alert Main Station Landfill	82	30	17	-62	20	14.89
Alert Dump # 3	82	29	18	-62	20	57.01
Landfarm (ALT-11)	82	30	40	-62	18	37.6
Millionaire's Dump	82	29	19	-62	21	30.4
Sewage Terrace/Outfall	82	29	56	-62	21	4.8
Landfarm (ALT-10, new)	82	29	58	-62	21	16

Appendix A Monitoring Program Station No. ALT-1-2-3-4-5-6-7

Monitoring Program Station No. ALT-1
Year: 2025
Name: Water Supply at Raw Water Intake
Licence Daily Water Use (to not exceed) Limit: 875 cubic metres [m^3].

Results for: All Purpose Water Monitoring
Daily Water Usage Quantity: 262 cubic metres [m^3].
Annual Water Usage Quantity: 95,547 cubic metres [m^3].

The usage for 2025 was in compliance with the Licence Daily Water Use Limit of 875 m^3.

NOTE: As requested by the Board during their technical review of the 2024 Annual Report, please see the daily, monthly, annual quantities in cubic metres within the attached:

"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlxs" file, TAB > ALT – 1 Water Withdrawals.

Monitoring Program Station No. ALT-2 & ALT 3
Year: 2025
Month: June, July, August and September
ALT-2 Name: Sewage Terrace Outfall Point
ALT-3 Name: Sewage Terrace Final Discharge Point
Description: Effluent Quality Results.

Note1:
The Alert Sewage Terrace System is being monitored by Nasittuq Corporation, under service contract by DND and administrated by 8 Wing Trenton Environmental Management in Trenton, Ontario. Water quality samples are collected and analyzed by ALS Canada Ltd., Ontario.

Note2: As requested by the Board during their technical review of the 2024 Annual report, please see the daily, monthly, annual quantities in cubic metres within the attached:

"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlxs" file, TAB > ALT 2 – 13 Results.

Note3:
As requested by CIRNAC for clarity in Sewage Sludge operations, there is no quantity of sewage sludge removal from ALT-2 & ALT-3 (Sewage Terrace System), as the sewage is required to remain for operations and maintenance of the engineered sewage terrace wetland system, as designed.

Monitoring Program Stations No. ALT-4-5-6-7
Year: 2025

ALT-4 Name: Main Station Landfill
ALT-5 Name: Battery Dump
ALT-6 Name: Millionaire's Dump
ALT-7 Name: Dump 3

Description: Runoff and Leachate.

Note1: As requested by the Board during their technical review of the 2024 Annual report, the results of the 2025 Annual Report will be presented differently using a new template.

Note2:

Please see the daily, monthly, annual quantities in cubic metres within the attached: **"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlxs"** file, TAB > "ALT 2- 13 Results".

Results:

Copies of the Certificate of Analysis are attached as Appendix D (June & July) and Appendix E (Aug & Sep).

June (Runoff Season)
Analytical Results for ALT-4, 5, 6 and 7 are summarized in:
"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlsx" file, TAB > "ALT 2-13 Results".

July
Analytical Results for ALT-4, 5, 6 and 7 are summarized in:
"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlsx" file, TAB > "ALT 2- 13 Results".

August
The Department of National Defence was not successful in collecting samples at Monitoring Program Station ALT-4, 5, 6 or 7, during the period of runoff in August 2025 as the sampling stations were frozen over and free from any standing or flowing water, and dry conditions.

September (Winter return)
The Department of National Defence was not successful in collecting samples at Monitoring Program Station ALT-4, 5, 6 or 7, during the period of runoff in September 2024 as the sampling stations were frozen over and free from any standing or flowing water, and dry conditions.

Appendix B Monitoring Program Stations No. ALT-8-9-10-11-12

Year: 2025
Description:Discharge from Tank Farm Secondary Containments ALT-8-9-10 & Landfarm Facility ALT-11-12.

