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Your file - Votre référence

Our file - Notre référence

December 4, 2002

NWB3-PAN0207

Greg Morash
Senior Administrative Officer
Hamlet of Pangnirtung
P.O. Box 253
Pangnirtung, NU X0A 0R0

RE: July 30, 2002 Municipal Water Use Inspection - Report

The Water Resources Officer (WRO) appreciates the assistance provided, during the tour of the Hamlet's water use and waste disposal facilities. Enclosed for your records is a copy of the Municipal Water Use Inspection Report performed on July 30, 2002. As of December 9, 2002 the Municipality of Pangnirtung has held a Water Licence as required under *Nunavut Land Claims Agreement, Nunavut Waters and Nunavut Surface Rights Tribunal Act*. During the inspection the following observations were noted.

- **Water Supply:** During the time of inspection it was noted that the depth of Duval River was quite low (Photo 1). Recharging the reservoir from such a shallow water supply could cause infiltration of silt to the water reservoir. The Water Intake Facility and water reservoir appeared to be well maintained facilities (Photo 2 & 3). Attached analysis of water samples taken at (PAN-1) the water reservoir indicate that Nitrate + Nitrite (<0.008 mg/L vs 3.2 mg/L) and Colour (10 TCU vs 15 TCU) are within *Guidelines for Canadian Drinking Water Quality*. Enclosed analysis indicate that a pH of (6.44 vs 6.5-8.5) is in excess of the *Guidelines for Canadian Drinking Water Quality* Maximum Acceptable Concentration.

- **Sewage Disposal:** The Sewage Lagoon is all but non functioning. Trucks discharge sewage onto a area of large aggregate material (Photo 15). The sewage then drains down a refuge laden trench to the ocean (Photo 16). Little if any treatment is accomplished prior to the sewage effluent entering the ocean. The Water Resources Officer gave suggested that measures be undertaken to place a retention berm at the discharge of the Sewage Lagoon. Enclosed

analysis of (PAN-3) Sewage Lagoon effluent indicate that Biological Oxygen Demand (431 mg/L vs 100 mg/L), Total Suspended Solids (384 vs 120 mg/L) and Total Ammonia (151 mg/L vs 2.2 mg/L) all exceed *Municipal Wastewater Effluent Quality Guidelines.*

- ☐ **Solid Waste Disposal Facility:** Waste batteries and waste oil are stored in separate locations removed from the Solid Waste Disposal Facility (Photo 7 & 8). As previously noted, the fence at the Solid Waste Disposal Facility is only partly intact (Photo 14). There is considerable wind blown debris in the vicinity of the Solid Waste Disposal Facility (Photo 10). The WRO noted that there was considerable waste associated with the processing of fish at the dump (Photo 12). It was noted that waste seepage was emitting from 3 culverts that had been placed along the west side of the dump draining to the ocean (Photo 9). The Water Resources Officer suggested that measures be undertaken to stop seepage from the Solid Waste Disposal Facility. Enclosed laboratory analysis of (PAN-2) seepage from the dump indicate Total Suspended Solids (870 mg/L vs 120 mg/L), Biological Oxygen Demand (1070 mg/L vs 100 mg/L) and Total Ammonia (379 mg/L vs 2.2 mg/L) exceed the *Municipal Wastewater Effluent Quality Guidelines.*

- ☐ **Fuel Storage:** The Tank Farm berm appeared to be in good repair (Photo 5). There was no obvious signs of fuel or oil spillage within the bermed area. There was some water within the berm area but no concerns were raised. Of concern was the fact that several unmanned drainage hoses were left unattended at the Tank Farm (Photo 6), they should be removed.

- ☐ **Non-Compliance of Act or Licence**: The following reports have yet to be submitted: Annual Reports for 1998, 1999 and 2000 Operational & Maintenance Plan. Discharge of Sewage Lagoon and Solid Waste Disposal Facility effluent exceed *Municipal Wastewater Guidelines* Maximum Allowable Concentrations. In accordance with General Conditions, Part B of the *Water Licence*; Within 90 days of the first visit of the Inspector, all necessary signs including Surveillance Network Program (SNP) stations shall be posted in all official languages of Nunavut to the satisfaction of the Inspector.

If there are any concerns or questions in regards to this inspection, please contact me at (867) 975 4298 or bodykevichc@inac.gc.ca.

Sincerely,

Constantine Bodykevich
Water Resources Officer (WRO)
INAC, Nunavut District

cc. -Nunavut Water Board, Gjoa Haven (Jim Wall)
-CG&T, Iqaluit (Doug Sitland)
-Baffin Health & Social Services, Iqaluit (Shannon Mackie)
-EC Environmental Protection, Yellowknife (Anne Wilson)
- INAC Water Management, Iqaluit (Michael Roy)

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MUNICIPAL WATER USE INSPECTION REPORT

Date: July 30, 2002 **Licensee Rep. (Name/Title):** Greg Morash/ SAO

Licensee: Hamlet of Pangnirtung **Licence No.: NWB3-PAN0207** (NEW)

WATER SUPPLY

Source(s): Duval River / Reservoir **Quantity used:** 5037718

Owner:/Operator: Hamlet of Pangnirtung

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A **Storage Structure:** A **Treatment Systems:** A **Chemical Storage:** A

Flow Meas. Device: A **Conveyance Lines:** NA **Pumping Stations:** A

Comments: The area of the Duval River that the recharge line intake is located seemed to be low at the time of inspection. The Water Intake Facility was a clean well maintained facility with a operating chlorination system in place. The water reservoir was completely fenced and well kept.

