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Application for Water Licence Amendment

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Month/Day/Year

P.O. BOX 119
GJOA HAVEN, NUNAVUT
XOB 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT IMALIRIYIN KATIMAYIT
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

DOCUMENT MANAGEMENT

Original Document Date: April 2010

DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 7	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)		
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		



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APPLICATION FOR WATER LICENCE AMENDMENT

The applicant is referred to the NWB's Guide 7: Licensee Requirements Following the Issuance of a Water Licence for more information about this application form.

EXISTING LICENCE NO: ____3AM-GRA1015____

1. LICENSEE CONTACT INFORMATION

Is the licensee the same as that referred to on the existing licence?

☒ Yes ☐ No

If No, a licence assignment must be completed and approved by the NWB. **An amendment will only be issued in the name of the current licensee in the absence of assignment of the licence.**

If the licensee is the same, but the name of the licensee has changed, attach a certificate of name change.

Name: _____

Address: _____

Phone: _____

Fax: _____

e-mail: _____

2. LICENSEE REPRESENTATIVE CONTACT INFORMATION – If different from Block 1.

For purposes of this amendment only:

Name: Stantec Architecture Ltd – Arlen Foster, EIT

Address: 4910 53 Street, PO Box 1777
Yellowknife, NT
X1A 2P4

Phone: (867) 920-2882

Fax: (867) 920-4319

e-mail: arlen.foster@stantec.com

(See authorization letter.)

3. NAME OF PROJECT

Has the name of the project changed?

☐ Yes ☒ No

If Yes, indicate the name of the project including the name of the location: _____

4. LOCATION OF UNDERTAKING

Does the proposed amendment change the location of the amended undertaking?

☒ Yes ☐ No

Provide the project extents and camp locations. Identify proposed changes.

Project Extents

See Attached Drawings and Maps

NW: Latitude: (° ' " N)

Longitude: (° ' " W)

NE: Latitude: (° ' " N)

Longitude: (° ' " W)

SE: Latitude: (° ' " N)

Longitude: (° ' " W)

SW: Latitude: (° ' " N)

Longitude: (° ' " W)

Camp Location(s)

No Camp

Latitude: (° ' " N)

Longitude: (° ' " W)

5. MAP

Does the proposed amendment change the locations of any of the main components of the undertaking?

☒ Yes ☐ No

Attach a topographical map, indicating the main components of the undertaking. Identify proposed changes.

NTS Map Sheet No.: 55K16

Map Name: _____

Map Scale: 1:250,000 & 1:50,000

6. NATURE OF INTEREST IN THE LAND

Does the proposed amendment change the nature of the interest in the land?

☐ Yes ☒ No

If Yes, indicate changes. _____

Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

Sub-surface

☐ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

Surface

☐ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Qikiqtani Inuit Association (QIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Commissioner's Land Use Authorization
Date (expected date) of issuance: _____ Date of expiry: _____

☒ Other Municipality of Rankin Inlet – it is not anticipated that a land use permit will be required; project will adhere to all Municipal bylaws

Date (expected date) of issuance: _____ Date of expiry: _____

Is the name of the entity(s) holding authorizations the same as that considered in the existing water licence?

☒ Yes ☐ No

If No, a licence assignment must be completed and approved by the NWB.

Name of entity(s) holding authorizations:

Government of Nunavut - CGS

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

Indicate the land use planning area in which the existing project is located.

- | | |
|---------------------------------------|--|
| ☐ North Baffin | ☒ Keewatin |
| ☐ South Baffin | ☐ Sanikiluaq |
| ☐ Akunnig | ☐ West Kitikmeot |

Does the proposed amendment change the land use planning area?

- ☐ Yes ☒ No

If yes, indicate the land use planning area in which the amended undertaking is located.

- | | |
|---------------------------------------|---|
| ☐ North Baffin | ☐ Keewatin |
| ☐ South Baffin | ☐ Sanikiluaq |
| ☐ Akunnig | ☐ West Kitikmeot |

Was a land use plan conformity determination required from NPC prior to the issuance of the existing water licence?

- ☐ Yes ☐ No ☒ Unknown

If Yes, indicate date issued and attach copy. _____

Does the proposed amendment change the original NPC conformity determination or the need to obtain one?