Results:

The Department of National Defence (DND) intended to discharge water from the Fuel Tank Farm Secondary Containments at ALT-8-9-10 in July 2025. At least 10 days notice was provided to the Inspector and Nunavut Water Board, the email chain is attached below.

Water samples from within the secondary containments of ALT-8-8.1-9 -10 were collected on 30 Jun and 01 Jul were analyzed; analytical results are summarized below and attached in the file: **"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlxs"**

Two samples were taken at ALT-8 (sample identifications: ALT-8 and ALT-8.1) to better represent the freshet quality due to the large size of the Secondary Containment facility.

ALT-8 had one exceedance of Lead. No water was discharged from this location.

In July 2025, analytical results of the berm water results at the Lower Airfield Tank Farm (ALT-8.1) and Upper Tank Farm (ALT-9) were compliant to the Effluent Quality Limits of the Alert Water Licence, as per Part E, Item 12 and 13. Day Tank ALT-10 was dry.

DND had no intentions to discharge any water from Land Farm Treatment Facilities at ALT-11 and ALT-12.

Notes (extra spaces removed):

From: Monteith, Joseph (he) <joseph.monteith@rcaanc-cirnac.gc.ca>
Sent: July 15, 2025 4:18 PM
To: Tam A@CFB Trenton WENV@Trenton <Andrew.Tam@forces.gc.ca>
Subject: RE: 8AC-ALT1929 Tank Farm Secondary Containment Dewatering Request - 10 days notice

Hello,

You may proceed with decanting ALT 8.1 and ALT 9.

I look forward to seeing the amendment to the water license to ensure that the background lead is taken into account.

Regards,

JM

JM

Joseph Monteith
Resource Management Officer
Qikiqtani Region
Crown-Indigenous Relations
And Northern Affairs Canada
P.O. Box 2200
Iqaluit, NU
X0A 3H0
Ph: 867 975-4289
Cell: 867 975-1787
Fax: 867 979-6445
Email:joseph.monteith@canada.ca

Crown-Indigenous Relations and Northern Affairs Canada | Relations Couronne-Autochtones et Affaires du Nord Canada

From: Andrew.Tam@forces.gc.ca <Andrew.Tam@forces.gc.ca>
Sent: Tuesday, July 15, 2025 1:27 PM
To: Monteith, Joseph (he) <joseph.monteith@rcaanc-cirnac.gc.ca>
Subject: 8AC-ALT1929 Tank Farm Secondary Containment Dewatering Request - 10 days notice

COURRIEL EXTERNE - FAITES PREUVE DE PRUDENCE / EXTERNAL EMAIL - USE CAUTION

Good afternoon Joseph,

Please find attached the analytical results for 8AC-ALT1929 monitoring stations: ALT-8 (orange fuel tanks at the Airfield in its own berms), ALT-8.1 (white fuel tanks at the Airfield in its own berms), and ALT-9 White Tanks -Upper Tank Farm Secondary Containment (own berms).

The results from the lab have come back with below detections for all parameters except the regular Lead exceedances (above 1.0 ug/L) at ALT-8 only (please see attached).

The results for ALT-8.1 and ALT-9 were below detections for ALL parameters (Compliant to Part E, Subsection 12, and no visible sheens), and as per the water licence condition Part E, Subsection 15, I (DND) am providing you with our 10 days notice of intent to dewater ALT-8.1 and ALT-9 only.

DND will withhold dewatering ALT-8 at this time for further assessment of the routine Lead exceedances.
Note: There are no intentions to dewater any waters from ALT-10 (Day Tank Secondary Containment), ALT-11 (Airfield Landfarm), and ALT-12 (Day Tank Landfarm).

For background reference, Lead in water exceedances at the Station's property typically come back with results above the Licence stipulated 1 ug/L criteria. It is suspected that this is due to high background levels of certain metals in the geographical area. A third-party contractor (Royal Military College) has produced a Report, submitted in the 2024 Annual Report, that links this phenomenon to natural background conditions due to Alert's geology and chemical weathering process. DND is also working on initiating the process to amend the 8AC-ALT1929 Licence Conditions to raise the Lead criteria to a value above 1 ug/L.