WASTE DISPOSAL

Sewage: **Sewage Treatment System** (Prim./Sec/Ter.): Primary; in trench to ocean.

Natural Water Body: **Continuous Discharge** (land or water): water

Seasonal Discharge: U **Wetlands Treatment:** no **Trench:**

Solid Waste: **Owner/Operator:** Hamlet of Pangnirtung

Landfill: **Burn & Landfill:** X **Other:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: Sampled **Decant Structure:** NA **Erosion:** U

Discharge Meas. Device: NIL **Dyke Inspection:** U **Seepages:** U

Dams, Dykes: U **Freeboard:** **Spills:** NIL

Construction: NA **O&M Plan:** U **A&R Plan:** NA

Periods of Discharge: A **Effluent Discharge Rate:** Not measured

Comments: The present Sewage Disposal Facility does very little in the way of treating sewage prior to discharge into the ocean. The Solid Waste Disposal Facility similarly has problems with seepage due to 3 culverts presently placed through the berm at the west side of the dump. The perimeter fence at the dump requires maintenance.

FUEL STORAGE

Owner/Operator:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: A **Water within Berms:** A **Evidence of Leaks:** A

Drainage Pipes: U **Pump Station & Catchment Berm:** NA

Pipeline Condition: NI **Not Applicable:** **Condition of Tanks:** NI

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected **Hamlet:** NIL

INAC: potable water, sewage effluent, dump leachate

Signs Posted **SNP:** NIL **Warning:** Not Observed

Records & Reporting: O&M and Annual Reports for 1998, 1999 & 2000.

Geotechnical Inspection: Not required

Non-Compliance of Act or Licence: At the time of inspection the Water Licence for the Hamlet of Pangnirtung had expired. The following reports have yet to be submitted: Annual Reports for 1998, 1999 & 2000 and Operational & Maintenance Plan. Verbal direction was given by WRO to correct discharges of sewage and dump effluent exceeding *Municipal Wastewater Guidelines.*

Constantine Bodykevich

Inspector's Name

Inspector's Signature

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Global Positioning System Coordinates for the Hamlet of Pangnirtung 2002

Pangnirtung-1 Pangnirtung Duval River-1	N66.08493 W65.41067
Pangnirtung -2 Pangnirtung Water Reservoir Sample-2	N66.08587 W65.40389
Pangnirtung Dump-3 Pangnirtung Dump-3	N66.09250 W65.40104
Pangnirtung Dump-4 Pangnirtung Dump Leachate Sample-4	N66.09257 W6540148
Pangnirtung Dump-5 Pangnirtung Sewage Lagoon Sample-5	N66.09249 W65.40168
Pangnirtung Dump-6 Pangnirtung Waste Oil Storage-6	N66.09240 W65.40325
Pangnirtung Dump-7 Pangnirtung Waste Battery Storage-7	N66.08394 W65.42429

