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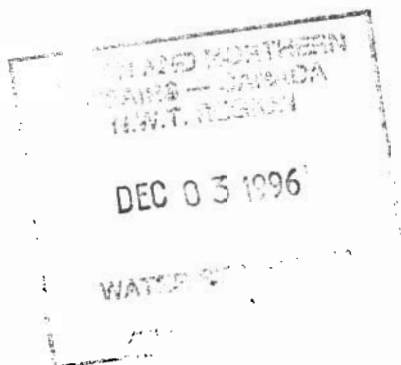


CANADA REMEMBERS
LE CANADA SE SOUVIENT

DIAND Nunavut District
Box 100
Iqaluit, NT
XOA OHO

Your file Votre référence

November 25, 1996



Our file Notre référence
B9545-5-N6L4-1562

Mr. Darren Flynn
Senior Administrative Officer
Hamlet of Arviat
Arviat, NT
XOC OEO

Dear Mr. Flynn;

Re: Water Management Inspection and Analytical Results: August 16, 1996.

1. Attached is a copy of the inspection report prepared as a result of the water management inspection carried out on August 16, 1996.
2. You will note some specific concerns within the report, relating to the operation and maintenance of the dump and sewage lagoon. Monitoring of the frost heaving at the base of the lagoon should be continued and evaluated more formally.
3. If licensing proceeds and the Hamlet is in possession of a water licence prior to next summer, then in all likelihood an Abandonment and Restoration plan will be required for the work that MACA is planning for next summer on the clean-up of the abandoned sites next summer.
4. Also enclosed are the results from a sewage effluent sample that was collected during the inspection. Of particular note is the ammonia level, which is very high.
5. If you have any questions, please do not hesitate to contact me at the above address, or by phone at (819)-979-4405.

Sincerely,

Paul Smith
Water Resources Officer
Nunavut District

- cc. - Nunavut Water Board, Gjoa Haven
 - RMO, DIAND, Rankin
 - Water Resources Division, DIAND, YK
 - MACA, Rankin Inlet

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INDIAN & NORTHERN AFFAIRS
WATER RESOURCES LABORATORY
Box 1500
Yellowknife, NT. X1A 2R3
Tel. (403) 920-8129
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To: Indian & Northern Affairs Canada
Water Resources\NAP
Baffin District Office
Box 100
Iqaluit NT X0A 0H0
Paul Smith

SEP 17 1996

D.I.A.N.D.
IQALUIT, NT

SAMPLE INFORMATION

Our Lab # : 961360
Your Sample ID: Arviat
Sample Matrix : sewage

Account No.: Baffin

Collection:
Location: Arviat sewage
Date: 08/16/96
By: PS/HK

Report Date: 09/05/96

Approved by: W. Wood

- SAMPLE ANALYSIS REPORT -

Lab#	Parameter	Result Units	Detect Limit	analdate	Method
961360	Calcium	22.80 mg/L	0.040	08/26/96	20103
	T.Cadmium ICP-M	10.1 ug/L	0.100	08/27/96	100133
	Chloride	673.00 mg/L	0.080	08/29/96	17206
	T.Cobalt ICP-MS	3.4 ug/L	0.100	08/27/96	100115
	T.Chromium ICP-	1.8 ug/L	0.200	08/27/96	100111
	T.Copper ICP-MS	18.3 ug/L	0.100	08/27/96	100119
	Filt.Residue	1469 mg/L	10.000	08/23/96	10451
	Potassium	33.70 mg/L	0.050	08/27/96	19106
	Magnesium	45.70 mg/L	0.010	08/26/96	12102
	T.Manganese ICP	811.0 ug/L	0.100	08/27/96	100113
	Sodium	43.10 mg/L	0.040	08/27/96	11102
	Non Filt Residu	16 mg/L	3.000	08/23/96	10406
	Ammonia-N	60.700 mg/L	0.002	09/03/96	07562
	T.Nickel ICP-MS	10.3 ug/L	0.100	08/27/96	100117
	T.Lead ICP-MS	7.1 ug/L	0.200	08/27/96	100145
	pH	7.54 pH	0.050	08/21/96	10301
	T.Arsenic(Hydri	8.3 ug/L	0.300	08/29/96	33011
	T.Iron	2600 ug/L	20.000	08/30/96	26004
	Turbidity	10.4 NTU	0.100	08/28/96	02081
	T.Zinc ICP-MS	10.1 ug/L	0.500	08/30/96	100121

MUNICIPAL WATER USE INSPECTION FORM

DATE: August 16, 1996 COMPANY REP: Mike Gibbons / Darren Flynn
LICENSEE: Hamlet of Arviat LICENCE #: Unlicensed

WATER SUPPLY

Source (s): Wolf Creek → Reservoir Quantity Used (to date): 33,000 m³ / yr.
Owner/Operator: DPW / Hamlet (estimate or actual)

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable

Intake Facilities: Ukn Storage Structure See note Treatment Systems A Chem. Storage A
Flow Meas. Device A Convey. Lines Ukn Pumping Stations A

Comments: MACA is planning to expand the 1st cell of the reservoir - this work will begin next year and is scheduled to finish in 3 years. The reservoir will be larger + deeper.

