

Water Licence Renewal Application

Licence number: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

Submission: February 03, 2020

Prepared by:

Shah Alam, P. Eng. E.P.
*Municipal Planning Engineer,
Government of Nunavut
Community and Government Services
Cambridge Bay, Nu*



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Building Nunavut Together
Nunavut liuqatigiingniq
Bâtir le Nunavut ensemble

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Department of Community and Government Services
Nunalingni Kavamatkunnilu Pivikhaqautikkut
Ministère des Services Communautaires et gouvernementaux

February 03, 2020

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1L0
Attention: Richard Dwyer, Manager of Licensing, Manager of Licensing

RE: 3BM-CAM 1520 –Cambridge Bay Water License Renewal Application

Dear Richard

Please find the enclosed Water Licence Renewal Application for the Hamlet of Cambridge Bay. We are pleased to inform the current status of a numbers of documents regarding the Licence renewal below:

- Annual Reports are all up-to-date including the Annual Report 2019 in progress.
- Water treatment plant, CHARS loop with high-pressure line and lateral connections activities completed.
- The old truckfill, chlorination system and overhead storage tank in town has been decommissioned
- Old IPH and related structures at the Water lake shore are decommissioned
- Operation and Maintenance manuals for sewage and solid waste facilities are active
- Quality Assurance/Quality Control plan for sewage and waste are active as approved.

We also realize the requirement for updating of some information regarding facilities operation and plan as requested by the Board in existing Licence. The Licensee is ensuring the Board of following plans and documents available while the license renewal process:

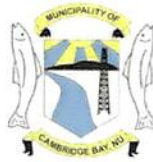
- The Annual Report 2019 will be available during the application review process.
- Spill Contingency Plan is approved and active. A supplement is included with this renewal application.

We are requesting the Nunavut Water Board for consideration to increase the annual water intake quantity to **94,000 m³** and renewal of the license for another **10** years. The Application fee of \$30.00 is paid to the Board (Receiver General for Canada) as the requirement. CGS is submitting this Licence Renewal Application on behalf of the Hamlet of Cambridge Bay.

Best Regards,

Shah Alam, P. Eng. E.P. CAPM
Municipal Planning Engineer,
Government of Nunavut, Community and Government Services
Kitikmeot Region, Cambridge Bay, Nu
Phone: 867-983-4156, fax: 867-983-4124; salam@gov.nu.ca<mailto:salam@gov.nu.ca>

CC: Marla Limousin, Chief Administrative Officer (CAO), Hamlet of Cambridge Bay, NU
Baba Pedersen, Resource Management /Water Resource Officer, CIRNAC



MUNICIPALITY OF CAMBRIDGE BAY

February 3, 2020

Shah Alam, P. Eng., E.P, CAPM
Municipal Planning Engineer
Community and Government Services
Government of Nunavut
Bag 200
Cambridge Bay, Nunavut X0B 0C0

Re: Authorization to Act on Behalf of the Hamlet

Dear Shah:

I hereby authorize you to act on behalf of the Municipality of Cambridge Bay in regards to our Water License renewal application submission.

Respectfully,

Marla Limousin
Chief Administrative Officer
Municipality of Cambridge Bay

Municipality of Cambridge Bay

11471

VENDOR NO: REC008		NAME: Receiver General for Canada C/O of Nunavut Water Board		CHECK DATE: 2/4/2020
REFERENCE	INVOICE DATE	GROSS AMOUNT	DISCOUNT TAKEN	NET AMOUNT PAID
3BM-CAM 1520	2/3/2020	30.00	0.00	30.00
TOTAL >		30.00	0.00	30.00

THIS CHEQUE CONTAINS A MICROLINE BORDER AND SECURITY FEATURES



Municipality of Cambridge Bay

Box 16
Cambridge Bay, NU X0B 0C0
Ph: (867) 983-4650
Fax: (867) 983-2193

Royal Bank of Canada
4 Kamotik Rd.
Cambridge Bay, NU X0B 0C0

11471

DATE 0 2 0 4 2 0 2 0
M M D D Y Y Y Y

\$ ***30.00

Thirty and 00/100*****

PAY Dollars

TO THE ORDER OF Receiver General for Canada C/O of Nunavut Water Board
P.O Box 119
Gjoa Haven,, NU X0B 1J0

Pam G
M. Lunn

0011471 06527003 100002506

Executive Summary

The Hamlet of Cambridge Bay is responsible to supply of potable water, disposal of sewage and solid waste from the community into the designated facilities. These facilities are currently operating with a Water Licence active until April 09, 2020.

The modified water supply facilities (as referred in the current licence) have been completed and turned to operation since March 31st, 2017 and the new IPH in March 11, 2015. High pressure line has direct feed into CHARS facility, schools, Helen Maksagak centre (GN office) and Health Centre. All other residential and commercial buildings have truck supply from treatment plant. Water volume at the water lake estimated minimum 650,000 m³ (in winter freeze up) to 1,765,000 m³ (summer) which confirms enough quantities from the water source to meet the proposed intake 94,000 annually. A secondary water source also has been identified at the upstream of water lake for any emergency.

The Sewage lagoon and solid waste sites had been improved with lagoon containment berm with solid waste landfill and metal dump facilities. Bulk metals crushed on site and burred in earthen cells, compacted and covered with soil-gravel materials. Waste oil, waste paints, waste fuels and hazardous are secured in specified containers for shipping out. The licensee is managing waste reduction mostly in summer-fall each year on regular basis. Sewage and solid waste effluent are monitoring with natural remediation throughout the facilities and wetland. Annual sampling result shows the remediation in compliance with the licence and guidelines. Both sewage and solid waste facilities are operator attendant and under surveillance camera and records. Separate facilities for contaminated soils and spills remediation by a private organization outside of the sewage lagoon with separate licence.

O&M manuals for sewage lagoon, solid waste and metal dump including spill contingency plan and QA/QC plans remain unchanged as accepted by the Board in the current license. However, O&M manuals for water treatment system and as-built drawings are submitted to the Board. The existing intake pumphouse and in town overhead water storage tank were decommissioned.

The Hamlet of Cambridge Bay with the help of GN had taken certain measures over the years in compliance to the requirements for water licence including operators training, health and safety assurance, waste reduction, facilities and environment securities. The licensee is considering an innovative technique for waste reduction by setting an incinerator (oxidized) onsite of the solid waste which is under budgetary approval. Monthly monitoring of water and sampling program for sewage and waste effluent for summer - fall continued as addressed in the compliance plan.

We confidently determine those enclosed documents and test results of water, sewage and solid waste samples from facilities will be helpful and in compliance with the requirement the Nunavut Water Licence for this northern community.

Hamletkkut Ikaluktuutiaq- Immalikiyiut Titikinningmun Naunaitkutta 3BM 1520
Tukifakutta

Hivulia

Hamletkkut Ikaluktuutiami havvakangmatta immiqhiijungmatta inuit imautainun, hapkunnungalu, anaktautait mikhanun kuvipgailimainmatta nunamun kujaginnaq, immk, anauktautlu mikhanun havvangnatta ublumimun, April 09, 2020-mi Nutkakjutta.

Havvaqtaufaqhimayut immiktautit immiqhiviit (naunaitkutta 3MB-CAM 1520) iniktaqhimangmatta, angmaktaujut MARCH 31, 2017-mi, tamnalu nauniatkutta IPH March 11, 2015-mi. Hakkuriktummik immap ingilgajutta naqqitihimajuq hapkununga CHARS-kkut, Nutakkat Ilihakviit, Helen Maksagak havakvia, Munaqhikakviklu, Tahapkuat umunng attangitut imiktautikkut immiqhijauvaktut immalikiyyitkut iglukpanin. Tahiup ukumaijutta kikitgangammi 650,000 m3. Aujamitauq ukkumaitjutta 1,765, 000 m3, tamna naunairamitku, immak attuktaqhat 94,000 ukumaitjutta ukiok atauhik Ikaluktutiapattuktaqha nammariyat. Tahik nammangitgummi aipingniaktat tahingmiit kugannuakaktuk, immaikat tahik tadja atuktat.