Canada

Pangnirtung Inspection Pictures 2002

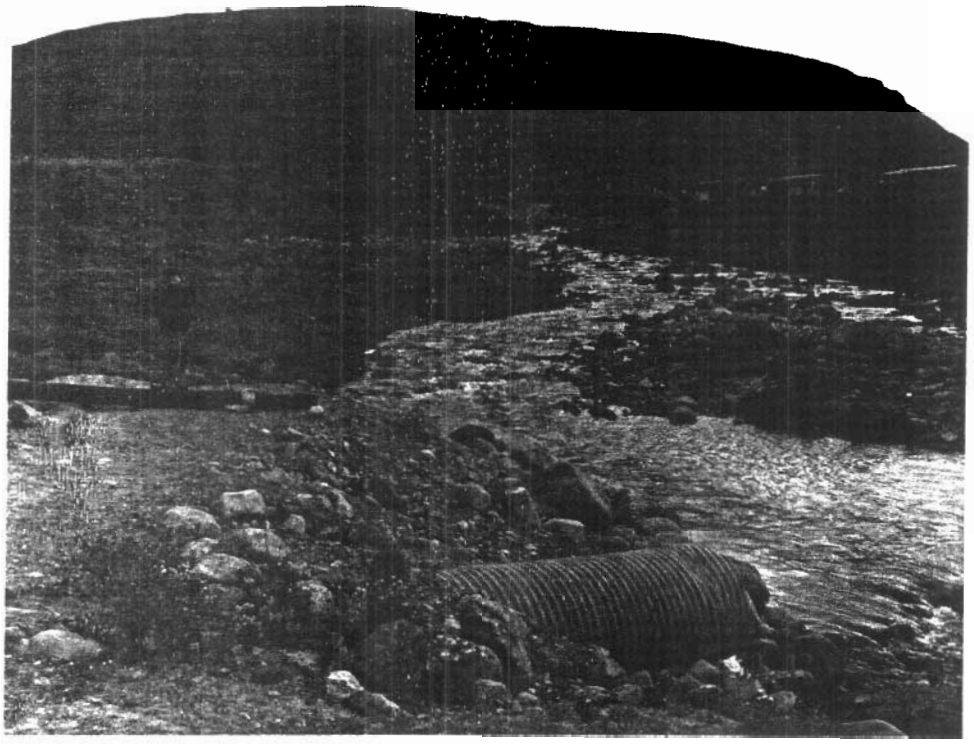


Photo # 1 Water supply River; intake pipe for reservoir.

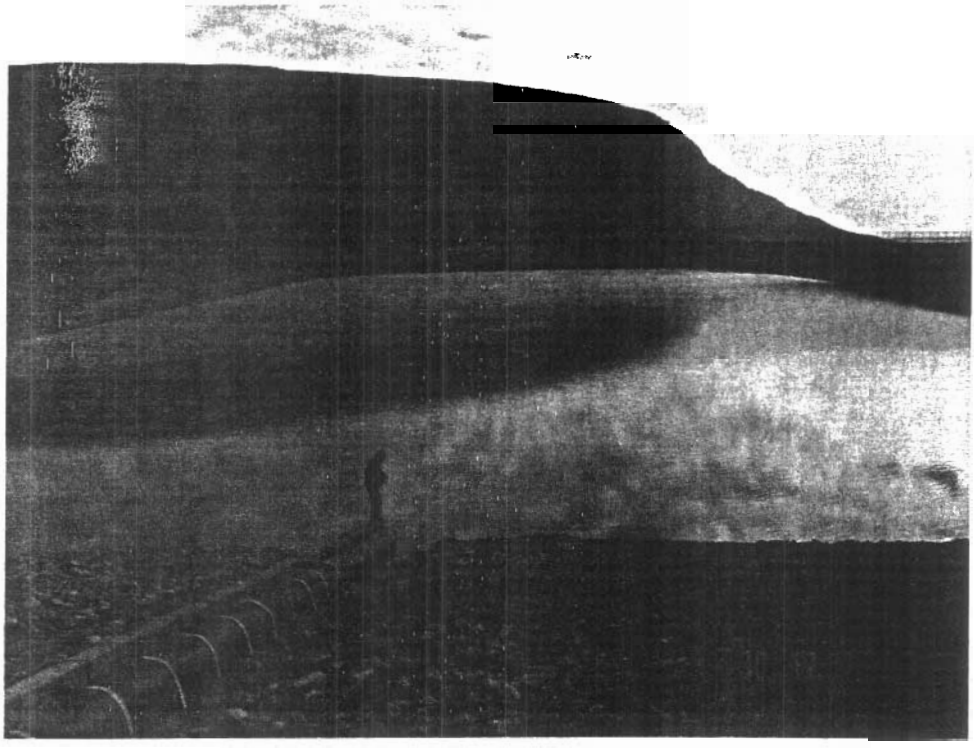


Photo # 2 Water reservoir fully fenced; location of potable water sample.

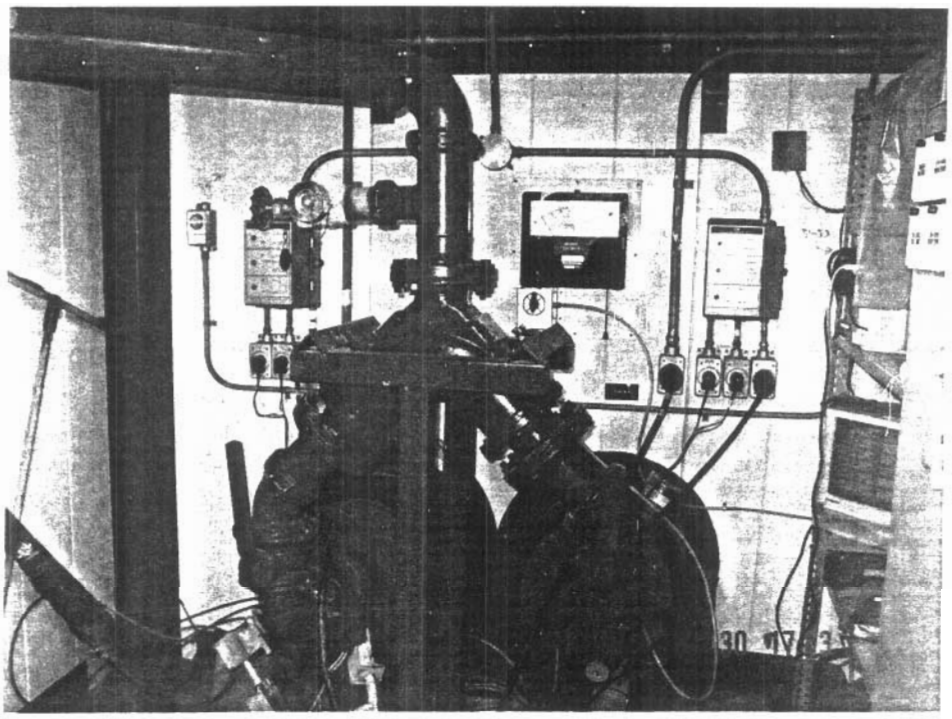


Photo # 3 Inside Water Intake Facility submersible pump lines.