To help hasten, may I (DND) please request the CIRNA Inspector's approval to begin de-watering procedures to the tundra (as per Part E, Subsections 1, 12, and 13), with appropriate sediment erosion mitigation measures, as soon as possible?

Please let me know if this is can supported?

Thank you,
Andrew

Andrew Tam, PhD.
(he, him / il, lui)

8 Wing Environment Officer, Environmental Management
Department of National Defence / Government of Canada
Andrew.Tam@forces.gc.ca / Tel: 613-965-3930 / CSN: 827-3930 / Cell: 613-243-7532

Officier de l'environnement de la 8ième escadre, Gestion d'environnement
Ministère de la Défense nationale / Gouvernement du Canada
Andrew.Tam@forces.gc.ca / Tél: 613-965-3930 / RCCC: 827-3930 / Tél Cell: 613-243-7532

Appendix C Summary of Reporting Requirements for ALT-1-2-3-4-5-6-7-8-9-10-11-12-13

All results and reporting requirements are also summarized and presented in the .xlsx file name: **"8AC-ALT1929-Appendix-C-ALERT-Reporting-Requirements-2025.xlsx"**

This document template was developed by CIRNAC and implemented by DND in 2025 for ease of data presentation and usage.

Appendix D June/July Analysis Results for ALT-2-4-5-6-7-8-9

A copy of the analytical results are attached in Appendix D as files:

June 2025

1. **“8AC-ALT1929-Appendix-D-ALT-2_June30_2025COA.pdf”**
2. **“8AC-ALT1929-Appendix-D-ALT-4_5_6_7_Jun30_2025COA.pdf”**
3. **“8AC-ALT1929-Appendix-D-ALT-8_8.1_9_Jun30_2025COA.pdf”**

July 2025

4. **“8AC-ALT1929-Appendix-D-ALT-2_Jul1_2025COA.pdf”**
5. **“8AC-ALT1929-Appendix-D-ALT-4_5_6_7_Jul1__2025COA.pdf”**
6. **“8AC-ALT1929-Appendix-D-ALT-8_8.1_9_Jul1_2025COA.pdf”**

Appendix E Aug/Sep Analysis Results for ALT-2-3

A copy of the analytical results are attached in Appendix E as file:

Aug 2025

1. **“8AC-ALT1929-Appendix-E-ALT-2_3_Aug30_2025COA .pdf”**

Sep 2025

2. **“8AC-ALT1929-Appendix-E-ALT-2_3_Sep3_2025COA.pdf”**

Appendix F List of Waste Disposal Activities

Year: 2025
Reference: 8AC-ALT1929

Main Station Landfill:
-Deposition of non-hazardous incinerator ash and all acceptable materials to site.

Millionaire's Dump:
-In 2018 the Millionaire's dump was closed to disposal of all station waste. No material was placed in the dump in 2025.
-Millionaire's dump was also recapped and the south-east side of landfill as per CIRNAC Inspectors direction in July 2024.

Battery Dump:
-No wastes were deposited at this site; no waste deposition is allowed at this site. The battery dump was successfully recapped in September 2022.

Dump #3:
-No wastes were deposited at this site; no waste deposition is allowed at this site.

Landfarms:

ALT-11 Landfarm
- ALT-11 (Airfield Land farm) is currently at capacity. No new material was added to this location in 2025.

ALT 12 (Day Tank Land Farm)
- ALT -12 (Day Tank Land Farm) is currently at capacity. The land farm was then treated and turned in summer 2025. Future sampling will be conducted and monitored as the remediation process continues.

The Temporary Land Farm planned to be constructed in 2023 was completed in 2024. No new materials were added to this location in 2025.