- ☐ Yes ☐ No ☒ Unknown

If Yes, indicate date issued (or expected) and attach a copy. _____

If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

NPC to contact and discuss with NWB directly.

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Was a screening determination required from NIRB prior to the issuance of the existing water licence?

- ☐ Yes ☐ No ☒ Unknown

If Yes, indicate date issued and attach copy. _____

Does the proposed amendment change the original NIRB screening determination or the need to obtain one?

- ☐ Yes ☐ No ☒ Unknown

If Yes, indicate date issued (or expected) and attach a copy. _____

If No, provide written confirmation from NIRB confirming that a screening determination is not required.

NIWB to contact and discuss with NWB directly.

9. DESCRIPTION OF UNDERTAKING

Does the proposed amendment change the description of the undertaking?

☒ Yes ☐ No

List and attach plans and drawings or project proposal. Identify proposed changes.

See attached plans and drawings detailing the proposed construction and seasonal operation of a overland pipeline to replenish Nipissar Lake.

10. OPTIONS

Does the proposed amendment change any of the alternative methods and locations that were considered to carry out the project?

☐ Yes ☒ No

Provide a brief explanation of the alternative methods or locations that were considered to carry out the project. Identify proposed changes.

See attached report "*Design of Pipeline System to Augment Natural Replenishment of Nipissar Lake*".

11. CLASSIFICATION OF PRIMARY UNDERTAKING

Indicate the primary classification of undertaking for the existing licence by checking one of the following boxes:

- | | |
|---|--|
| ☐ Industrial | ☐ Agricultural |
| ☐ Mining and Milling (includes exploration/drilling/exploration camps) | |
| ☐ Conservation | |
| ☒ Municipal (includes camps/lodges) | ☐ Recreational |
| ☐ Power | ☐ Miscellaneous (describe below): |

Does the proposed amendment change the classification of primary undertaking?

☐ Yes ☒ No

If Yes, indicate the primary undertaking of the amendment: _____

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be updated and submitted with an Application for Amendment. Indicate which SIG(s) are applicable to your application.

- ☐ Hydrostatic Testing
- ☐ Tannery
- ☐ Tourist / Remote Camp
- ☐ Landfarm & On-Site Storage of Hydrocarbon Contaminated Soil
- ☐ Onshore Oil and Gas Exploration Drilling
- ☐ Mineral Exploration / Remote Camp
- ☐ Advanced Exploration
- ☐ Mine Development
- ☒ Municipal
- ☐ General Water Works
- ☐ Power

12. WATER USE

Indicate, using the boxes below, the types of water use(s) approved in the existing licence.

- | | |
|--|---|
| ☒ To obtain water for camp/ municipal purposes | ☐ To divert a watercourse |
| ☐ To obtain water for industrial purposes | ☐ To modify the bed or bank of a watercourse |
| ☐ To cross a watercourse | ☐ Flood control |
| ☐ To alter the flow of, or store water | |
| ☐ Other: _____ | |

Does the proposed amendment change the type(s) of water use(s)?

☒ Yes ☐ No

If Yes, indicate using the boxes below, the proposed change(s) to the type(s) of water use(s) noting any water use(s) that are to be added, continued, or removed.

- | | |
|--|---|
| ☐ To obtain water for camp/ municipal purposes | ☐ To divert a watercourse |
| ☐ To obtain water for industrial purposes | ☐ To modify the bed or bank of a watercourse |
| ☐ To cross a watercourse | ☐ Flood control |
| ☐ To alter the flow of, or store water | |
| ☒ Other: <u>Pump water from Lower Landing Lake watercourse to replenish Nipissar Lake. See drawings / plan for detailed information proposed.</u> | |

13. QUANTITY OF WATER INVOLVED

Does the proposed amendment change the source of water?

☒ Yes ☐ No

Indicate the water source(s). Identify proposed changes.:

Current water source is Nipissar Lake only. The amendment is proposed to allow withdrawal of raw water from Lower Landing Lake river shown in attached drawings / plans.

(show location(s) on map)

Does the proposed amendment change the quality of the water source and/or its available capacity?

☐ Yes ☒ No

Describe the quality of the water source(s) and the available capacity(s). Identify any changes: No changes anticipated as water is only removed in summer months from the river for a limited period of time.

Does the proposed amendment change the overall quantity of water to be used?