Anaktautip mikhanun nakutkianik havaktauhimajuk, kuvitailingningmun nuna haujahimajuktauq, kuvviklu, havviraliit ikkatuijutlu mikhanun. Angitkijaujutlu havvigaliit miqhipgaihimayait, nunap attanun puqhurit tutkuhiyait, kangalu hiurangmik illiriqhurit. Kinniqtait, mingutitlu, uqhukjuatlu, hivurannaqtutlu pukuqhurit ummiakkut aullautijaunahuaqtut. Hamlet-kkut aujangerangammi uqiangmunlu taima havvrijait. Anaktautip tutkukvia kugluanga nunamin havvaqtauhimajuk mikharutauq ammiqhijaukattaqtaujuq. Uktututingningmun amiqhijutiqharamik ukiuraaluk, titkinningmun mikhangun maliqhurit. anaktauti kuvviatauk, kuvviklu havaktikainnaktut, adjiliurutiqhaqhutiqlu, titikningmunlu amiqhiyut naunaitkutikaktut tutkuqhijajunnik. Nunatauk, ikkaktauhimayutlu allaniktauq havvaktaujut, titkinningmunlu naunaitkutikaramik allanink.

Makpiraat maligaitit hapkununga, hivuranakktunik, kuvipgairumiklunin mikhangun, piaqhajiaqhimajuttauk umunga angiktauhimajut titkinningmun, Katimayit angiqhimajait uma 3BM-CAM 1520 nutangujutta. Makpiraat maligaitlu imallikiyit, anaktautilu mikhangun allat havvariya. Tamna ikaluktuutiap iluanituraluaq immiqhivik imiktautinun unguvaktauhimajuk.

Hamletkkut, Nunavut gavamatkutlu ikkajukatigiqhutik ummunga malitiangnahuriplutiq immap, annaktautiplu mikhangun, Hamletkkut piaqhajiaqtut ikkakutingnun mikhagun, ikualakutingmun mikhipgainiak kuvvingmik, kiinaujalikiyyitkut angiqhimaliktat. Nuttangerangan tatqiqhiut ammiqhinahunrinnaiktut, uktukatakluru immak, nunalu ayanangerangan- aujamunlu, taima titraqhimangman maligaliunmi.

Imma havvatiarapta ihumalutikangiturut, titikaat attajut umunga, tahapkuatlu uktuktauhimajut immait, anaktautiplu nuna, kuugluangatlu, ikkajutiurutirinaikuk, alitiaqhimangmatta tahpkununga maligait Nunavunmi Imallikiyiitkut Titkinningmun angitjutait, Kingitjutaitlunin Ikaluktuutiamun.

Description and explanation:

- O&M for sewage lagoon remains unchanged as submitted Dec 2013 and approved
- O&M for solid waste & metal dump is unchanged as submitted Feb 2014 and approved
- Spill Contingency plan was approved the submission in Nov 2012, and QA/QC plans in Nov 2013 by the Board.
- The licensee has updated the management team and contacts for “Appendix-B of O&M manual” as below:

Name	position	Contact phone and email
Marla Limousin	Chief Administrative Officer (CAO)	867-983-4650; mlimousin@cambridgebay.ca
Jim MacEachern	Assistant Chief Administrative Officer (ACAO)	867-983-4654; jmaceachern@cambridgebay.ca
Wiz Mohammed	Director, Municipal Planning & Projects	867-983-4652; wmohammed@cambridgebay.ca
Albert Okhina	Foreman	867-983-4650

- O&M manuals for WTP and IPH were received from the consultant; however, the license has submitted these manuals to the Board separately as advised and be available during the amendment process for review.

The CAO of the hamlet, Director of Municipal Planning & Projects, Foreman, supervisor and operators will be considered responsible site personnel with different levels of responsibilities.

Landfarm facility:

The current license does not include additional scope of Landfarm for contaminated soil or spill materials treatment; however, the liner cells inside the metal dump prevail the scope only to store those materials inside in secured bags or containers temporarily for final transportation to their specific facility or shipping out when possible. There is a private owner Landfarm outside the sewage lagoon scoped to be used by the community and hamlet with contractual services. The hamlet is therefore, has no plan to build any separate facility or a separate license for the spills and contaminated soil remediation (as clarification requested in the current license).

Engineered drawings and Design:

The licensee has submitted all design documents and engineered drawings (as-built) for Sewage lagoon, Solid waste & Metal dump facilities with the improvement activities completed in 2012. No further changes, amendment or addition to these scopes happened there after. The license has received as-built drawings for modified Water Treatment System (WTP and IPH). These as-built drawings have been submitted to the Board today (a later date of recipient) and will be available to review during the process of the amendment license.

Sludge Management:

Sewage lagoon may require de-sludging in 8-12 years interval if sludge thickness increase over 2-3 feet at the bottom to allow the lagoon capacity 190,000 m³. The lagoon maximum height considered 10 m including the sludge thickness on lagoon bottom. The bathymetry survey has assured lagoon sludge thickness not in critical to de-sludging soon, but some sludge blankets are floating on top and sides has been noticed time to time. The licensee has collected some of these sludge pieces and debris from the sides & shore and placed those sludges on the drying pad for naturally drying by sun. No plan for extensive removal of sludges but regular clean up of debris and floated sludges will be continued as needed during summer-fall as requested by the CIRNAC inspector and in current license. Dried sludge and debris from the dry pad will be used mostly for cover materials mixing with soil-gravel at the landfill.

Abandoned and Restoration Plan:

The old IPH has been demolished and removed old structures from the bank of the water source. With the new IPH operation, the old IPH has been considered abandoned and removed from the infrastructure list, except the buried pipe line and vaults to deliver water to the treatment plant.

In-town overhead storage tank has been decommissioned and demolished including the treatment plant building where only chlorination and truckfill facilities were carried. The lateral pipe line has been disconnected and removed outside the old treatment plant building in town. The as-built drawings for the old water supply facility (decommissioned) has no records with the licensee and not useful since the new modified water supply system has started operation.

High pressure loop line:

CHARS water supply and few buildings including Halen Maksagak centre, Schools, Health centre were connected by 200mm high-pressure buried line and vaults. This addition of structure and pressure increased the efficiency of water supply to certain heights and fire hydrants.

A new buried sub-line is in plan to connect the new NAC campus and daycare facilities to water main line towards the town and CHARS loop connection. Construction and connection of this sub-line is expecting during summer-fall 2020. This addition will not affect the water intake as the volume is considered part of the requested annual quantity.



Application for Water Licence Renewal

Document Date: May 2011

Application Submission Date: 02/03/2020
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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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

APPLICATION FOR WATER LICENCE RENEWAL

Your application may be classified as a **renewal** only if all operations remain the same as previously licensed and only the term of the licence requires change. If your application contemplates:

- a change to the volume of water authorized for use;
- a new activity related to water use or waste disposal;
- a new component related to water use or waste disposal;
- a change in predicted environmental impacts(s); and/or
- a change to any term or condition of the original license

your application is **NOT** classified as a renewal but rather an amendment and will require submission of an Application for Water Licence Amendment. Licensees applying for combined renewal / amendment are also referred to the 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: 3BM-CAM 1520, Type B

1. LICENSEE CONTACT INFORMATION

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

☒ Yes ☐ No

If No, a license assignment must be completed and approved by the NWB. **A renewal 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: Hamlet of Cambridge Bay

Address: P.O Box 16, Cambridge Bay, Nunavut X0B 0C0

Attn. Marla Limousin, Chief Administrative Officer (CAO)

Phone: 867-983-4650

Fax: 867-983-2193

e-mail: mlimousin@cambridgebay.ca

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

Name: Shah Alam, P. Eng. EP., CAPM

Address: Municipal Planning Engineer
Community and Government Services (CGS)
Cambridge Bay, Helen Maksagak Centre, NU X0B 0C0

Phone: 867-983-4156

Fax: 867-983-4123

e-mail: salam@gov.nu.ca

3. NAME OF PROJECT

Is the name of the project the same as that considered in the existing water licence?

