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Submitted Via E-Mail

Our File: 3BM-CAP0207

Your File: _____

CIDM # 174311

September 25 2007

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RE: July 19th, 2007 Municipal Water Licence NWB3CAP0207 -

The Inspector would like to thank Fred Schell, Mayor of Cape Dorset and Acting SAO Brian McQuarrie for taking the time to meet during the inspection period and for acting as guides who were able to provide input and comments into the ongoing issues with both the waste metal facilities and the Sewage lagoons.

Part B: General Conditions

It should be noted that during the period of inspection the Municipality of Cape Dorset was operating under a current water license. That license, subsequent to the inspection, has since expired and is under review with the Nunavut Water Board. The Application has been in process for over a year in duration and covers the municipal solid waste area, potable water intake and sewage treatment systems for the community.

A survey of the Nunavut Water Board website shows that a great deal of questions and correspondence concerning various aspects of the design and subsequent construction of a new sewage lagoon have been posted for review and comment. This inspection report is only relevant to observations and discussion of the existing Three-Tier sewage lagoon, the bulk waste metals area, the municipal dump and the potable water treatment system for the community of Cape Dorset.

The Community of Cape Dorset also received one amendment to the then current license allowing the municipality to deposit sewage in to the then old sewage lagoon (Emergency Sewage Disposal Facilities). This application for amendment was approved by the board on September 24th 2004.

The Municipality of Cape Dorset, in March 2002 was issued an Inspector's Direction from Environment Canada requiring the Municipality to prevent the discharge of raw sewage from the Three Tier lagoon from entering water's frequented by Fish (Telik Inlet). The discharge was the result of a series of failures in the lagoon walls resulting in two of three cells leaking and the resulting overflow entering Telik Inlet.

During the inspection it was also noted that the license holder has signage at many of the stations noted under the Surveillance Network Program.

A review of the Nunavut Water Board FTP – Public Registry was conducted during the writing of this report. License 3BM-CAP0207. The proponent is reminded that an annual report is required to be filed by March 31st 2008 for the year ending December 31st 2007. This report is to include all items noted in this Part under Sections 1.i to 1.vii.



Part C: Conditions Applying to Water Use

A visual inspection of the Pipe line and intake facilities was conducted during the period of inspection. No issues were noted.

Water samples were taken near the intake pipe.

The raw water from Tee lake is pumped from the lake through the pipeline down to the holding tank. It is chlorinated on its way into the holding tank and again as it leaves the tank to enter the water truck. The chlorine residual is measured twice daily.

Metres and records were observed during the inspection inside the pumping station.

Part D: Conditions Applying to Waste Disposal

Sewage treatment;

The Licensee is responsible for ensuring that the Effluent entering the environment meets the following standards;

Parameter:	Max Concentration
Faecal Coniform :	1X 10(6) CFU/dl
BOD	120 mg/L
TSS	180 mg/L
Oil & Grease	No visible sheen
PH	Between 6 and 9

The licensee is reminded that these parameters are set by the Nunavut Water board and are included in the terms and conditions of the issued water license. Compliance with these terms is an obligation of the municipality.

During the period of inspection it was noted at the access road to the third tier (cell) that a channel from the toe or bank of the first and second cells of the lagoon was allowing sewage to flow overland (roadway) down the bank and out into Telik Inlet. This was immediately brought to the attention of the Acting SAO and Mayor who took action to have the cell wall fixed by the next morning. The Municipality was directed to provide photographs of the completed work to the inspector as soon as possible. No photos of this work have been received to date. It is important to note that this observation echo's those observations made in the previous inspection report of 2006 with reads;

“There is a leak from Cell 1 which runs along the road down into cell 2 along the northeast side. Additionally there appears to be a overflow from the culvert in cell 1 bypassing cells two and three flowing directly into Telik Inlet. Photographs taken during the inspection will clearly show this run-off or leakage from cell one bypassing the lower cells”

It should be noted that Algae is still visible in the stream running down from the third cell of the lagoon into Telik inlet and algae is also visible along the shoreline and wall of Kingait mountain when the run off enters Telik Inlet.

The licensee is reminded that prior to a planned decant of the sewage treatment lagoon system there is a requirement for the Municipality to notify the Inspector ten days in advance and to ensure the monitoring program is followed.



Solid Waste Management Area;

An inspection and samples were collected at the solid waste management area (metal dump) during the period of the inspection. In 2006 the Inspector provided the Municipality an opportunity to address those issues that were outstanding. This had not occurred by the period of the inspection. Large piles of un-segregated materials were evident along the shoreline of Telek Inlet, run off and leachate from the waste metals area was obviously entering Telek Inlet and large piles of batteries and other hazardous materials were evident. This issue was brought to the attention of the municipality in 2003, 2006 and most recently during the period of this inspection in July of 2007. The Municipality agreed this not acceptable and committed to addressing the issue.