☐ Yes ☒ No

Provide the overall estimated quantity to be used. Identify proposed changes: Total water use is currently licensed at 850,000 cu.m. / annum. and will remain the same. Water withdrawal at the river from Lower Landing Lake for summer replenishment of Nipissar Lake is anticipated to be 700 USGPM = 3,815 m³/day.

Does the proposed amendment change the quantity of water to be used from each source?

☒ Yes ☐ No

Provide the estimated quantity(s) of water to be used from each source. Identify proposed changes. :

All water use will continue to be withdrawn from Nipissar Lake. However, during each summer pumping will occur from the river from Lower Landing Lake; anticipated volume to be 272,000 cu.m. / summer in the peak year.

Does the proposed amendment change the quantity of water to be used for each purpose?

☐ Yes ☒ No

Provide the estimated quantities to be used for each purpose (camp, drilling, etc.). Identify proposed changes.:

No changes proposed; all water withdrawn is for municipal purposes.

Does the proposed amendment change the method(s) of extraction?

☒ Yes ☐ No

Describe the method(s) of extraction. Identify proposed changes. : Currently only withdrawal from Nipissar Lake. Change is proposed to withdrawal from Lower Landing Lake river to replenish Nipissar Lake during summer.

Does the proposed amendment change the quantity(s) of water returned to source(s)?

☐ Yes ☒ No

Estimated quantity(s) of water returned to source(s). Identify proposed changes. : _____1808_ m³/day

Does the proposed amendment change the quality(s) of water returned to source(s)?

☐ Yes ☒ No

Describe the quality(s) of water(s) returned to source(s). Identify any changes. : No changes

14. WASTE

Check the appropriate box(s) to indicate the types of waste(s) approved in the existing licence.

- | | |
|--|---|
| ☒ Sewage | ☐ Waste oil |
| ☐ Solid Waste | ☐ Greywater |
| ☐ Hazardous | ☒ Sludges |
| ☐ Bulky Items/Scrap Metal | ☐ Contaminated soil and/or water |
| ☐ Animal Waste | |
| ☐ Other (describe): _____ | |

Does the proposed amendment change the type(s) of waste(s) to be generated or deposited?

☐ Yes ☒ No

If Yes, indicate using the boxes below, the proposed change(s) to the type(s) of waste(s) to be generated and/or deposited noting the addition, removal or continued generation and/or disposal of waste(s).

- | | |
|--|---|
| ☐ Sewage | ☐ Waste oil |
| ☐ Solid Waste | ☐ Greywater |
| ☐ Hazardous | ☐ Sludges |
| ☐ Bulky Items/Scrap Metal | ☐ Contaminated soil and/or water |
| ☐ Animal Waste | |
| ☐ Other (describe): _____ | |

15. QUANTITY AND QUALITY OF WASTE INVOLVED

Does the proposed amendment change the quantity(s) of the types of wastes involved?

☐ Yes ☒ No

Does the proposed amendment change the composition(s) of the types of wastes involved?

☐ Yes ☒ No

Does the proposed amendment change the method(s) of treatment for the types of waste involved?

☐ Yes ☒ No

Does the proposed amendment change the method(s) of disposal for the types of waste involved?

☐ Yes ☒ No

If Yes to any of the above, describe the proposed changes: _____

For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Not Applicable – Amendment only focuses on seasonal replenishment of Nipissar Lake from Lower Landing Lake river. Sewage and solid waste is outside the scope of this amendment.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method

16. OTHER AUTHORIZATIONS

Does the proposed amendment change the need for other authorizations in addition to the sub-surface and surface land use authorizations provided in Block 6?

☐ Yes ☐ No ☒ Unknown

If Yes, indicate any additional authorizations required, which authorizations are no longer required, and which authorizations continue to be required.

For each provide the following:

Authorization: TBD - May require Hamlet Land Use agreement – CGS in discussions with Hamlet

Administering Agency: _____

Project Activity: _____

Date (expected date) of issuance: _____ Date of expiry: _____

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES

Does the proposed amendment change the predicted environmental impacts of the undertaking or the mitigation measures?

☐ Yes ☒ No

Describe direct, indirect, and cumulative impacts related to water and waste. Identify any changes.

No significant changes to water use; see attached report for additional information & completed study.