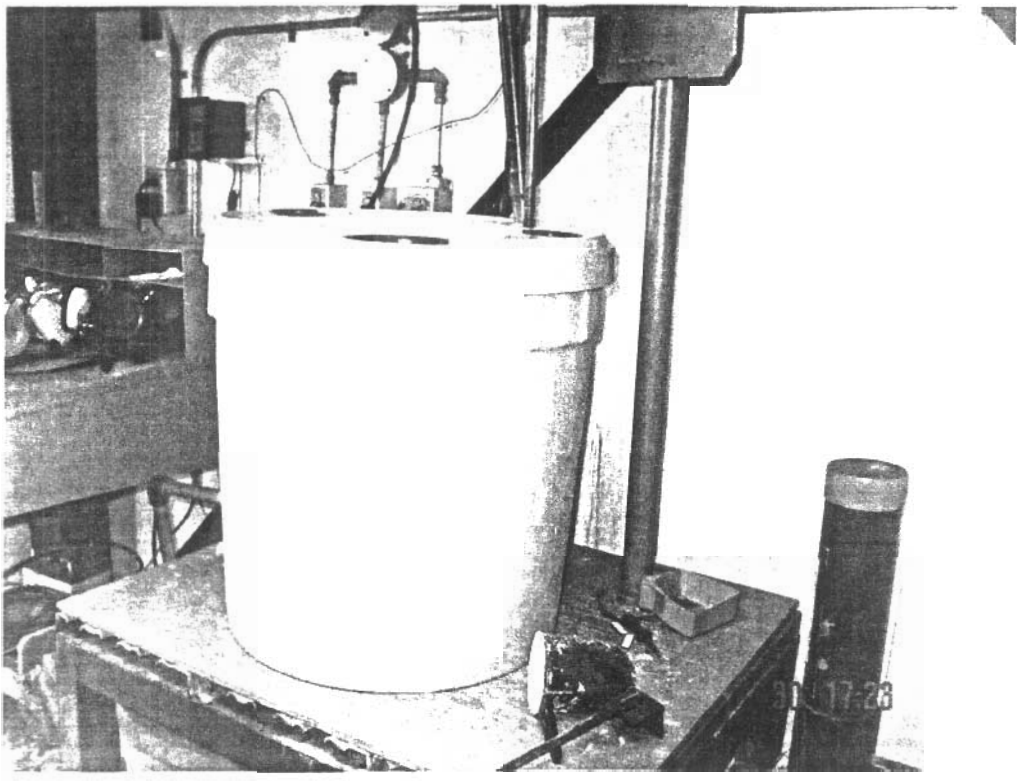


Photo # 4 Chlorination system in Water Intake Facility located at water reservoir.

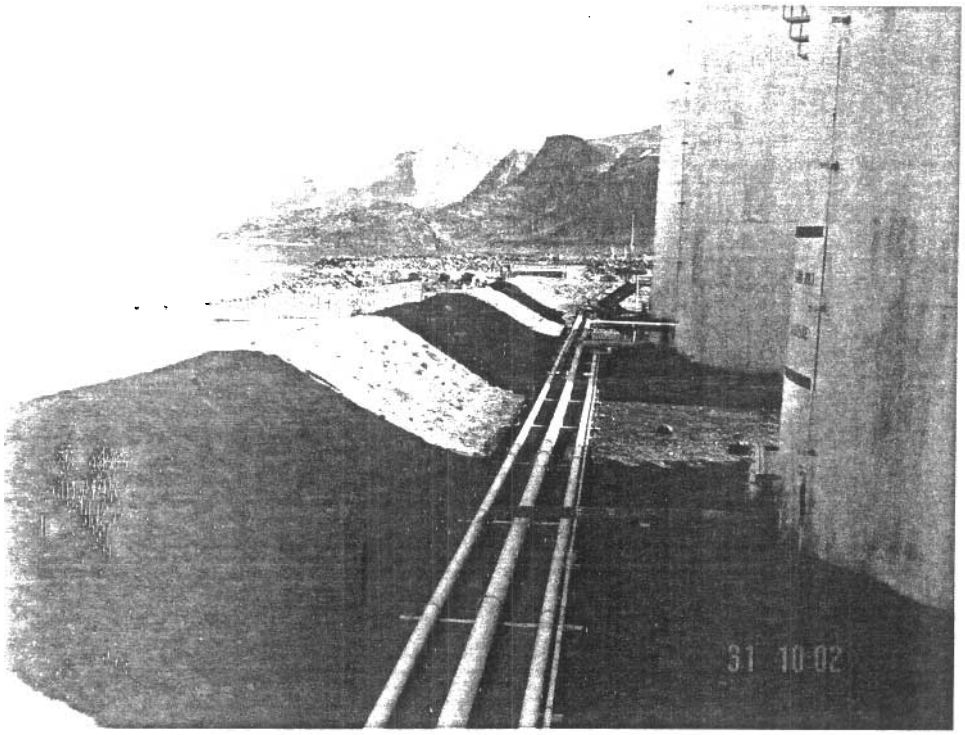


Photo # 5 Tank farm berms appear in good repair.