☒ Yes ☐ No

Indicate the name of the project including the name of the location: _____

4. LOCATION OF UNDERTAKING

Is the location of the undertaking the same as that considered in the existing water licence?

☒ Yes ☐ No

Project Extents

NW: Latitude: (° ' " N)

Longitude: (° ' " W)

NE: Latitude: (° ' " N)

Longitude: (° ' " W)

SE: Latitude: (° ' " N)

Longitude: (° ' " W)

SW: Latitude: (° ' " N)

Longitude: (° ' " W)

Camp Location(s)

Latitude: (69 ° 07 '01 " N)

Longitude: (105°03' 15" W)

5. MAP

Are the locations of the main components of the undertaking the same as those considered in the existing licence?

☒ Yes ☐ No

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

NTS Map Sheet No.: _____ Map Name: _____ Map Scale: _____

6. NATURE OF INTEREST IN THE LAND

Is the nature of the interest in the land the same as that considered in the existing water licence?

☒ Yes ☐ No

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 Municipal Land

Date (expected date) of issuance: _____ N/A _____ Date of expiry: _____ N/A _____

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:

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

Is the undertaking located in the same land use planning area as that considered in the existing licence?

☒ Yes ☐ No

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

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> North Baffin | <input type="checkbox"/> Keewatin |
| <input type="checkbox"/> South Baffin | <input type="checkbox"/> Sanikiluaq |
| <input type="checkbox"/> Akunnig | <input checked="" type="checkbox"/> West Kitikmeot |

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

☐ Yes ☒ No

If Yes, indicate date issued and attach copy. _____

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

☐ Yes ☒ No

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.

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

If Yes, indicate date issued and attach copy. _____

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

☐ Yes ☒ No

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.

9. DESCRIPTION OF UNDERTAKING

Is the description of the undertaking the same as that considered in the existing water licence?

☒ Yes ☐ No

List and attach plans and drawings or project proposal.

10. OPTIONS

Are the alternative methods and locations that were considered to carry out the project the same as those considered in the existing water licence?

☐ Yes ☒ No

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

11. CLASSIFICATION OF PRIMARY UNDERTAKING

Is the primary undertaking the same as that considered in the existing water licence?

☒ Yes ☐ No

Indicate the primary classification of undertaking by checking one of the following boxes.

- | | |
|---|--|
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Mining and Milling (includes exploration/drilling/exploration camps) | |
| <input type="checkbox"/> Conservation | |
| <input checked="" type="checkbox"/> Municipal (includes camps/lodges) | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Power | <input type="checkbox"/> Miscellaneous (describe below): |
- _____

See Schedule II of the *Northwest Territories Waters Regulations* for Description of Undertakings.

12. WATER USE

Is the type(s) of water use(s) the same as that considered in the existing water licence?

☒ Yes ☐ No

Check the appropriate box(s) to indicate the type(s) of water use(s) being applied for.

- | | |
|--|---|
| <input checked="" type="checkbox"/> To obtain water for municipal purposes | <input type="checkbox"/> To divert a watercourse |
| <input type="checkbox"/> To obtain water for industrial purposes | <input type="checkbox"/> To modify the bed or bank of a watercourse |
| <input type="checkbox"/> To cross a watercourse | <input type="checkbox"/> Flood control |
| <input type="checkbox"/> To alter the flow of, or store water | |
| <input type="checkbox"/> Other: _____ | |

13. QUANTITY OF WATER INVOLVED

Is the source of water the same as that considered in the existing licence?

☒ Yes ☐ No

Name of water source(s): Water Lake
(show location(s) on map)

Is the quality of the water source and its available capacity the same as that considered in the existing licence?

☒ Yes ☐ No

Describe the quality of the water source(s) and the available capacity(s): snow and rain water watershed

Is the overall estimated quantity of water to be used the same as that considered in the existing licence?

☐ Yes ☒ No

Provide the overall estimated quantity of water to be used: 257 m³/day

Are the quantity(s) of water to be used from each source the same as those considered in the existing licence?

☐ Yes ☒ No

Provide the estimated quantity(s) of water to be used from each source: **94,000 m3 annually.**

Are the quantity(s) of water to be used for each purpose the same as those considered in the existing licence?

☒ Yes ☐ No

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

86,000 m3 for drinking water, cleaning, fire protection, laundry, shower and kitchen uses
4,000 m3 for construction activities, swimming pool, dust suppression and vehicles cleaning.
4,000 m3 for proposed arena complex and new NAC campus, Day Care, and new houses

Are the method(s) of extraction the same as those considered in the existing licence? ☒ Yes ☐ No

Describe the method(s) of extraction:

- Raw water collects from Water lake at the designated intake point marked as CAM-1
- Use twin intake pumps operated by 3-phase power line and a back-up generator,
- Heat trace line inside the 150mm insulated HDPE pipe connected to suction pump inside the pipe,
- Intake gratings net at the end of pipe submerged permanently inverted at 4.5 m depth from surface
- Air burst line attach with the water intake pipe for cleaning the clog of intake net.
- Intake water directly deliver to water treatment plant through buried line & reheat stations
- Treated water deliver to household tanks by truck-fill from storage tank at the plant.

Are the quantity(s) of water returned to source(s) the same as those considered in the existing licence?

☒ Yes ☐ No

Estimated quantity(s) of water returned to source(s): water returns into the source resulting from snow melt in connected lakes and keeps continuity of water feed into the Water Lake.

Treated sewage water not exceeding 74,000 m3 annually returns to the ocean from all types of uses including residential, institutional and commercial facilities.

Are the quality(s) of water(s) returned to source(s) the same as those considered in the existing licence?

☒ Yes ☐ No

Describe the quality(s) of water(s) returned to source(s):

- Sewage effluent and solid waste run-off water decanted into wetland during summer which finally discharge into Ocean waterbody after natural treatment.
- Samples from monitoring stations and tests at Taiga Laboratory at Yellowknife (CAEAL approved).

14. WASTE

Are the type(s) of waste(s) to be generated and/ or deposited the same as those considered in the existing licence?

☒ Yes ☐ No

Check the appropriate box(s) to indicate the types of waste(s) generated and deposited.

- | | |
|---|---|
| <input checked="" type="checkbox"/> Sewage | <input checked="" type="checkbox"/> Waste oil |
| <input checked="" type="checkbox"/> Solid Waste | <input type="checkbox"/> Greywater |
| <input checked="" type="checkbox"/> Hazardous | <input checked="" type="checkbox"/> Sludges |

- ☒ Bulky Items/Scrap Metal ☒ Contaminated soil and/or water
☒ Animal Waste
☒ Other (describe): used tires, waste woods, auto batteries, electric waste, plastic, papers etc.

15. QUANTITY AND QUALITY OF WASTE INVOLVED

Are the quantity(s) of the types of wastes involved the same as those considered in the existing licence?

☒ Yes ☐ No

Are the composition(s) of the types of wastes involved the same as those considered in the existing licence?

☒ Yes ☐ No

Are the method(s) of treatment for the types of waste involved the same as those considered in the existing licence?

☒ Yes ☐ No

Are the method(s) of disposal for the types of waste involved the same as those considered in the existing licence?

☒ Yes ☐ No

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

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Sewage	90%-95% water	70,000	Stay inside lagoon almost 9 months frozen until discharge into wetland in summer for final treatment	Pump and screen
Solid waste	Food, paper, can, wood, plastic, cloth etc.	11,800	Compost and push down, compact and cover with waste mix soil granular.	Collect by covered truck from house bins and dump on pile at location.
Hazardous	Battery, paint, switch, antifreeze, bulb etc.	750	Store in wooden box with plastic around until ship out	Ship to south with contractor
Bulky Items	Auto body, snow mobile, metal door, window, electronic etc.	1,850	Pile on cell and smash to smaller pieces before cover with cover materials	Reusable items put in C-cans and send by barge to south
Animal waste	Meat, bone, skin of caribou, muskox,	50	Cover with granular cover materials	Store in cell on site
Waste oil	Engine oil, heating oil	150	Store in container with cover until ship out	Ship in container

16. OTHER AUTHORIZATIONS

In addition to the sub-surface and surface land use authorizations provided in Block 6, are the same authorizations required as considered in the existing licence? N/A

☐ Yes ☐ No

For each provide the following:

Authorization: _____

Administering Agency: _____

Project Activity: _____

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

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES

Are predicted environmental impacts of the undertaking and proposed mitigation measures the same as those considered in the existing water licence?