18. WATER RIGHTS OF EXISTING AND OTHER WATER USERS

Was compensation paid and/or an agreement(s) for compensation been entered into with any existing or other users of water during consideration of the existing licence?

☐ Yes ☒ No

If Yes, provide the names, addresses and the nature of water use by those persons or properties.

Does the proposed amendment adversely affect any known persons or property including those that hold licences for water use in precedence to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature?

☐ Yes ☒ No

If Yes, provide the names, addresses and the nature of water use of those persons or properties.

Advise the Board if compensation has been paid and/or an agreement(s) for compensation has been reached with any existing or other water users with respect to the proposed amendment.

19. INUIT WATER RIGHTS

Was compensation paid/ or an agreement(s) for compensation been entered into with any Designated Inuit Organization (DIO) during consideration of the existing licence?

☐ Yes ☒ No

If Yes, which DIO(s) _____

Does the proposed amendment substantially affect the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL)?

☐ Yes ☒ No

If Yes, advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more DIO(s) with respect to the proposed amendment.

20. CONSULTATION - Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

Consultation limited to discussions with CGS and Hamlet Representatives to determine pipeline route.

21. SECURITY INFORMATION

No Applicable

Does the proposed amendment change the financial security assessment?

☐ Yes ☐ No

Does the proposed amendment change the estimate of the total financial security for final reclamation?

☐ Yes ☐ No

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken. Identify any changes in the financial security assessment resulting from the proposed amendment.

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002.

22. FINANCIAL INFORMATION

Not Applicable

Is the statement of financial security the same as that considered in the existing water licence?

☐ Yes ☐ No

Provide an updated statement of financial security.

If the applicant is a business entity please answer the questions below:

Is the list of the officers of the company the same as those considered in the existing water licence?

☐ Yes ☐ No

Provide a list of the officers of the company.

Is the Certificate of Incorporation or evidence of registration of the company name the same?

☐ Yes ☐ No

Attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

23. STUDIES UNDERTAKEN TO DATE

List and attach updated studies, reports, research etc.

Design of Pipeline System to Augment Natural Replenishment of Nipissar Lake, FSC Architects & Engineers, December 15, 2010.

Provide a compliance assessment and status report including a response to any inspector's reports. The licensee must contact the NWB for licence specific direction in completing the assessment and report.

If in non-compliance, a licence may not be issued until compliance is achieved. If in non-compliance, attach plans/reports for consideration. Application will not be processed if significant issues of non-compliance exist.

24. PROPOSED TIME SCHEDULE

Does the proposed amendment change the time schedule considered in the existing licence for any phase of development?

☒ Yes ☐ No

Indicate the start and completion dates for each applicable phase of development (construction, operation, closure, and post closure). Identify proposed changes.

Construction

Proposed Start Date: Current Proposed Completion Date: June 2012
(month/year) (month/year)

Operation

Proposed Start Date: Continual (seasonal) Proposed Completion Date: Continual (Seasonal)
(month/year) (month/year)

Closure

Proposed Start Date: NA Proposed Completion Date: NA
(month/year) (month/year)

Post - Closure

Proposed Start Date: NA Proposed Completion Date: NA
(month/year) (month/year)

For each applicable phase of development indicate which season(s) activities occur.

Construction

☒ Winter ☐ Spring ☐ Summer ☒ Fall ☐ All season

Operation

☐ Winter ☐ Spring ☒ Summer ☐ Fall ☐ All season

Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season ☒ Not Applicable

Post - Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season ☒ Not Applicable

25. PROPOSED TERM OF LICENCE

On what date does the existing licence expire? ____ May 31, 2015 ____

Is the Licensee applying for a combined renewal and amendment of the existing licence?

☐ Yes ☒ No

If Yes, indicate the proposed term of the renewal (maximum of 25 years): _____

Requested date of renewal issuance: _____ Requested Expiry Date: _____
(month/year) (month/year)

(The requested date of renewal issuance must be at least three (3) months from the date of application for a type B water licence and at least one (1) year from the date of application for a type A water licence, to allow for processing of the water licence application. These timeframes are approximate and do not account for the time to complete any pre-licensing land use planning or development impact requirements, time for the applicant to prepare and submit a water licence application in accordance with any project specific guidelines issued by the NWB, or the time for the applicant to respond to requests for additional information. See the NWB's *Guide 5: Processing Water Licence Applications* for more information)

26. ANNUAL REPORTING

Will the proposed amendment change the content of annual reports or the annual report template?