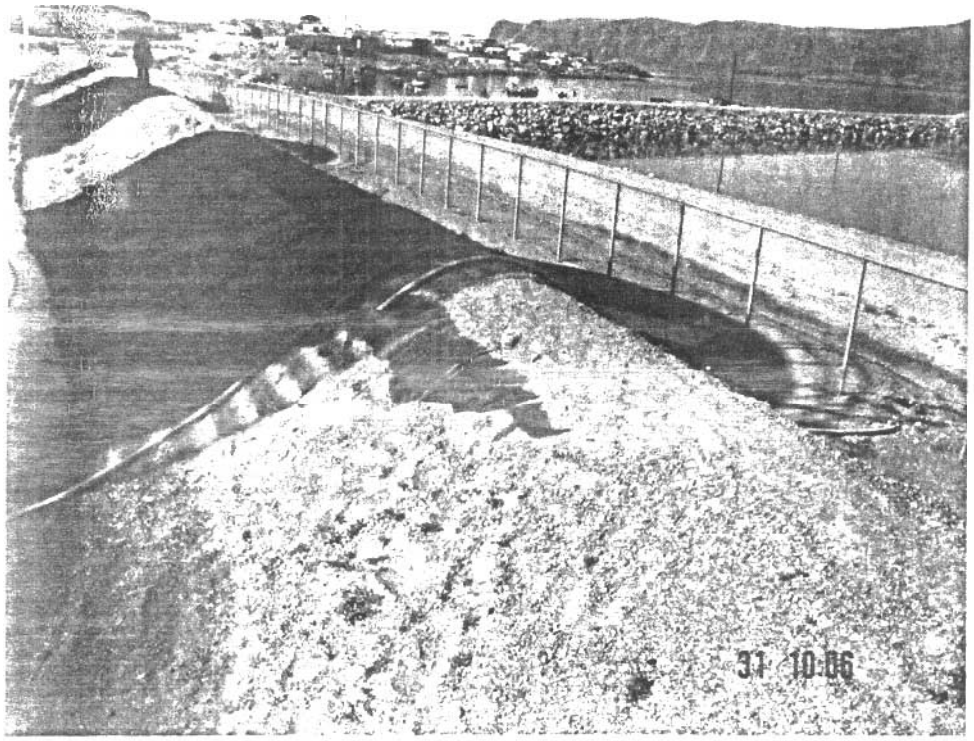


Photo # 6 Drainage hose left unattended at tank farm.

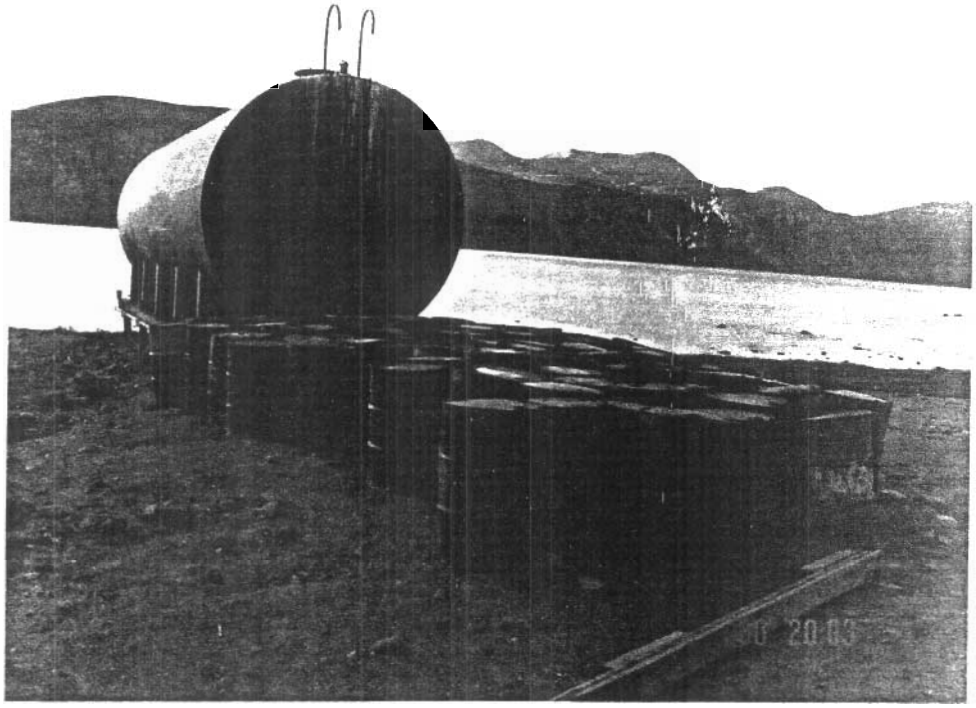


Photo # 7 Waste oil stored by proposed sewage treatment building, about 70 drums stored there.