Hazardous Waste Backhauled from CFS Alert in 2025:

CFS Alert Hazardous Waste Generator #NUG100048;
DND Hazardous Waste Carrier #NUC200012.

Please see attached file for copies of hazwaste manifests of backhauled items in 2025:
"8AC-ALT1929-Appendix F-2025-HazWaste-Movement-Documents.pdf"

Waste Glycol: 13,980 L
Waste Fuel: 6,433 L
Waste Oil: 2,719 L
Misc Hazwaste (mixed liquids): 1,594 L

All hazardous wastes from CFS Alert were collected at 8 Wing Trenton and transferred to contractors for proper disposal under 8 Wing Trenton's Ontario Hazardous Waste Generator #ON0046507.

Appendix G Progressive and Final Reclamation Work Undertaken

Year: 2025
Reference: 8AC-ALT1929, Part B, Item 1.

Progressive Reclamation Work Undertaken in 2025:

A. Contaminated Sites In-Situ Bioremediation Work:
Continuation of the pilot scale in-situ bioremediation study for petroleum hydrocarbon biodegradation at the following sites:
1) Oxidator Building;
2) Baker's Dozen.
Develop long term monitoring program for PHC contamination in key areas.
These locations were monitored in 2025, however no sampling or work was completed in these areas.

B. Reclaim of Soils in the Landfarm (ALT-11) Treatment Facility:
Inspection of large biopile walls were visually performed to ensure no PHC contamination is breaching from the soils under treatment in the biopile – no concerns observed.

C. Rotation of Soils in the Landfarm (ALT-11) Treatment Facilities:
Continuation of the microbial nutrient augmentation and aeration process to increase oxygen content in the contaminated soil to promote microbial and bacterial activity within the landfarm facilities. This was conducted at the ALT-11 Landfarms. No water was discharged from this facility in 2025.

D. Rotation of Soils in the Landfarm (ALT-12) Treatment Facilities:
Continuation of the microbial nutrient augmentation and aeration process to increase oxygen content in the contaminated soil to promote microbial and bacterial activity within the landfarm facilities. This was conducted at the ALT-12 Landfarms. No water was discharged from this facility in 2025.

E. Construct new waterline planned 2025/26.
During the winter of 2020/2021 the current water lines from Dumbell Bay to the Alert water treatment facility froze solid and broke the waterlines in 26 places along the 2km stretch of line. In summer 2025, construction of a new waterline was performed to replace the existing waterline and provide upgraded safeguards to ensure freeze protection going forward. This was constructed adjacent to the existing waterlines (primary and backup lines).

Future works proposed for 2026:

A. Contaminated Sites In-Situ Bioremediation Work:
Continuation of the pilot scale in-situ bioremediation study for petroleum hydrocarbon biodegradation at the following sites:
1) Oxidator Building;

2) Baker's Dozen.
Develop long term monitoring program for PHC contamination in key areas.

B. Rotation of Soils in the Landfarm (ALT-11) Treatment Facilities:
Continuation of the microbial nutrient augmentation and aeration process to increase oxygen content in the contaminated soil to promote microbial and bacterial activity within the landfarm facilities. This will be conducted at the ALT-11 Landfarms.

C. Rotation of Soils in the Landfarm (ALT-12) Treatment Facilities:
Continuation of the microbial nutrient augmentation and aeration process to increase oxygen content in the contaminated soil to promote microbial and bacterial activity within the landfarm facilities. This will be conducted at the ALT-12 Landfarms

D. In-Situ Bio-Containment Pilot Research Study:
As indicated with the INAC Inspectors during the 2018 Inspections, DND is taking a proactive approach, developing novel bio-containment barriers, to treat runoff and subsurface waters generated and passing through the boundaries of Federal Contaminated Sites. This activity will be conducted, and the effectiveness assessed, through a pilot research project with the National Research Council of Canada. The general purpose of these bio-containment barriers is to develop a microbial technology solution for bioremediation of runoff and subsurface waters that pass through and/or are generated from contaminated sites prior to reaching the Arctic Ocean. This work has applicability for the entire Canadian Arctic environment.