☐ Yes ☒ No

If Yes, provide details regarding the content of annual reports and a proposed outline or template of the annual report.

27. CHECKLIST

The following must be included with the application for Amendment for the water licensing process to begin.

Completed Application for Water Licence Amendment form.

☒ Yes ☐ No If no, date expected _____

Information addressing Supplement Information Guideline (SIG), where applicable (see Block 11)

☒ Yes ☐ No If no, date expected _____

Compliance Assessment / Status Report (see Block 23).

☐ Yes ☒ No If no, date expected ___Unknown_____

Indication of Renewal Requirement (see Block 26)

☐ Yes ☒ No If no, date expected: Renewal required prior to May 2015 expiration.

English Summary of Amendment Application.

☒ Yes ☐ No If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Amendment Application.

☒ Yes ☐ No If no, date expected _____

Application fee of \$30.00 CDN (Payee Receiver General for Canada).

☐ Yes ☒ No If no, date expected: Not Applicable.

Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

☐ Yes ☒ No If no, date expected: Not Applicable

28. SIGNATURE

Arlen Foster

Civil / Enviro EIT



August 14,
2012

Name (Print)

Title (Print)

Signature

Date

Environment
CanadaEnvironnement
Canada

Canada



National Climate Data and Information Archive

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Climate Data Online

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AveragesCanadian Daily
Climate Data (CDCD)

Historical Radar

Contacts

Frequently Asked

Notices:

A new set of [IDF curves](#) was produced on February 09, 2012 and posted on March 09, 2012. Please read the [Whats_New_EC_IDF.pdf](#) file for a list of all of the changes.

OTTAWA MACDONALD-CARTIER INT'L A, HAMILTON A, DEER LAKE A, GANDER INT'L A, ST.JOHN'S A, SASKATOON DIEFENBAKER INT'L A, LONDON INT'L A, SAULT STE. MARIE A, EDMONTON INT'L A, YARMOUTH A, THUNDER BAY A, CHURCHILL A and SMITHERS A weather reporting stations have switched over to new NAV CANADA sensors and reporting tools. Due to some unanticipated data processing issues related to the new data flow, the display of daily data from these stations is not available on our website at present. However, hourly data is now being displayed for the new stations: [OTTAWA INT'L](#), [HAMILTON](#), [DEER LAKE](#), [GANDER INT'L](#), [ST. JOHN'S INT'L](#), [SASKATOON DIEFENBAKER INT'L](#), [LONDON](#), [SAULT STE MARIE](#), [EDMONTON](#), [YARMOUTH](#), [THUNDER BAY](#), [CHURCHILL](#) and [SMITHERS](#).

For more information, please [click here and expand the message](#). Thank you for your patience while we work to fix these current issues.

The [Notice Inventory](#) contains a record of all past and current Notices.

Questions
Links
Water Data
Weather Winners

Canadian Climate Normals 1971-2000

+ The minimum number of years used to calculate these Normals is indicated by a [code](#) for each element. A "+" beside an extreme date indicates that this date is the first occurrence of the extreme value. Values and dates in bold indicate all-time extremes for the location.

+ **NOTE!!** Data used in the calculation of these Normals may be subject to further quality assurance checks. This may result in minor changes to some values presented here.

[RANKIN INLET A](#)
NUNAVUT

Proactive Disclosure

[Latitude:](#) 62°49'00.000" N
[Climate ID:](#) 2303401

[Longitude:](#) 92°07'00.000" W
[WMO ID:](#) 71083

[Elevation:](#) 32.30 m
[TC ID:](#) YRT

Normals from to

[January-June](#) [January-December+Year](#) [July-December](#)