Photo # 8 Waste batteries that have been segregated from Solid Waste Disposal Facility in sea-lift container by power plant.

Photo # 9 Seepage from solid waste disposal facility.

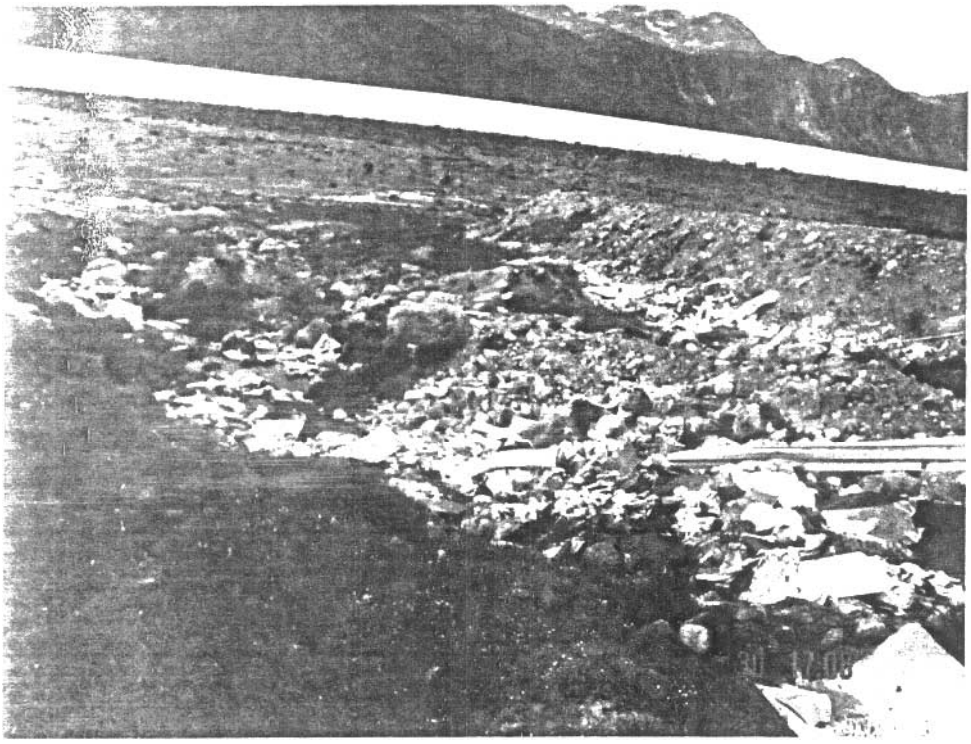


Photo # 10 Creek alongside municipal Solid Waste Disposal Facility showing windblown refuge .

Photo # 11 Ditch across the road from solid waste disposal ground; windblown refuge shown in ditch.

Photo # 12 Tipping face of Solid Waste Disposal Facility; waste from fish processing plant shown in left of photo

Photo # 13 Large metal waste section of Solid Waste Disposal Facility.

