

August 06, 2025

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Gosse Developments
Goose Pond Properties
1429C Topsail Rd
Paradise, NL
A1L 1P9

Attention: Daniel Gosse

**Re: Comparison of Springtime and Summertime Samples to the Canadian Water Quality Guidelines
Whitbourne, NL**

GEMTEC Consulting Engineers and Scientists (GEMTEC) performed a Cottage Carrying Capacity Assessment (report dated August 04, 2023) at the request of Gosse Development and collected summertime and springtime water quality data on chlorophyll-a, total phosphorous and Secchi disc depth.

Following the regulators' request to present sample data and determine the current water quality condition of water bodies on September 19th, 2023, GEMTEC identified sampling locations and dispatched a team to collect summertime samples from Junction Pond, Bethune's Pond, Second Pond, and Hooper's Pond on September 29th, 2023. The findings of the summertime samples analyses were presented in a memorandum dated November 7th, 2023.

The Water Resources Management Division of the Newfoundland and Labrador Department of Environment and Climate Change requested (December 07th, 2023 e-mail from Robert Richard Harvey, Ph.D., P.Eng.) a comparison of these water quality results to the Canadian Water Quality Guidelines for: (1) recreation and (2) Freshwater Aquatic Life. Subsequently, the summertime samples test results were compared to the Canadian Water Quality Guidelines for both recreational activities and freshwater aquatic life. This comparison was provided in a letter dated May 15th, 2024.

Additional testing was requested by the regulator for Wells Gully and Blockline Gully on July 12, 2024 (sampling locations shown in Figure 1). Summertime samples were taken on September 30th, 2024 and subsequently forwarded to AGAT Laboratories for testing of Total Phosphorus and Chlorophyll a concentrations (work order 24K203131).

Springtime samples from Wells Gully and Blockline Gully were taken on June 7th, 2025 and sent the samples to AGAT Laboratories for analysis (work order 25K307528). This letter presents the comparison of the springtime and summertime water quality analyses to the Canadian Water

Quality Guidelines for recreational activities and freshwater aquatic life. Table 1 outlines the chronological sequence of sampling events, report submissions, and correspondence.

Table 1 Chronological Sequence of Sampling Events and Correspondence

Date	Action
August 4, 2023	GEMTEC issued the Cottage Carrying Capacity Assessment report.
September 19, 2023	Regulator requested presentation of sample data and current water quality conditions.
September 29, 2023	Summertime samples collected from Junction Pond, Bethune's Pond, Second Pond, and Hooper's Pond.
November 7, 2023	Results of summertime sample analysis submitted in a memorandum.
December 7, 2023	Regulator requested comparison to Canadian Water Quality Guidelines (email from Dr. Harvey).
May 15, 2024	Letter submitted with comparison to water quality guidelines for recreation and aquatic
July 12, 2024	Additional water sampling requested for Wells Gully and Blockline Gully.
September 30, 2024	Summertime samples collected from Wells Gully and Blockline Gully.
June 7, 2025	Springtime samples collected and analyzed from Wells Gully and Blockline Gully.
Present Report	Providing results of summertime and springtime sample analysis with a comparison to water quality guidelines for recreation and aquatic