Temperature:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Daily Average (°C)	-31.9	-30.1	-25.2	-16.3	-5.9	4.2	10.4	9.5	3.4	-5.3	-17.8	-26.7	-11	D
Standard Deviation	2.8	3.2	2.8	2.6	2.1	1.9	1.7	1.1	1.5	1.9	3.3	3.5	1.3	D
Daily Maximum (°C)	-28.3	-26.2	-20.9	-11.7	-2.4	7.9	14.9	13	5.8	-2.4	-13.9	-22.9	-7.3	D
Daily Minimum (°C)	-35.5	-33.9	-29.5	-20.8	-9.2	0.4	5.9	5.9	0.9	-8.2	-21.6	-30.4	-14.7	D
Extreme Maximum (°C)	23.4	-4.4	1.3	3.4	14.1	26.1	28.9	30.5	20.6	9.3	0.9	-2.4		
Date (yyyy/dd)	1997/05	1998/18	1999/26	1984/17	1984/29	1993/29	1996/31	1991/10	1996/18	1988/08	1983/04	1999/01		
Extreme Minimum (°C)	-46.1	-49.8	-43.4	-35.7	-23.8	-9.4	-1.9	-1.4	-9	-27.4	-36.5	-43.6		
Date (yyyy/dd)	1982/07	1990/15	1984/11	1984/06	1991/02	1992/02	1992/04	1986/31	1989/30	1986/31	1982/24	1996/30		
Precipitation:														
Rainfall (mm)	0	0.1	0	1	7.4	25	39.5	57.3	39.2	11.9	0.1	0	181.5	D
Snowfall (cm)	6.7	9.3	12.9	13.6	11.5	4.9	0	0.3	4.6	23.1	20.9	11.9	119.7	D
Precipitation (mm)	6.6	8.9	12.6	14.3	18.4	29.8	39.5	57.6	43.8	34.6	19.8	11.3	297.1	D

Average Snow Depth (cm)	27	30	36	38	20	1	0	0	0	3	14	23	16	D
Median Snow Depth (cm)	27	30	36	38	20	0	0	0	0	3	14	23	16	D
Snow Depth at Month-end (cm)	28	34	38	33	5	0	0	0	0	8	20	25	16	C
Extreme Daily Rainfall (mm)	0	1	0	6.8	30.8	45.8	41.4	41.2	45	24.1	0.6	0.2		
Date (yyyy / dd)	1981/15	1998/17	1981/19	2000/24	1998/15	1999 / 23	1990/28	1984/14	1991/15	1982/29	1988/24	1991/30		
Extreme Daily Snowfall (cm)	6.4	17.4	12.2	14	13.6	21.5	2.4	2.6	10.4	18.2	23.6	8.6		
Date (yyyy / dd)	1992/03	1996/23	1991/24	1994/13	2001/07	1990/06	2001/03	1985/28	1982/11	1997/13	1985 / 06	1999/01		
Extreme Daily Precipitation (mm)	6.4	17.4	11.6	14	31.2	45.8	41.4	41.2	45	33	23.2	8.6		
Date (yyyy / dd)	1992/03	1996/23	1991/24	1994/13	1999/06	1999 / 23	1990/28	1984/14	1991/15	1997/13	1985/06	1999/01		
Extreme Snow Depth (cm)	50	64	73	86	68	20	1	0	4	22	57	59		
Date (yyyy / dd)	1991/17	1996/28	1996/22	1991 / 22	1993/02	1987/02	2001/03	1981/01	1985/25	1985/31	1985/30	1985/11		
Days with Maximum Temperature:														
<= 0 °C	31	28.3	30.9	29	19.9	1.4	0	0	1.6	20.1	29.8	31	222.8	D
> 0 °C	0.05	0	0.06	1	11.2	28.6	31	31	28.4	11	0.25	0	142.5	D
> 10 °C	0.05	0	0	0	0.10	10	25.8	22.2	4	0	0	0	62.1	D
> 20 °C	0.05	0	0	0	0	0.65	5.4	2.2	0.10	0	0	0	8.3	D
> 30 °C	0	0	0	0	0	0	0	0.05	0	0	0	0	0.05	D
> 35 °C	0	0	0	0	0	0	0	0	0	0	0	0	0	D
Days with Minimum Temperature:														
> 0 °C	0	0	0	0	0.50	17	30.5	30.7	18.8	2.6	0	0	100.1	D
<= 2 °C	31	28.3	31	30	31	21.8	2.3	1.5	18.2	30.4	30	31	286.4	D
<= 0 °C	31	28.3	31	30	30.5	13.1	0.47	0.26	11.2	28.4	30	31	265.1	D
< -2 °C	31	28.3	31	29.8	27.1	4.7	0	0	5.3	25.5	29.8	31	243.4	D
< -10 °C	31	28.3	30.5	27.1	12.7	0	0	0	0	10.9	26.9	30.8	198.1	D
< -20 °C	30.5	27.2	27.8	17.2	1.7	0	0	0	0	1.3	18.8	27.7	152	D
< -30 °C	26.1	21.6	17.4	3	0	0	0	0	0	0	3.8	19.6	91.4	D
Days with Rainfall:														
>= 0.2 mm	0	0.05	0	0.70	2.4	6.2	10.2	13.2	10.2	3.8	0.25	0.05	46.9	D