☒ Yes ☐ No

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

No impact to environment for discharging sewage waste or dumping solid waste at the respective facility. Environment Canada (EC) pointed that effluent standards for sewage treatment should meet parameters set in the guidelines for discharge in the NWT and should met at the final discharge point of Sewage Lagoon (end-of-pipe) and not at the end of wetland. NWB limits the quality of effluent for the lagoon discharge that was consistent to the previous Licence.

Sewage Waste: The gravel berm allows the sewage lagoon holding capacity over 190,000 m3 which is more than one year's sewage generation in the community.

Solid waste and landfill:

The improved facility includes cells for hazardous waste, animal carcass, waste metals, waste oil, batteries, tires, wood wastes and general municipal wastes with perimeter fence. Monitoring station with 4-video surveillance cameras at the entrance, employed operator for dump recording and monitoring the facility.

Heavy metals were segregated, broken into smaller and buried with cover materials and hazardous materials were shipped out and new liner cells constructed for hazardous & spills storage at the old site.

The Licensee is working with GN-CGS to install additional fencing peripheral to metal dump site bringing together with solid waste landfill under one-fenced area for better control, efficient operation and cost effective.

18. WATER RIGHTS OF EXISTING AND OTHER WATER USERS

Are the effects of the undertaking on 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, the same as those considered in the existing water licence?

☐ Yes ☒ No

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licenses for water use in precedent 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.

Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.

19. INUIT WATER RIGHTS

Are the effects of the undertaking on the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL) the same as those considered in the existing water licence?

☒ Yes ☐ No

Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL) and 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 Designated Inuit Organization (DIO).

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.

- with NAC, Day Care, and home owners in new sub-division area for lateral line or truck delivery.
- with CHARS (Canadian High Arctic Research Station), user of 16 m3 per day (5,500m3) from 2019 with high pressure line to regulate water quantity direct feed to house tank from water line vault. CHARS may add additional treatment inside own building for lab uses which will not affect annual quantity intake.
- With Northern store, Coop store, Arctic Lodge, School, Green Row hotels, Day Care, and some private and commercial user in town for possibilities of direct lateral supply to outside vault or into house tank.

21. SECURITY INFORMATION

Is the financial security assessment the same as that considered in the existing water licence? **Not applicable**

☐ Yes ☐ No

Is the estimate of the total financial security for final reclamation the same as that considered in the existing water licence?

☐ 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.

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? Not required

☐ 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.

- No studies or research and no report required related to water & waste, but a plan to study the possibilities of connecting both the Landfill and metal dump under one entry, fenced and security system to minimize facilities operational cost and better control on entry/exit.
- A proposal to GN-CGS for fencing the other side (north and north-west) of the sewage lagoon and separate gate for entry/exit (instead through the landfill) to ease of operation and control.

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

Is the time schedule for all phases of development (construction, operations, closure and post closure) the same as that considered in the existing licence?

☒ Yes ☐ No

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

Construction: buried sub-line to NAC campus and Daycare from the main high-pressure line.

Proposed Start Date: July 2020 Proposed Completion Date: December 2020
(month/year) (month/year)

Operation: truck delivery to expected new houses at north-west of NAC campus by private owner

Proposed Start Date: January 2021 Proposed Completion Date: continue
(month/year) (month/year)

Closure

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

Post - Closure

Proposed Start Date: _____ Proposed Completion Date: _____
(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

Post - Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

25. PROPOSED TERM OF LICENCE

On what date does the existing licence expire? April 09, 2020

Indicate the proposed term of the renewal (maximum of 25 years): Ten (10) years

Requested date of renewal issuance: April 2020 Requested Expiry Date: April 2030
(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

Is the annual report template expected to be the same as that considered in the existing licence?

☒ Yes ☐ No

If not using the NWB's *Standardized Form for Annual Reporting*, 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 renewal for the water licensing process to begin.

Completed Application for Water Licence Renewal form.

☒ Yes ☐ No If no, date expected _____

Updated plans, including designs and reports (see Block 23).

☒ Yes ☐ No If no, date expected _____

Updated security assessment (see Block 21).

☐ Yes ☒ No If no, date expected Not applicable

Updated financial statement (see Block 22).

☐ Yes ☒ No If no, date expected not applicable

Compliance Assessment / Status Report (see Block 23).

☐ Yes ☒ No If no, date expected Not applicable

English Summary of Renewal Application.

☒ Yes ☐ No If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Renewal Application.

☒ Yes ☐ No If no, date expected _____

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

☒ Yes ☐ No If no, date expected _____

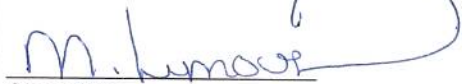
Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

☐ Yes ☒ No If no, date expected Not applicable

28. SIGNATURE

I, Marla Limousin (print name)

certify that the application requires no changes to water use or waste disposal as previously authorized and that the information given on this form is, to the best of my knowledge, correct and complete.



Signature

Feb 3, 2020
Date

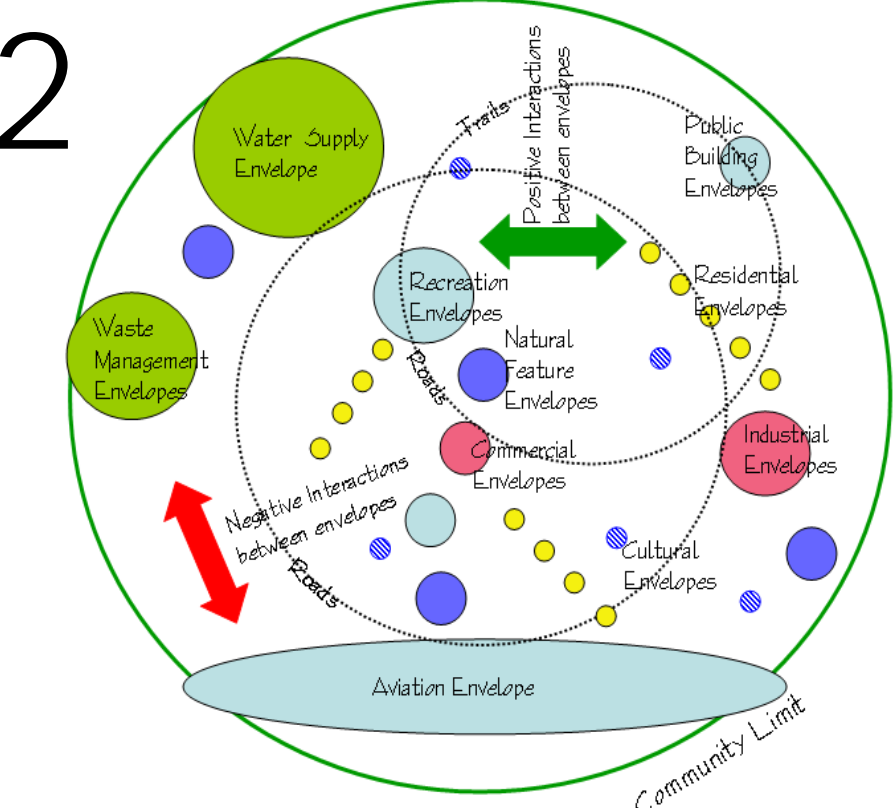
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CAMBRIDGE BAY, NU - WASTE MANAGEMENT IMPROVEMENTS

The Hamlet of Cambridge Bay is a community of 1500 people in the western region of Nunavut Territory of Canada. A decade ago, the community and the regulators had ongoing concerns with the sewage and solid waste management systems in the community. The existing waste management systems were not engineered, and there were a variety of operational issues.