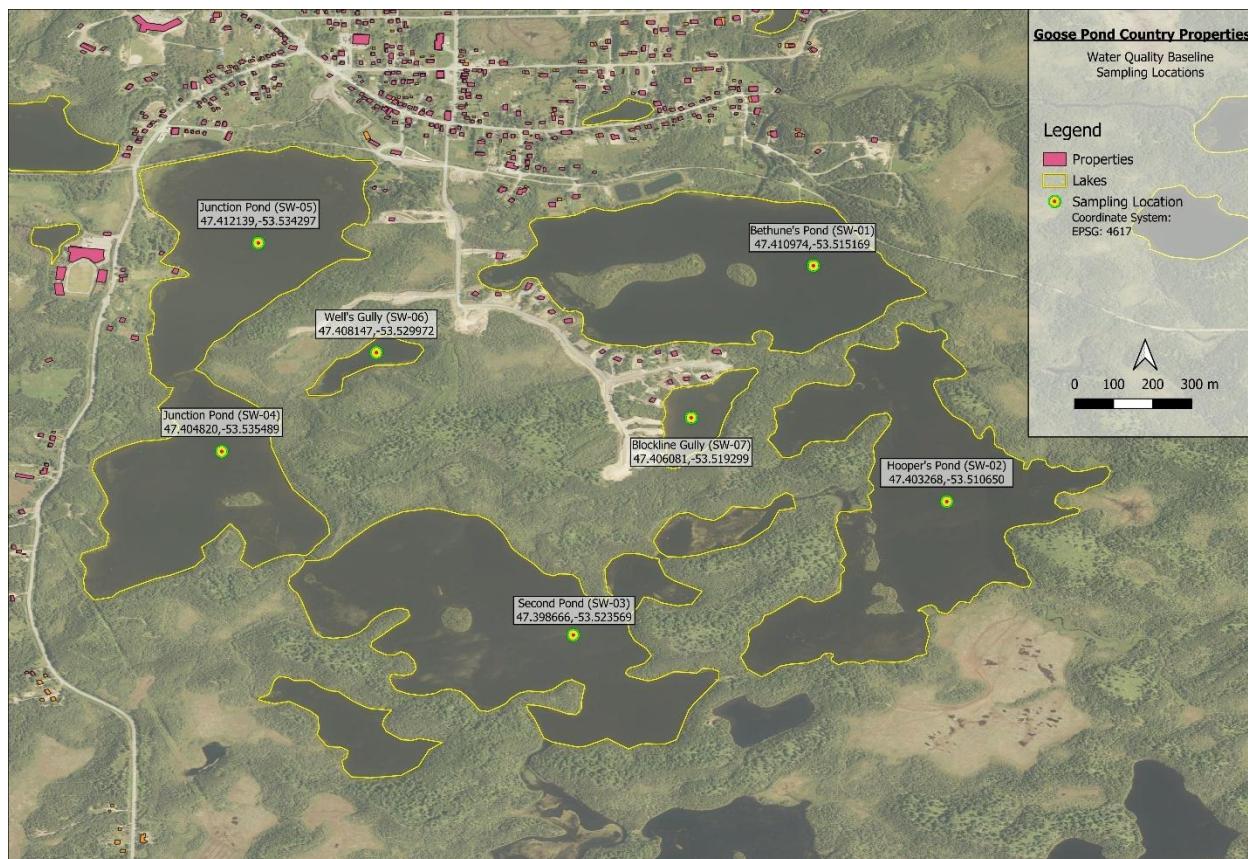


Figure 1 Sampling Locations

Tables 2 and 3 present a summary of the springtime and summertime test results. Detailed laboratory analysis reports are appended to this letter.

Table 2 Summertime Water Quality Test Results

Parameter	Junction Pond	Bethune's Pond	Hoopers Pond	Second Pond	Wells Gully	Blockline Gully
Chlorophyll <i>a</i> Concentration (µg/l)	5.90	2.40	2.60	4.60	3.20	1.40
Secci Disk Depth (m)	2.10	2.25	1.60 (bottom)	1.80	1.40 (bottom)	2.50 (bottom)
Total Phosphorus Concentration (µg/l)	< 6	< 6	< 6	< 6	13	< 6

Table 3 Springtime Water Quality Test Results

Parameter	Junction Pond	Bethune's Pond	Hoopers Pond	Second Pond	Wells Gully	Blockline Gully
Chlorophyll <i>a</i> Concentration (µg/l)	2.00	2.30	1.70	1.80	1.20	0.80
Secci Disk Depth (m)	2.05	2.25	1.60 (bottom)	1.80	1.60 (bottom)	2.70 (bottom)
Total Phosphorus Concentration (µg/l)	8	12	10	11	15	10

A review of Canadian Water Quality Guidelines identified the following sources and limits for Chlorophyll-a, Secci disc depth and total phosphorous (Table 4, full references are appended to this letter).

Table 4 Canadian Water Quality Guidelines

Parameter	Limit	Reference
Chlorophyll-a	5.00 µg/L	Table 2.9 Water Resources Division (1994, after Dillon 1974)
Chlorophyll-a	7.00 µg/L	Recommendations 10.2.4 Water Resources Division (1994)
Chlorophyll-a	33.0 µg/L	Health Canada (2022)
Secci Disk Depth	2.00 m	Table 2.9 Water Resources Division (1994, after Dillon 1974)
Secci Disk Depth	2.00 m	Recommendations 10.2.4 Water Resources Division (1994)
Secci Disk Depth	1.20 m	Health Canada (2012)
Total Phosphorus	10.0 µg/L	Table 2.10 Water Resources Division (1994, after Dillon 1974)
Total Phosphorus	10.0 µg/L	Recommendations 10.2.4 Water Resources Division (1994)
Total Phosphorus	35.0 µg/L	CCME (2004)

Although the total phosphorous concentration in Bethune's Pond, Second Pond, and Wells Gully were marginally higher than the 10 µg/L limit presented in the recommendation section (10.2.4) of the Cottage Development Planning in Newfoundland document (Water Resources Division 1994, after Dillon 1974), all total phosphorus concentration test results are well below the more recent 35.0 µg/L limit presented in the Canadian Council of Ministers of the Environment (CCME, 2004). It should be noted chlorophyll *a* concentration and Secci disk depth results for Wells Gully were lower than the limits for Canadian water quality guideline.

Although the chlorophyll a concentration measured in Junction Pond marginally exceeds the maximum permissible average summertime chlorophyll a concentration of 5.00 µg/L presented in Table 2.9 of the Cottage Development Planning in Newfoundland document (Water Resources Division (1994, after Dillon 1974), all water quality test results (including Junction Pond) are below the limits presented in the recommendation section (10.2.4) of this same document and the far more recent 33.0 µg/L limit presented in the Health Canada Guidelines for Canadian Recreational Water Quality (2022).

Although the Secchi disk depth reading in Second Pond is marginally less than the 2.00 m limit presented in the Recommendation section of the Cottage Development Planning in Newfoundland document (Water Resources Division 1994, after Dillon 1974), all Secchi disk depth readings (including Second Pond) exceed the 1.20 m minimum depth presented in the more recent Health Canada Guidelines for Canadian Recreational Water Quality (2012). It should be noted the weather condition during Secchi disk depth measurement was cloudy with drizzle.

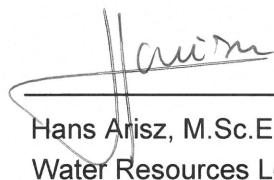
The above results indicate the Canadian Water Quality Guidelines for Recreation are met (Health Canada 2022 and Health Canada 2012), and generally "Body contact and recreation is allowed". The results also indicate the Canadian Water Quality Guidelines for Freshwater Aquatic Life are met (CCME 2004), and "Preservation of cold water fisheries is not a criteria" (Table 2.9 Water Resources Division, 1994, after Dillon 1974), while all lakes are "suitable for ... propagation of cold water fisheries such as trout" (Table 2.10 Water Resources Division 1994, after Dillon 1974).

I trust the above satisfies your current needs and remain available to discuss.

Yours truly,



Nima Agh, M.Ap.Sc., M.Eng., EIT
Water Resources



Hans Arisz

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Water Resources Lead

Enclosures

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References:

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