>= 5 mm	0	0	0	0.05	0.40	1.4	2	3.3	2.6	0.85	0	0	10.4	D
>= 10 mm	0	0	0	0	0.15	0.50	1.1	1.6	1.3	0.30	0	0	4.9	D
>= 25 mm	0	0	0	0	0.05	0.15	0.35	0.40	0.10	0	0	0	1.1	D
Days With Snowfall:														
>= 0.2 cm	6.9	7.2	9.1	8	7.1	1.9	0.05	0.20	3.9	12.1	12	9.5	77.8	D
>= 5 cm	0.16	0.20	0.50	0.60	0.65	0.25	0	0	0.20	1.1	0.85	0.40	4.9	D
>= 10 cm	0	0.10	0.10	0.15	0.10	0.20	0	0	0.05	0.20	0.15	0	1.1	D
>= 25 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	D
Days with Precipitation:														
>= 0.2 mm	6.8	7.1	9	8.4	8.8	7.4	10.2	13.2	12.8	14.3	11.9	9.5	119.1	D
>= 5 mm	0.16	0.20	0.50	0.70	1.1	1.6	2	3.3	2.8	2	0.80	0.40	15.3	D
>= 10 mm	0	0.10	0.10	0.15	0.20	0.65	1.1	1.6	1.4	0.50	0.10	0	5.8	D
>= 25 mm	0	0	0	0	0.10	0.15	0.35	0.40	0.10	0.10	0	0	1.2	D
Days with Snow Depth:														
>= 1 cm	31	28.3	31	30	29.8	7.8	0	0	0.45	18.1	30	31	237.3	D
>= 5 cm	31	28.3	31	29.8	24.7	1.9	0	0	0	8.2	27.9	31	213.7	D
>= 10 cm	29.4	28.1	31	29.2	21.7	0.60	0	0	0	3.7	19.5	29.5	192.6	D
>= 20 cm	23.7	22.8	28.7	26	14.3	0.10	0	0	0	0.05	4.8	16.1	136.4	D
Wind:														
Speed (km / h)	23.9	23.9	23.4	22.4	22.1	19.8	19.2	21.1	24.2	26.5	25.3	24	23	D
Most Frequent Direction	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	D
Maximum Hourly Speed (km / h)	102	93	93	93	102	74	74	93	83	93	93	100		
Date (yyyy / dd)	1999/06	2000/05	1986/06	1999/25	2002/21	1999/23	1990/29	1984/03	1992/26	1997/14	1982/25	1985/27		
Direction of Maximum Hourly Speed	NW	NW	NW	NW	NW	E	NW	NW	E	W	NW	NW	NW	
Maximum Gust Speed (km / h)	132	113	111	111	117	111	106	124	109	137	124	124		
Date (yyyy / dd)	1999/06	1999/02	1986/05	1999/25	1986/29	1999/23	1990/29	1984/03	1989/20	1997/14	1985/06	1985/27		
Direction of Maximum Gust	NW	NE	NW	NW	NW	E	NW	NW	W	W	N	NW	W	
Days with Winds >= 52 km / h	5.5	5.4	4.7	2.6	2.8	1.2	1.6	2.8	3.7	5.4	5	5.2	45.6	D
Days with Winds >= 63 km / h	2.3	1.8	1.7	0.7	0.5	0.5	0.5	1.2	1.5	2	1.9	1.8	16.2	D
Degree Days:														