Cambridge Bay is located along the Northwest Passage in the Kitikmeot Region of Nunavut



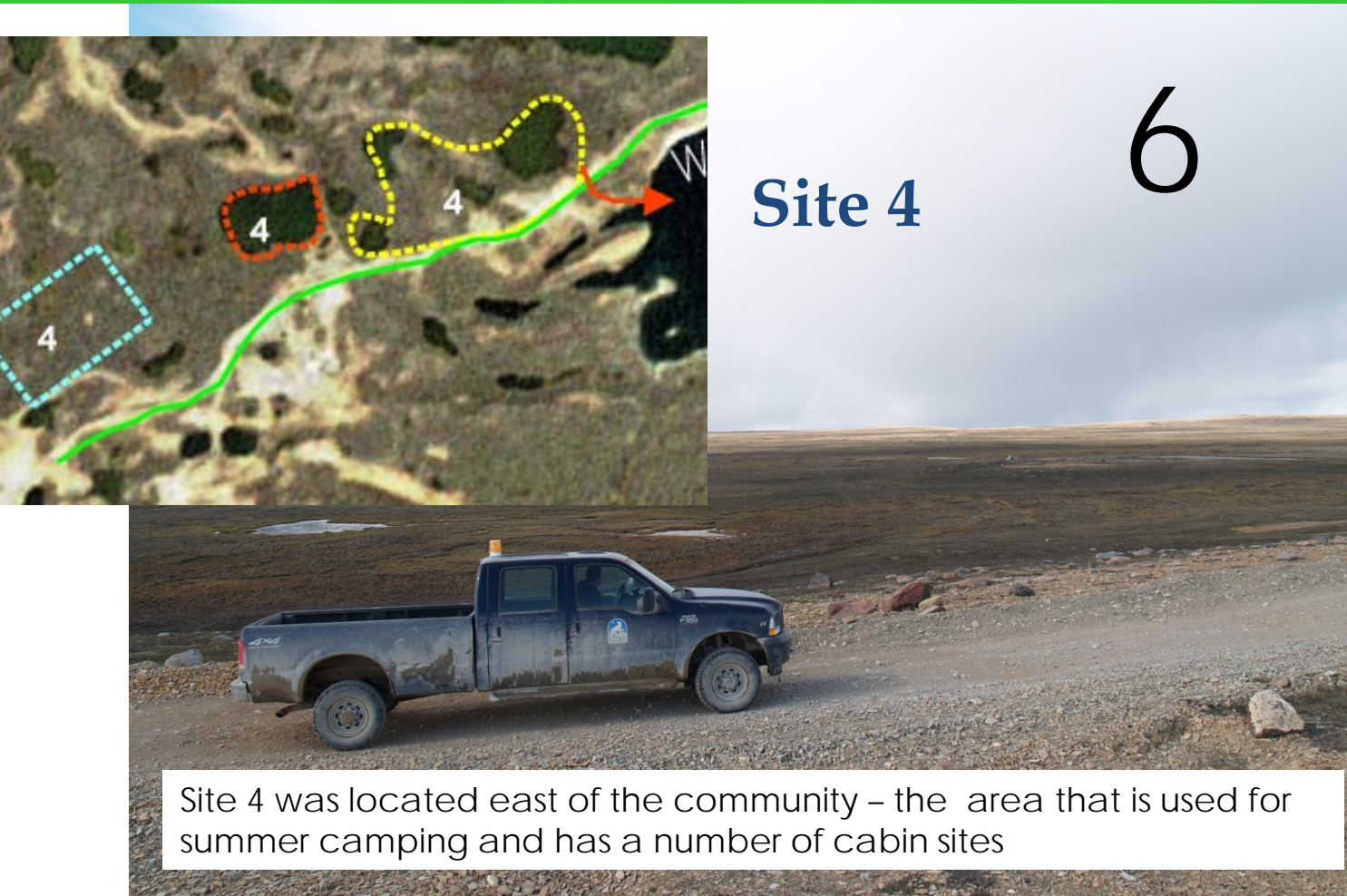
Northern communities have inherent issues between sanitation systems and other community activities such as water supply, aviation, and development



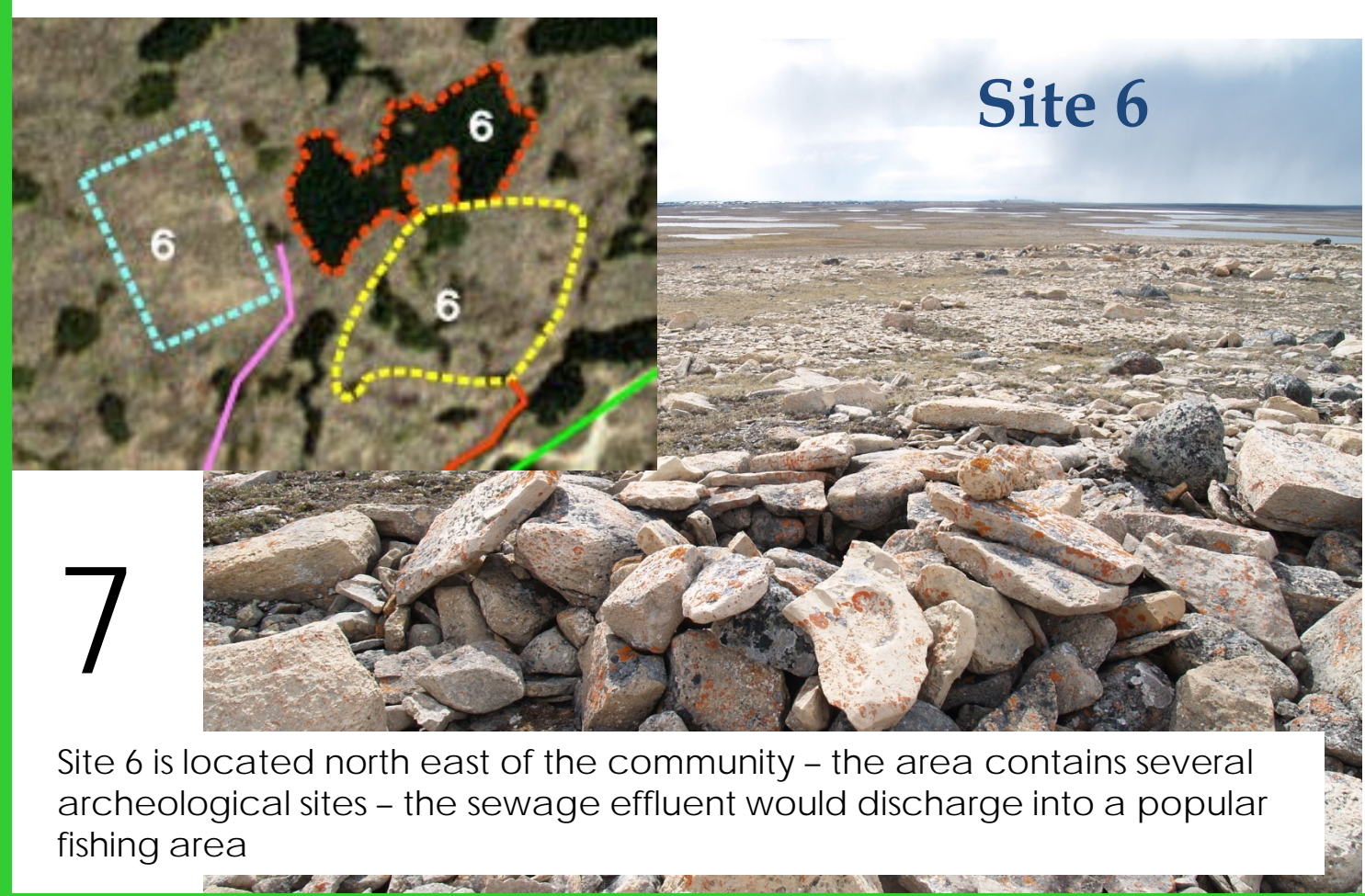
Cambridge Bay has a unique and abundant natural environment in close proximity to the community, along with a interesting history.