This report is based on observations carried out on July 19th, 2007. Between then and now the municipality has provided the Inspector with a number of photographs detailing work having been completed in the solid waste management area. This work will be fully inspected during the planned 2008 municipal inspection. **The Municipality is commended for completing this work.**

During the inspection the following locations were sampled;

1. Raw Water (Tee lake),
2. Ponding of run-off from waste metal area approximately 50 metres NW between waste metal area and Telik Inlet,
3. Run off stream at three tier lagoon.

Results from these samples indicated that treatment from the three tier lagoon is not adequate and that contaminants are leaching from the waste metals area and possibly migrating into Telek Inlet.

Location	Sample Parameter	Result	Guideline	Comment
Raw water: -	Within Canadian Council of Ministers of the environment Guidelines (CCME) Guidelines			
Waste Metal Dump:	Ammonia as N	16 µg/L	19 µg/L	High
	Aluminium	100 µg/L	5-100µg/L	High
	Zinc	86 µg/L	30µg/L	Very High

(Only Zinc was found to exceed the Protection of Aquatic life Guidelines of the CCME)

Three Tier Lagoon	Manganese	2570 µg/L	50 µg/L	HIGH
	Iron	3000 µg/L	300 µg/L	HIGH

(Noted Parameters listed here were found to exceed the NWT Limits for Effluent Discharges)

Part E: Conditions Applying to Modifications and Construction

The Inspector noted a number of deficiencies during the period of the Inspection. These were outlined immediately following the inspection with the municipality and staff. To date the Municipality has responded with a number of updates indicating these issues had been addressed.

Given the current lack of a water license (at the writing of this report), the on-going application process for a new water license and subsequent review of the numerous documents to be found on the Nunavut Water Board FTP site completed at the time of writing this report, it is impossible for the Inspector to determine if there are any outstanding terms and conditions of this section.



Part F: Conditions Applying to Maintenance

The Water Intake Facility was well maintained and found to be working and in good order.

A request to the Municipality to review the Sewage and Solid Waste Disposal Operations and Maintenance manual was not successful. The Municipality had not completed the required document however did commit to having the document completed and ready for submission by March 31st for inclusion in the annual report. Subsequent up-dates from the municipality indicate the first draft has been completed and has been sent out for comment and review.

Part: G Conditions Applying to Abandonment and Restoration

The Hamlet of Cape Dorset is currently engaged in the development of an implementation plan to open and utilize a new sewage lagoon. These documents and other correspondence were noted on the Nunavut Water Board Website. It is unclear how the municipality will manage the A&R work required to close the Three tier lagoon or if this system will be maintained as an emergency back up facility. This decision will be reviewed and decided as part of the application process for the new water license for the Municipality and not as a part of this inspection.

Part H: Conditions Applying to the Surveillance Network Program (Monitoring Program)

During this inspection it was noted that there was an improvement on the required signage from the last inspection. The licensee is reminded that they must ensure that adequate signage is in place.

During the inspection it was noted that the Hamlet had not complied with section 2 of this part. The Municipality is reminded that they must collect the required samples at all four locations (1 added as per the amendment to the existing license and if the fourth location is used as an emergency back up facility during that period of time)

As the Municipality is applying for a new water license it would be beneficial to them to have a monitoring strategy that includes this required sampling as part of their application.

To assist the licensee in the future, the following are the required parameters to be tested for as a requirement of their water license. As well the Licensee is required to sample, during the months of May to August inclusive.

BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Ammonia Nitrogen
Nitrate-Nitrite	Oil and Grease (visual)
Total Phenols	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Arsenic	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	

These samples are to be collected and analysed in accordance with a Quality Control / Quality Assurance plan. The outline of which was to be provided to the Community within 60 days of the issuance of this license by the Nunavut Water Board. There is no indication that this was completed by the Nunavut Water Board even after this was noted to the Board in the 2006 Inspection report.



The Nunavut Water Board is reminded that failure to comply with terms of licenses issued by the Board puts the validity of the issued license in question.

As follow up to the inspection report of 2006 the Municipality stated that they had not removed any solids from the three tier lagoon in the last year.

Non-Compliance:

Sewage treatment in the community continued to be below an acceptable standard because of problems with the three-tier lagoon system.

The Municipality is also required to complete the following;

- Maintain the appropriate signage, and Surveillance Network Program (SNP)
- Develop a Quality Assurance/ Quality Control Plan,
- Develop a Solid Waste Disposal Operations and Maintenance Manual

Finally and in addition to the above list, if the Municipality plans to close or abandon the use of the three tier lagoon system in the community then an Abandonment and Restoration Plan is to be submitted to the Nunavut Water Board for review and approval six months prior to abandonment. If however the Municipality expects to continue to use this system then the continued operations of the three tier lagoon system must be included within the application for, and issuance of, the new Water License.

A. Keim
Inspector's Name

Original signed and mailed this date
Inspector's Signature

Attached under separate cover;
Photos taken during Inspection of July 19th, 2007

Cc:
Peter Kusugak – Manager Field Operations section- Indian and Northern Affairs Canada
Phyllis Beaulieu – Manager licensing – Nunavut Water Board

