Above 24 °C	0	0	0	0	0	0	0	0	0	0	0	0	0	D
Above 18 °C	0	0	0	0	0	0	1.2	0.2	0	0	0	0	1.4	D
Above 15 °C	0	0	0	0	0	0.3	7.9	2.5	0	0	0	0	10.7	D
Above 10 °C	0	0	0	0	0	4.2	52.7	30.1	1.6	0	0	0	88.7	D
Above 5 °C	0	0	0	0	0.1	34.5	172.7	139	21	0.1	0	0	367.4	D
Above 0 °C	0	0	0	0	5	131.9	325.4	292	111.5	8.4	0	0	874.2	D
Below 0 °C	989.5	849.5	784	488.7	186.3	7	0	0	9.5	171.1	532.7	829.5	4847.7	D
Below 5 °C	1144.5	990.7	939	638.7	336.4	59.5	2.4	2	69	317.8	682.7	984.5	6167.1	D
Below 10 °C	1299.5	1132	1094	788.7	491.3	179.3	37.4	48.1	199.6	472.7	832.7	1139.5	7714.6	D
Below 15 °C	1454.5	1273.2	1249	938.7	646.3	325.4	147.6	175.4	348	627.7	982.7	1294.5	9462.9	D
Below 18 °C	1547.5	1358	1342	1028.7	739.3	415.1	233.9	266.1	438	720.7	1072.7	1387.5	10549.4	D
Humidex:														
Extreme Humidex	-3	-4.4	1.1	2.5	13.4	26.3	32.2	31.8	21.8	8.5	1.4	-2.5		
Date (yyyy / dd)	2000/29	1998/18	1999/26	1995/29	1996/29	1983/28	1996 / 31	1991/10	1996/18	1988/08	2001/03	1999/01		
Days with Humidex >= 30	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0.2	D
Days with Humidex >= 35	0	0	0	0	0	0	0	0	0	0	0	0	0	D
Days with Humidex >= 40	0	0	0	0	0	0	0	0	0	0	0	0	0	D
Wind Chill:														
Extreme Wind Chill	-66.8	-70.5	-64.4	-53.4	-35.9	-17.6	-5.6	-8.8	-18.1	-42.7	-55.3	-62.4		
Date (yyyy / dd)	1993/28	1990 / 15	1984/11	1985/10	1983/06	1982/02	1984/02	1985/28	1989/29	1986/25	1989/23	1993/24		
Days with Wind Chill < - 20	31	28.3	30.2	25.7	10.1	0	0	0	0	8.8	25.9	30.7	190.6	D
Days with Wind Chill < - 30	30.7	27.2	27.4	16.9	2	0	0	0	0	1.7	18.8	27.7	152.3	D
Days with Wind Chill < - 40	27.2	23.8	20.2	5.7	0	0	0	0	0	0.3	8.6	21.2	106.8	D
Humidity:														
Average Vapour Pressure (kPa)	0	0.1	0.1	0.2	0.4	0.7	1	1	0.7	0.4	0.2	0.1	0.4	D

Average Relative Humidity - 0600LST (%)	66.4	66.7	69.3	78	88.2	86.3	85.5	90.2	90.1	87.7	77.6	70	79.7	D
Average Relative Humidity - 1500LST (%)	66	67.1	71.3	78.9	82.7	72.5	65.8	70.6	77.6	84.3	77.9	69.9	73.7	D
Pressure:														
Average Station Pressure (kPa)	100.8	101.1	101.4	101.5	101.3	101	100.7	100.6	100.7	100.8	100.9	100.8	101	D
Average Sea Level Pressure (kPa)	101.3	101.5	101.8	101.9	101.7	101.4	101.1	101	101.1	101.2	101.3	101.2	101.4	D
Visibility (hours with):														
< 1 km	91.9	90.7	75.3	32.8	29.7	23.3	27.1	22.8	20.8	32.2	55.9	80.8	583.2	D
1 to 9 km	160.6	143.6	155.4	109.4	89	44.8	32	57.8	69.9	130	156	180.3	1328.8	D
> 9 km	491.4	443.8	513.3	577.8	625.3	651.9	684.9	663.4	629.4	581.8	508.1	482.9	6854	D
Cloud Amount (hours with):														
0 to 2 tenths	341.8	297.1	308.6	270.2	123.9	127.2	131	107.4	74.9	113.2	228.9	308.6	2432.8	D
3 to 7 tenths	177.9	159.4	163.4	125.6	118.6	174.2	230.5	185.6	110.6	98.9	128	163.4	1836	D
8 to 10 tenths	224.4	221.5	272.1	324.2	501.5	418.6	382.5	451	534.5	531.9	363.1	272	4497.3	D

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