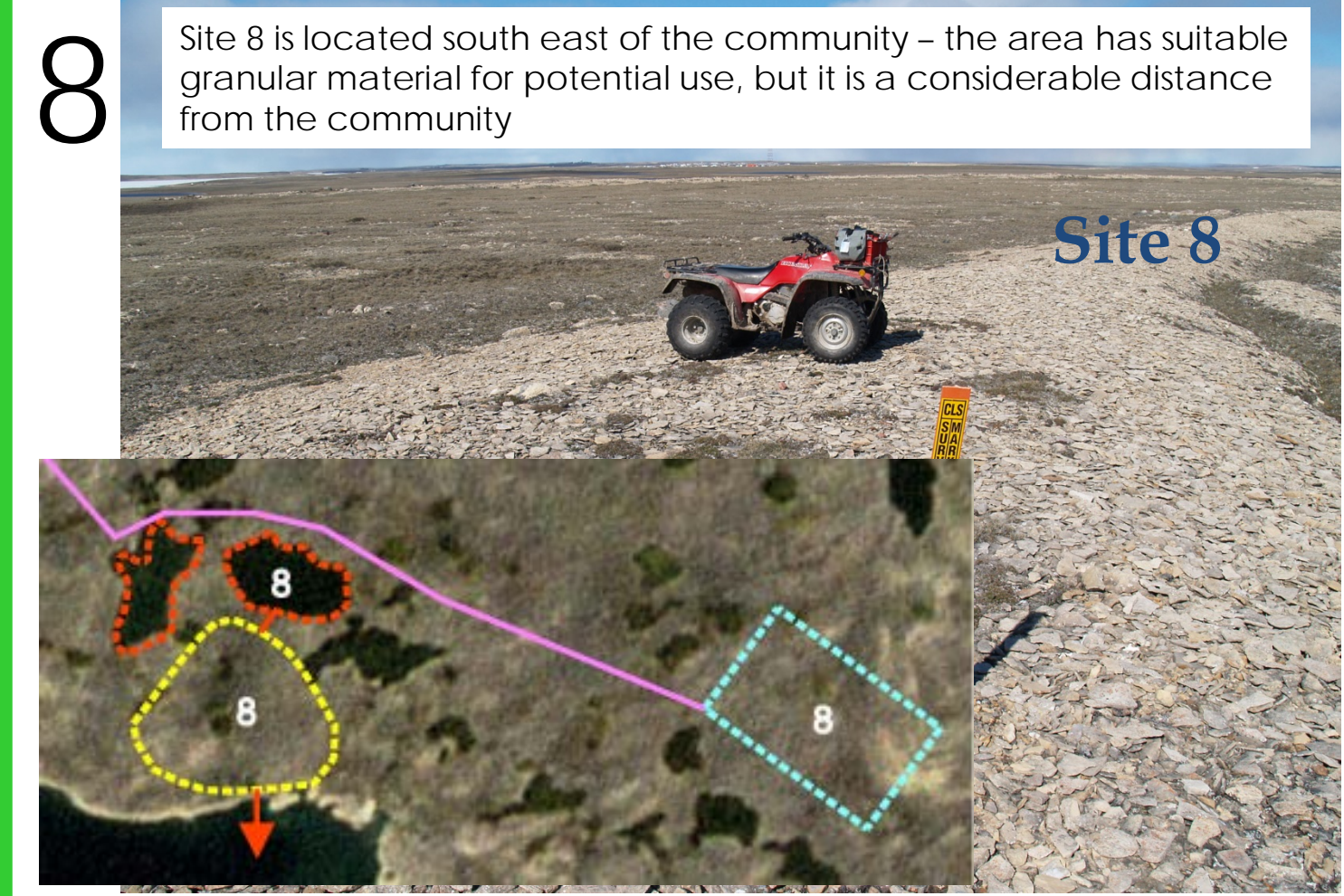
The existing un-engineered sewage lagoon system, was treating the wastewater water to some degree, however, the discharge was not controlled



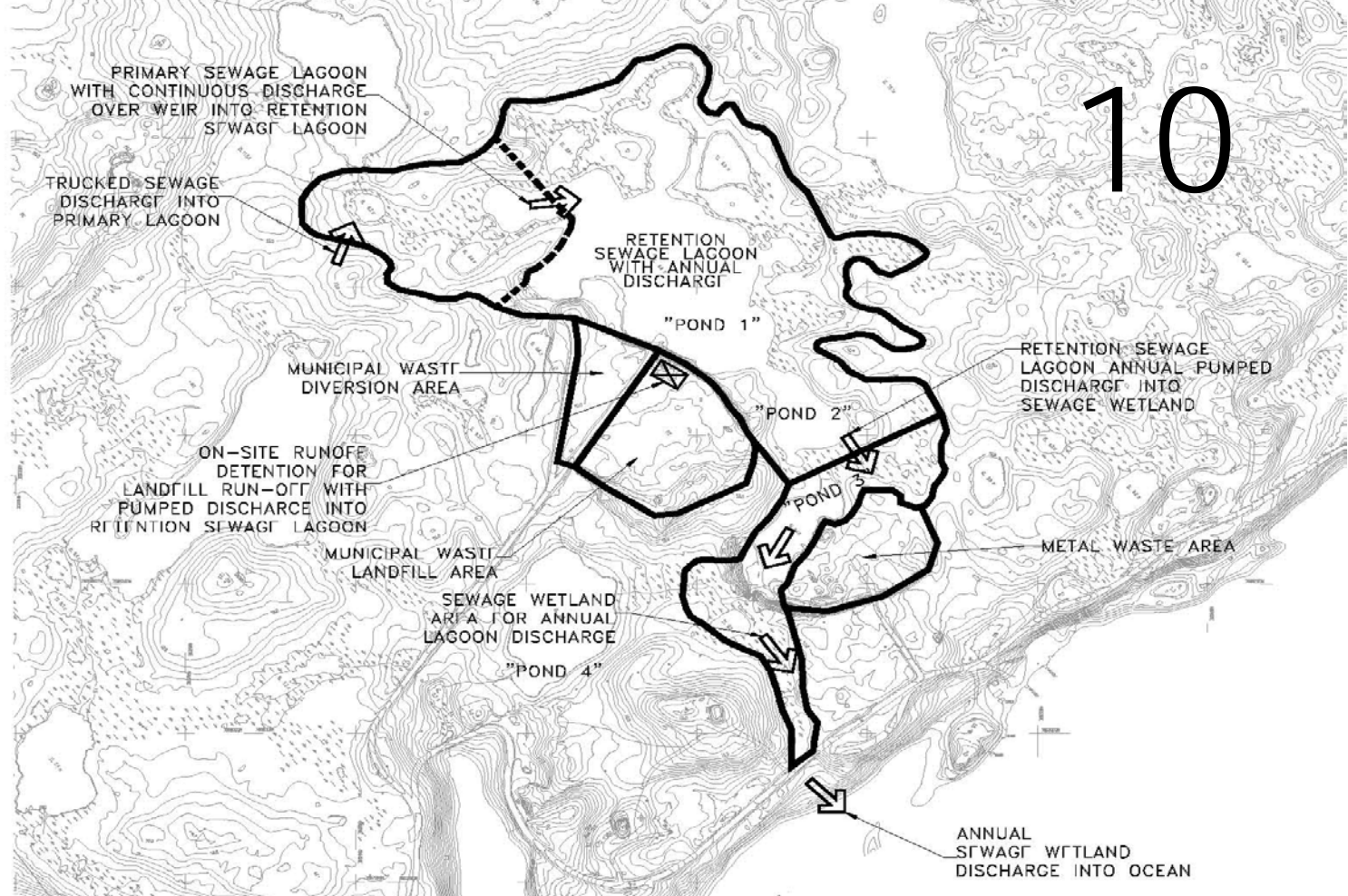
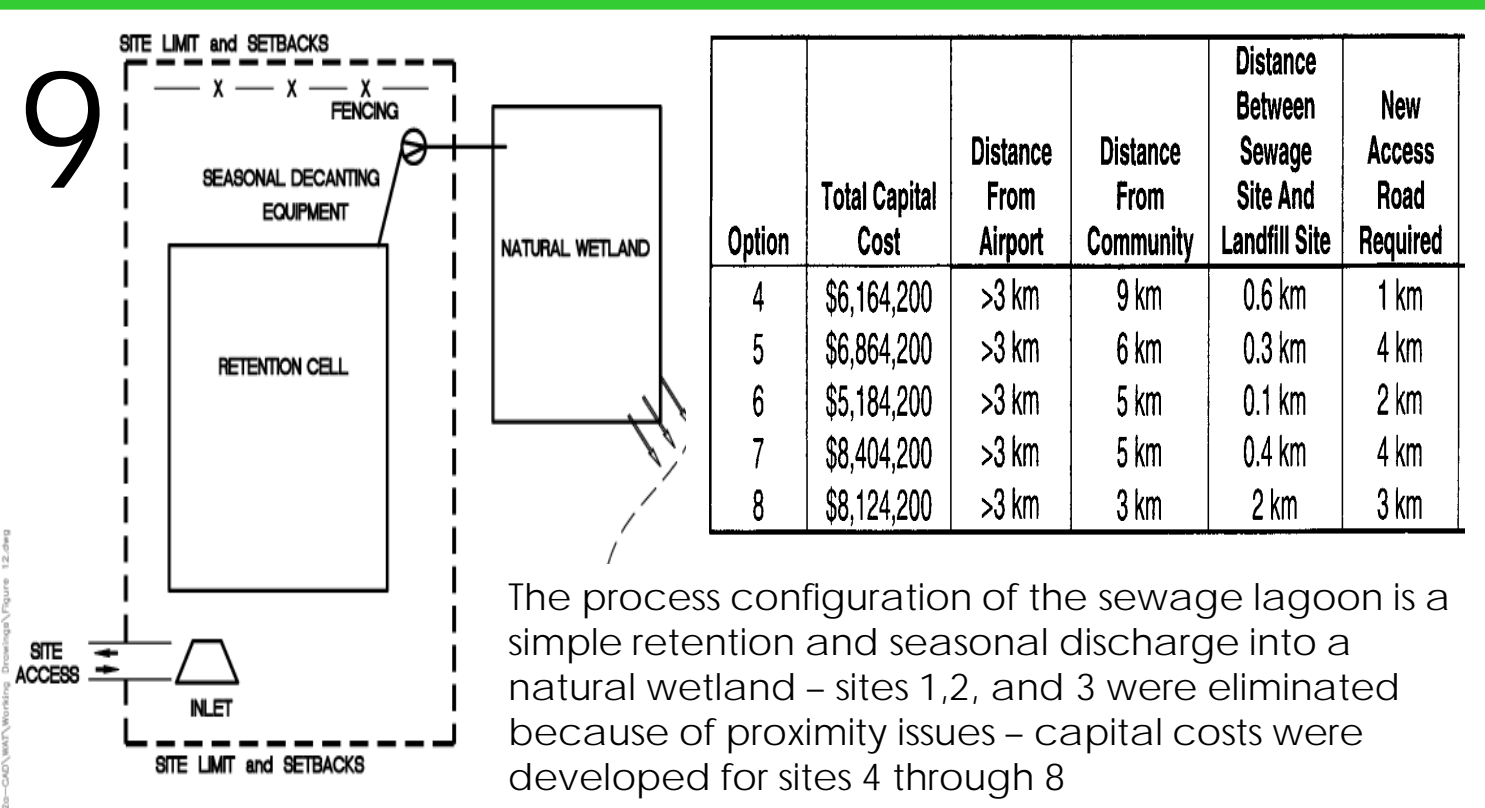
Site 4 was located east of the community – the area that is used for summer camping and has a number of cabin sites