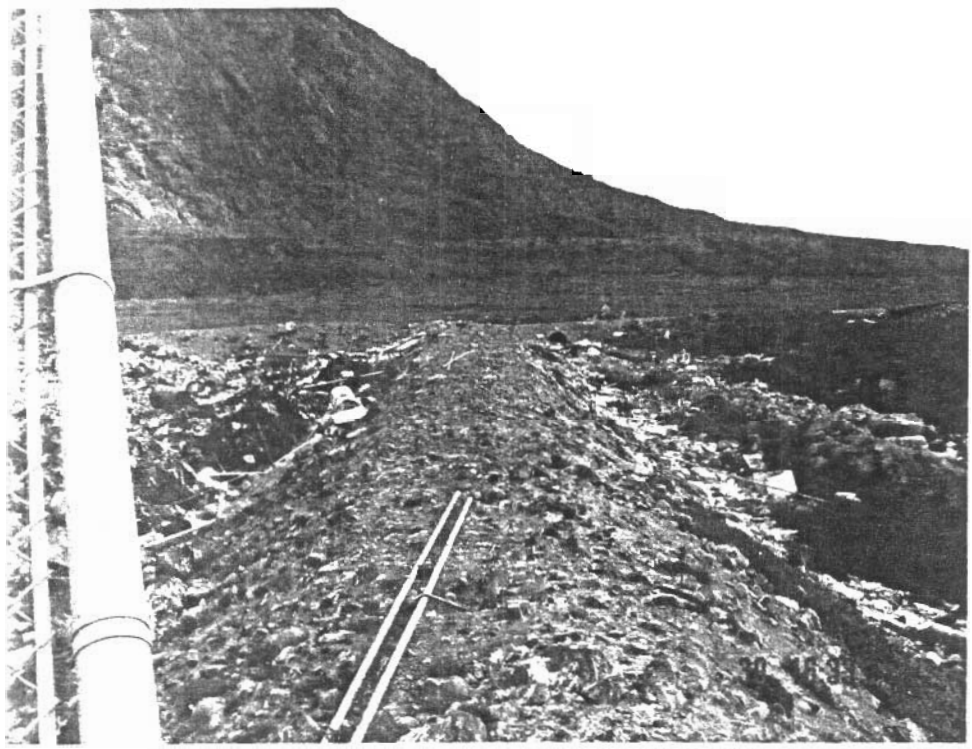


Photo # 14 Solid Waste Disposal Facility berm shown; separating creek from landfill. Fence has been damaged and is no longer in place along berm. Considerable garbage has been windblown into creek.

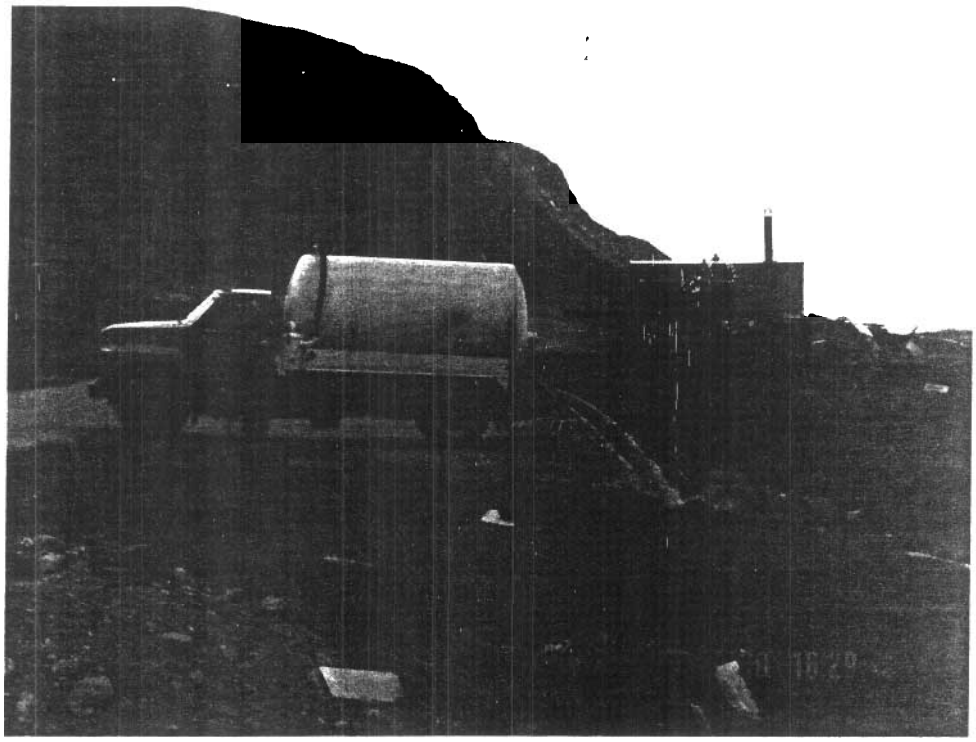
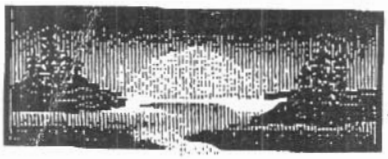


Photo # 15 Sewage truck discharged at Sewage Lagoon discharge structure.

Photo # 16 Sewage lagoon; shown minuets after discharge from sewage truck. Note that little if any retention of sewage is accomplished at lagoon



Taiga Environmental Laboratory
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Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Pangnirtung Potable Water (18,19) **Taiga Sample ID:** 222314

Client Project: Sample Type: water Received Date: 12-Aug-02

Location: PAN-1 Pangnirtung Potable Water Sampling Date:

Report Status: **Final** *Approved by:* _____ _____

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Physicals					
Alkalinity	2.6	mg/L	0.3	19-Aug-02	
Colour	10		5	15-Aug-02	
Conductivity, Specific	19.3	uS/cm	0.3	19-Aug-02	
pH	6.44	pH units	0.05	19-Aug-02	
Solids, Total Dissolved	20	mg/L	10	19-Aug-02	
Solids, Total Suspended	5	mg/L	3	19-Aug-02	
Turbidity		NTU		20-Aug-02	14
Nutrients					
Ammonia as N	0.007	mg/L	0.005	19-Aug-02	
Biological Oxygen Demand	< 2	mg/L	2	12-Aug-02	
Nitrate+Nitrite as N	< 0.008	mg/L	0.008	27-Aug-02	
Organic Carbon, Dissolved	0.7	mg/L	0.5	22-Aug-02	
Organic Carbon, Total	0.6	mg/L	0.5	22-Aug-02	
Phosphorous, Dissolved	0.005	mg/L	0.004	15-Aug-02	
Phosphorous, Total	0.007	mg/L	0.004	15-Aug-02	