E. Environmental Sampling for Per- and polyfluoroalkyl substances (PFAS) Delineation
Further conduct environmental sampling and screening for PFAS as well as to evaluate the potential of biodegradation of PFAS as a remediation approach.

F. Landfill Reclamation Plan
DND is currently developing a Landfill Reclamation plan as part of the Federal Contaminated Sites Action Plan Program since the landfill sites are already registered federal contaminated sites. This plan will consist of a remedial options analysis to define the best remediation plan to address concerns regarding landfill reclamation. Current submission schedule is planned for 2028-2030 due to contracting delays. Once the detailed Plan is completed, the report will be submitted to the Board for review.

Appendix H Proposed/Future Infrastructure Works

Year: 2025
Reference: 8AC-ALT1929 Schedule B item l.

Future works proposed for 2026:

A. Sewage Discharge Flow Monitoring:
Installation of a flow monitor on the discharge point of ALT-2 was installed in the summer of 2023 as was previously planned for 2020 but delayed due to COVID and engineering issues with current piping system and the gage. Unfortunately, the flow meter installed did not function as intended; this issue was still unresolved by contractor in 2025. DND Real Properties has escalated priorities to the contractors to install a new flow monitor system immediately in 2026. DND Environment will inspect for a new system in Summer 2026 at the Station.

B. Construct new waterline planned 2026/2027 (continuation from 2025).
During the winter of 2020/2021 the current water lines from Dumbell Bay to the Alert water treatment facility froze solid and broke the waterlines in 26 places along the 2km stretch of line. In summer 2025, construction of a new waterline was performed to replace the existing waterline and provide upgraded safeguards to ensure freeze protection going forward. This was constructed adjacent to the existing waterlines (primary and backup lines). The construction of the new line did not reach full completion before winter's arrival in 2025, so the project is continuing into the 2026/27.

Appendix I Follow up requirements to the NWB and CIRNAC

Year: 2025

Appendix I

In response to the Technical Review of the 2024 Annual Report for 8AC-ALT1929, DND 8 Wing Environment requested the NWB for extensions in regards to the responses to CIRNAC on 24 November 2025; the extension to 31 March 2026 at the submission of the annual report was granted by the NWB on 24 November 2025.

Please find Attached as Appendix I are the formal responses and items as per the DND Letter: "Re: DND RESPONSE TO NWB TECHNICAL REVIEW OF 2024 ANNUAL REPORT: WATER LICENCE NO. 8 AC-ALT1929" dated 24 November 2025.

1) **CIRNAC R-01 (dated 18 August and 08 October, 2025):** Clarification on Sewage Sludge management statement has been added by DND to the annual report and will be included in future annual reports for clarity to the CIRNAC reviewers.

2) **CIRNAC R-03 (dated July 2, 2025):** CIRNAC questions regarding exceedances of lead (Pb) identified within meltwater and the surrounding environment at Canadian Forces Station (CFS) Alert, the 2023–2025 analytical datasets and the conclusions presented in the RMC Green Team report (March 2025). RMC, on behalf of the Licensee has provided a response to the questions, the letter is shared as:

"8AC-ALT1929-Appendix-I-RMC Green Team Response to CIRNAC Review_R03_Feb 2026.pdf"

3) **CIRNAC R-03, R-04, R-05 (dated 18 August and 08 October 2025)** and Water Management Plan in accordance with Part D, Item 11 of the Licence:

   Due to unexpected staffing changes within DND 8 Wing Environment, there was confusion about the Water Management Plan requirements in Spring of 2025, and efforts to locate historical and past water management plans and internal records for CFS Alert were not successful; therefore, I am pleased to report that DND 8 Wing Environment will correct this requirement and has immediately commissioned the University of Toronto (Ontario, Canada) as of May 2025, on a 5-year research program (2025-2030), to study and create an appropriate Water Management Plan for CFS Alert. The University of Toronto is retained to perform a comprehensive hydrological study and water balance for the drinking water supply lake (Upper Dumbell Lake) and its entire melt water watershed at CFS Alert, using an Unmanned Aerial Vehicle (UAV) with LiDAR mapping and a Remote Operated Vessel (ROV) with Sonar for bathymetry scanning.