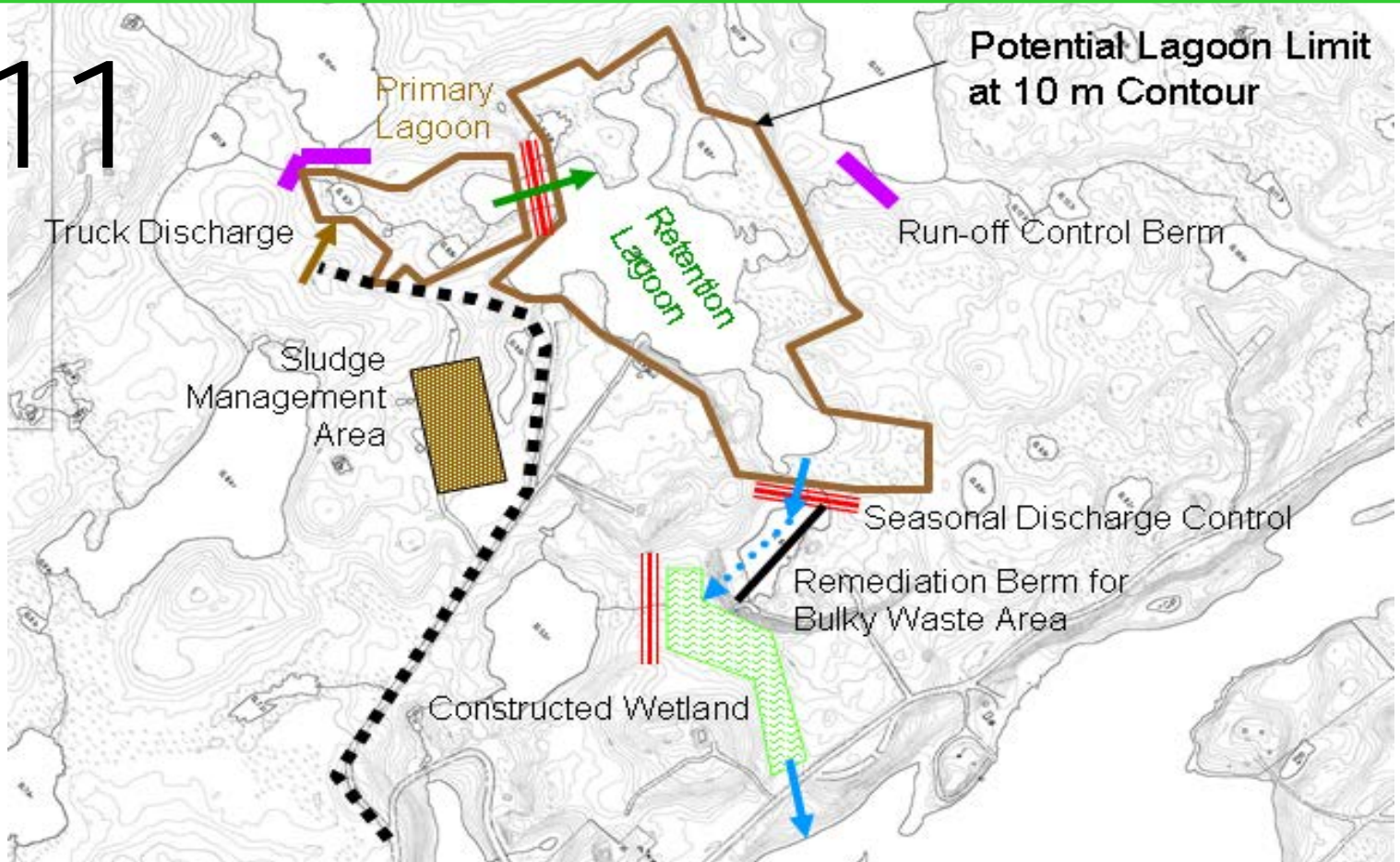
Site 6 is located north east of the community – the area contains several archeological sites – the sewage effluent would discharge into a popular fishing area