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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Pangnirtung Potable Water (18,19) DRW-1

Taiga Sample ID: 222314

Major Ions

Calcium	0.87	mg/L	0.05	21-Aug-02
Chloride	1.1	mg/L	0.2	16-Aug-02
Hardness as CaCO3	3.53	mg/L	0.17	21-Aug-02
Magnesium	0.33	mg/L	0.02	21-Aug-02
Potassium	0.22	mg/L	0.03	20-Aug-02
Silica, Reactive	0.59	mg/L	0.02	19-Aug-02
Sodium	1.06	mg/L	0.02	20-Aug-02
Sulphate	<3	mg/L	3	14-Aug-02

Data Qualifier Descriptions:

14 Insufficient sample to perform analysis

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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: Pangnirtung Sewage (20,21) **Taiga Sample ID: 222315**

Client Project: **Sample Type:** water **Received Date:** 12-Aug-02

Location: Pangnirtung Sewage **Sampling Date:**

Report Status: **Preliminary** ***Approved by:*** _____

Test Parameter	Result	Units	Detection Limit	Analysis Date
Physicals				
Alkalinity	515	mg/L	0.3	19-Aug-02
Colour	300		5	15-Aug-02
Conductivity, Specific	1380	µS/cm	0.3	19-Aug-02
pH	7.85	pH units	0.05	19-Aug-02
Solids, Total Dissolved	516	mg/L	10	27-Aug-02
Solids, Total Suspended	384	mg/L	3	27-Aug-02
Turbidity	566	NTU	0.1	28-Aug-02
Nutrients				
Ammonia as N	151	mg/L	0.005	19-Aug-02
Biological Oxygen Demand	431	mg/L	2	12-Aug-02
Nitrate+Nitrite as N	< 0.008	mg/L	0.008	27-Aug-02
Organic Carbon, Dissolved	191	mg/L	0.5	22-Aug-02
Organic Carbon, Total	130	mg/L	0.5	
Phosphorous, Dissolved	14.5	mg/L	0.004	21-Aug-02
Phosphorous, Total	17.5	mg/L	0.004	21-Aug-02

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Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: PAN-3 Pangnirtung Sewage (20,21) **Taiga Sample ID: 222315**

Major Ions

Calcium	6.36	mg/L	0.05	21-Aug-02
Chloride	58.9	mg/L	0.2	16-Aug-02
Hardness as CaCO3	35.1	mg/L	0.17	21-Aug-02
Magnesium	4.66	mg/L	0.02	21-Aug-02
Potassium	27.3	mg/L	0.03	20-Aug-02
Silica, Reactive	11.8	mg/L	0.02	19-Aug-02
Sodium	81.4	mg/L	0.02	20-Aug-02
Sulphate	33	mg/L	3	14-Aug-02

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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: PAN-2 Pangnirtung Dump Seap (22) **Taiga Sample ID:** 222316

Client Project: **Sample Type:** water **Received Date:** 12 Aug 02

Location: Pangnirtung Dump Seap **Sampling Date:**

Report Status: **Preliminary** *Approved by:* _____

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Physicals					
Alkalinity		mg/L	0.3	19-Aug-02	14
Colour	280		5	15-Aug-02	
Conductivity, Specific		µS/cm	0.3	19-Aug-02	14
pH		pH units	0.05	19-Aug-02	14
Solids, Total Dissolved	4320	mg/L	10	27-Aug-02	
Solids, Total Suspended	870	mg/L	3	27-Aug-02	
Turbidity		NTU		28-Aug-02	14
Nutrients					
Ammonia as N	379	mg/L	0.005	19-Aug-02	
Biological Oxygen Demand	1070	mg/L	2	12-Aug-02	
Nitrate+Nitrite as N	<0.008	mg/L	0.008	27-Aug-02	
Organic Carbon, Dissolved	1400	mg/L	0.5	22-Aug-02	
Organic Carbon, Total		mg/L	0.5		
Phosphorous, Dissolved	1.35	mg/L	0.004	21-Aug-02	
Phosphorous, Total	11.2	mg/L	0.004	21-Aug-02	

Report Date: Tuesday, November 12, 2002

Taiga Environmental Laboratory
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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office **Attn:** Constantine Bodykevi

Sample ID: PAN-2 Pangnirtung Dump Seap (22) **Taiga Sample ID:** 222316

Major Ions

Calcium	166	mg/L	0.05	21-Aug-02
Chloride	1040	mg/L	0.2	16-Aug-02
Hardness as CaCO3	1140	mg/L	0.17	21-Aug-02
Magnesium	176	mg/L	0.02	21-Aug-02
Potassium	175	mg/L	0.03	20-Aug-02
Silica, Reactive	9.98	mg/L	0.02	19-Aug-02
Sodium	710	mg/L	0.02	20-Aug-02
Sulphate	1060	mg/L	3	14-Aug-02

Data Qualifier Descriptions:

14 Insufficient sample to perform analysis