Progress completed in Aug/Sep 2025: The UAV was successfully deployed to scan and identify the watershed of the Upper Dumbell Lake at CFS Alert; the collected geophysical data is currently undergoing analyses at the University of Toronto. Due to the unexpected/unusual cold summer conditions, the Upper Dumbell Lake at CFS Alert was directly observed to be ice-free for 3-days in Sept 2025 before quick refreezing of thick lake ice, the ROV Sonar effort of the project is rescheduled for Aug-Sep 2026.

Over the next 5 years of effort, DND and the University of Toronto will perform site data collection and site mapping, include snowpack studies, and third-party LiDAR/GIS interpolations, over the next 5 years to capture seasonal and annual changes and to refine accuracies of the Water Management Plan. The University of Toronto also installed freshet flow monitoring stations around Upper Dumbell Lake's melt streams and a weather station near the Upper Dumbell Lake to collect meteorological and evaporation data for the Water Management Plan.

Regarding the Water Management Plan, and as new commissioned research take time with data collection and analyses requiring significant effort, and underway right now, the DND 8 Wing Environment would like to request an extension from the Nunavut Water Board for the Water Management Plan (preliminary) to be submitted at the Annual Report deadline of March 31, 2025.

DND has attached Annual Report **"Field and Modelling Investigations for Alert – Hydrological Research and Drinking Water Supply Analysis for 2025-26"** which is the initial form of the **Water Management Plan**, underdevelopment by the University of Toronto. This Hydrological Study forms the bases of the Water Management Plan, which aims to be completed within 5 years, and then revised annually as more modern data is collected using novel technologies and sciences in the Canadian High Arctic, as no historical data is available.

This Hydrological Study toward a Water Management Plan is attached as: "**8AC-ALT1929-Appendix-I-UofT-Hydrological Study Yr1 towards Water Management Plan.pdf**"

An excerpt from this Study as an update to the NWB:

*"**Recommended <u>Additional</u> Inputs for Update to Nunavut Water Board***

Professor Carl Mitchell (University of Toronto) was engaged in 2025 to begin a multi-year hydrological study for Upper Dumbell Lake, which constitutes CFS Alert's source of freshwater, as well as the surrounding watershed. First-year deliverables on this partnership include a completed fine-resolution digital elevation model of the watershed surrounding Upper Dumbell Lake (figure 12), hydrological infrastructure deployments in the lake's watershed (e.g., micrometeorological station), and a preliminary, but comprehensive examination of a water

budget for Upper Dumbell Lake (figure 13) that can be used to inform adaptive additions to the CFS Alert Water Management Plan. An expected deliverable, a full bathymetric map for Upper Dumbell Lake, has been delayed to summer 2026 due to unexpectedly cold conditions in summer 2025, leading to only 5 days of open water in late August 2025 and freeze over of the lake before we were able to begin the remote operated vehicle, sonar-equipped survey of the lake.
Based on current withdrawal rates by CFS Alert, watershed inflow estimates, and intake depth, there is no evidence of hydrological risk. Water withdrawals from Upper Dumbell Lake are small relative to the lake's storage capacity and annual inflow from snowmelt runoff. Net winter water drawdown calculated for Upper Dumbell Lake (~2 cm) is minor compared to the water intake depth (~6 m below lake surface) and therefore current management does not present a risk to the reliability of the water supply under current operations. Even in unusually low-snowpack years (10–15 mm snow water equivalent), expected watershed runoff volumes to Upper Dumbell Lake substantially exceed annual withdrawals by CFS Alert. Any potential risk to intake operation would require unrealistically low snowpack conditions to be sustained over decades, and therefore hydrological risk is very low. Monitoring of annual snowpack and lake level, as well as completion of efforts begun to obtain accurate data about lake and watershed characteristics is recommended to enable long-term, accurate and adaptive management capabilities.