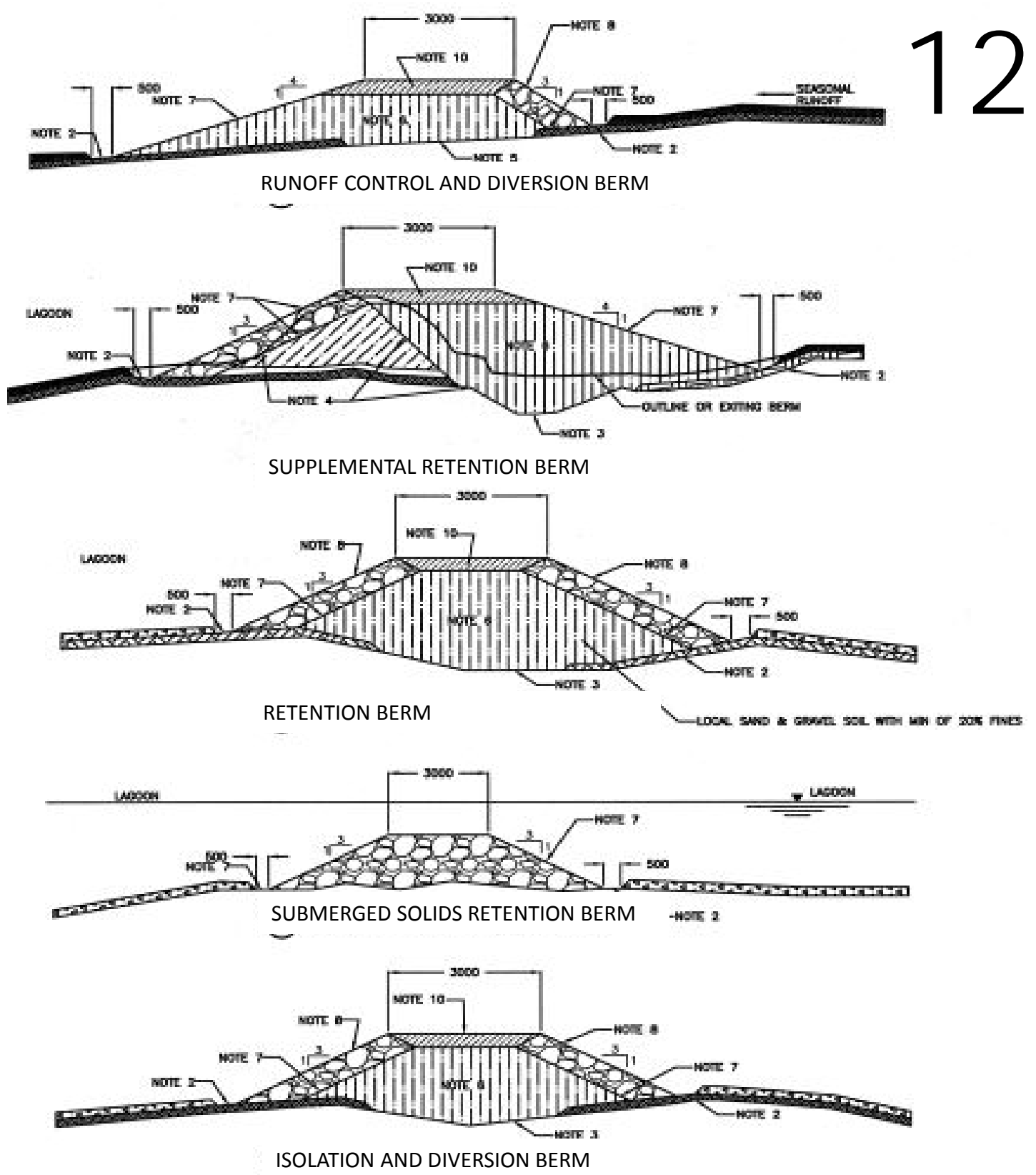
Site 8 is located south east of the community – the area has suitable granular material for potential use, but it is a considerable distance from the community



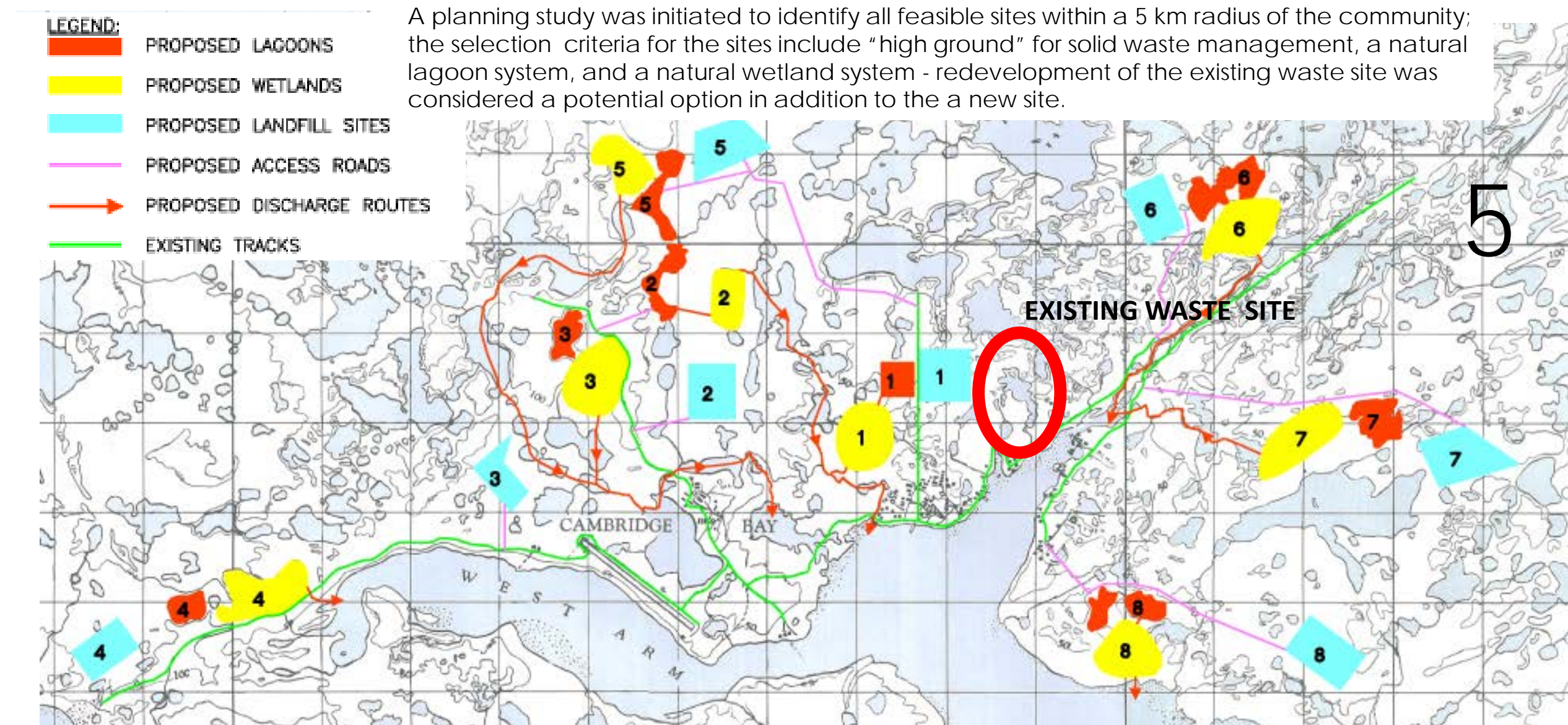
After considerable consultation with the community and the Hamlet Council, a decision was made to redevelop the existing site, and “engineer” the sewage treatment and solid waste management areas - the sewage treatment system included primary treatment, secondary retention, and controlled discharge through a limited wetland



The design features of the lagoon system included diversion structures for adjacent surface runoff; primary treatment with a rock berm; secondary retention with a low permeability earth berm; a biosolids treatment area; and a limited wetland



The available materials near the community allowed the construction of various earth structures to suit the difference functions associated with the lagoon



The completed lagoon system included a coarse rock berm to control flow from a primary lagoon, and an overflow structure in the retention berm structure



The lagoon is discharged seasonally by pumping over the berm structure through the wetland and onto a slope that cascades into the ocean in a location further away from the community - the measured effluent quality is BOD 25 to 50 mg/L; TSS 50 to 100 mg/L and FC 400 to 4000 CFU / 100 mL

CRYOFONT
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Figure 1: Recommended Snow Fence Location for Water Lake, Cambridge Bay