WASTE DISPOSAL

Sewage Sewage Treatment System (primary, secondary or tertiary) Primary - berm filtration
Natural Water body _____ Continuous Discharge (land or water) _____
Seasonal Discharge ✓ Wetlands Treatment Some Trench _____
Solid Waste: Owner/Operator: GNWT / Debra Hamlet - See note 1
Landfill _____ Burn & Landfill ✓ Other _____

Indicate: A - Acceptable U - Unacceptable N/A - Not Applicable

Disch. Quality Sample collected Decant Structure A see note 2 Erosion See note 3
Disch. Meas. Dev. N/A Dyke Inspection N/A Seepages A
Dams, Dykes N/A Freeboard A Spills N/A
Construction N/A O & M Plan None A & R Plan See note 4

Periods of Discharge: Seasonal Effluent Discharge Rate: Unknown, but ~20 l/sec at culvert
Comments: Note 1 - EBA Engineering Ltd. Cons - Hamlet Ltd. was contracted to evaluate Arviat's Solid Waste disposal sites. The report is entitled "Environmental Assessment of Former and Current Solid Waste Disposal Sites in Arviat, NT" - November 1995". Continued next page...

FUEL STORAGE

Owner: _____ Operator _____ Condition of Tanks _____
Berms & Liners _____ Water within berm: _____ Evidence of Leaks: _____
Drainage Pipes _____ Pump Station and Catchment Berm _____
Pipeline Condition _____ Not Applicable: ✓

SURVEILLANCE NETWORK PROGRAM

Samples Collected: (Hamlet) None required
(DIAND) Sewage effluent above culvert on access road.
Signs Posted: SNP Not required Warning Needed @ dump
Record & Reporting None required

Geotechnical Inspection: Not required

Non-Compliance of Act or Licence: Hamlet is unlicensed, but licensing was anticipated once the Sewage Effluent Study was completed. The study has been completed

Page 2 attached Yes ✓ No _____

Licensee Representatives Title

Licensee Representatives Signature

Paul Smith
Inspectors Name

Paul Smith
Inspectors Signature

WATER USE INSPECTION REPORT

(continued)

Date: August 16/96

Licence #: Unlicensed

General Comments: (Continued)

Note 1 cont.: This report contains valuable recommendations on how the present site should be operated. It is important that these recommendations be followed in order to ensure the efficient and effective use of this facility. Presently, the dump is not burned regularly nor is it covered with granular material. More segregation and better control is required.

Also noted in the report is the need for the dump to be fenced. MACA is budgeting for this in 1998/99.

MACA is also funding clean-up activities at the old waste disposal site. This work is scheduled for next year.

The Hamlet should provide a copy of EBA's report to the Water Board.

There is no waste oil problem as there are waste oil furnaces in operation.

Note 2 There is no damant structure per say. The berms of the lagoon are designed to allow effluent to filter through once frost free in late summer. Two concerns are noted. The first being that it appears that effluent is passing through the berm that is ^{immediately} adjacent to the solid waste disposal facility. The second is that the lagoon berms will eventually become clogged. It may be necessary to scrape and then replace the inner wall of the berm every few years (the result otherwise may be an every decreasing ability for the lagoon to drain itself during the summer months)

Paul Smith

Water Inspector

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WATER USE INSPECTION REPORT

(continued)

Date: August 16/96

Licence #: Unlicensed

General Comments: (Continued)

Note 3: Frost heaving at the base of the lagoon during the last inspection is still an active concern. Apparently sewage effluent continues to drain from the lagoon well into the fall (the berm remains unfrozen longer than the surrounding ground) and accumulates and freezes below the lagoon's berm. During the fall/winter, the heaved area reaches the same height as the berm itself.

Note 4 No abandonment + restoration (A+R) plan is in place, but MACA has set aside funds for the clean-up of abandoned solid waste disposal sites. As licensing is expected to continue in the near future, formal plans should be prepared and submitted to the Water Board for comment and approval.

Brown Smith

Water Inspector

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