Estimated seasonal lake-level variation associated with water withdrawals at Upper Dumbell Lake is on the order of only a few centimetres (typically 2 cm), based on annual withdrawal volumes (~40,000 m^3) and the lake's surface area (~1.2 km^2). This magnitude of change is negligible relative to lake depth, shoreline slope and typical natural interannual variability in High Arctic lakes. No meaningful exposure of littoral habitat, alteration of overwintering depth or change in fish habitat is thus anticipated. Similarly, withdrawals represent a very small fraction of annual snowmelt inflow and therefore are not expected to measurably affect downstream flow to Lower Dumbell Lake.

These findings are preliminary and will be updated following completion of a modern bathymetric survey, spring snow characterization and spring runoff measurements scheduled for 2026. Lake level, snowpack and streamflow monitoring will continue for at least 3-4 additional years to assess interannual variability and climate-related trends.

A conceptual figure to demonstrate the primary drivers of seasonal hydrological variability is provided as figure 14. Note that this figure is not to scale."

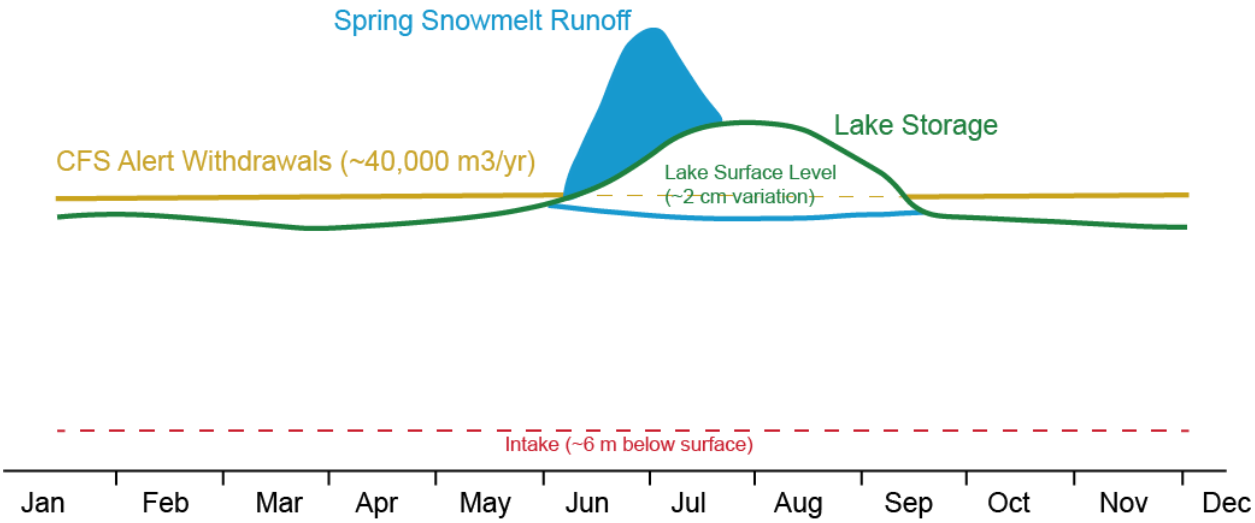

Figure 14: Conceptual rendering of major water inputs, withdrawals and variation of lake level in relation to intake depth. Diagram is not to scale. "

2025 Annual Report compiled by:

TAM, ANDREW 832

Digitally signed by TAM, ANDREW 832
Date: 2026.03.23 17:19:45 -04'00'

Andrew Tam, PhD.
8 Wing Environment Officer
8 Wing/CFB Trenton
Department of National Defence