NWB Annual Report **Year being reported:** 2009

License No: NWB3ARV0308 **Issued Date:** January 4, 2004
Expiry Date: December 31, 2008

Project Name: Arviat Water Use and Waste Disposal

Licensee: Hamlet of Arviat

Mailing Address:
The Hamlet of Arviat
P.O. Box 119
Arviat, Nunavut
X0C 0E0

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):
Nuna Burnside Engineering and Environmental Ltd.
Consulting firm retained by CGS on behalf of the Hamlet of Arviat

General Background Information on the Project (*optional):

License Requirements: the licensee must provide the following information in accordance with

Part B Item 1

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s): Wolf River

Water Quantity:	
81,000	Quantity Allowable Domestic (cu.m)
72,667	Actual Quantity Used Domestic (cu.m)
	Quantity Allowable Drilling (cu.m)
	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [ ] Drill Waste
- [ ] Greywater
- [x] Hazardous
- [ ] Other:

Additional Details:

See attached:
- Attachment 1 - Water use data provided by Hamlet
- Attachment 2 - Photographs from August 2009 site inspection by Jim Walls, P.Geo. of Nuna Burnside on behalf of the Hamlet of Arviat
- Attachment 3 - Sampling results from Hamlet of Arviat/Dillon sampling in September 2009
- Attachment 4 - INAC Inspection Report - August 4, 2009.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Revisions to the Spill Contingency Plan

Other: (see additional details)

Additional Details:

A Spill Contingency Plan has been submitted by Nuna Burnside, as part of Environmental Emergency Contingency Plan for Hamlet of Arviat dated May 2, 2009.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details described below

Additional Details:

Wolf River Water Intake - 61°04'33.10" N, 94°12"03.96 W

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the license are deposited;

Details described below

Additional Details:

Landfill - 61°05'17.33" N, 94°03"10.75 W
Sewage Lagoon - 61°05' 12.51" N, 94°02' 44.61" W

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

INAC Inspection completed on August 4, 2009
Inspection Report received by Licensee on December 7, 2009

Any additional comments or information for the Board to consider

The following documents were prepared for the Hamlet of Arviat by Nuna Burnside and submitted to the NWB in 2009:

- Solid Waste Management Facility Operation and Maintenance (O&M) Plan, Hamlet of Arviat, January 2009
- Environmental Emergency Contingency Plan, Hamlet of Arviat, May 2009
- Water Supply Facility Operation and Maintenance (O&M) Plan, Hamlet of Arviat, May 2009
- Environmental Monitoring Program and Quality Assurance/Quality Control Plan, Hamlet of Arviat, May 2009
- Sewage Treatment Facility Operation and Maintenance (O&M) Plan, Hamlet of Arviat, May 2009.

Date Submitted:	December 31, 2010	
Submitted/Prepared by:	Jim Walls, P.Geo., Nuna Burnside Engineering and Environmental Ltd.	
Contact Information:	**Tel:**	519-941-5331
	Fax:	519-941-8120
	email:	jim.walls@nunaburnside.com

GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	° Deg	' Min	" Sec	° Deg	' Min	" Sec
Wolf River Water Intake	61	4	33.1	94	12	3.96

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	° Deg	' Min	" Sec	° Deg	' Min	" Sec
Sewage Lagoon	61	5	12.51	94	2	44.61
Landfill	61	5	17.33	94	3	10.75
Bulky Metals Waste Area	61	5	45.22	94	3	0.79
Hazardous Waste Storage	61	6	7.86	94	4	5.18
Abandoned Sewage Lagoons	61	5	14.12	94	2	56.96

GPS Locations of Monitoring Stations

Location Description (type)	Latitude			Longitude		
	° Deg	' Min	" Sec	° Deg	' Min	" Sec
ARV-1	61	4	33.30	94	12	4.24
ARV-2	61	5	16.79	94	3	20.61
ARV-3	61	5	13.90	94	2	48.67
ARV-4	61	5	9.97	94	2	46.74

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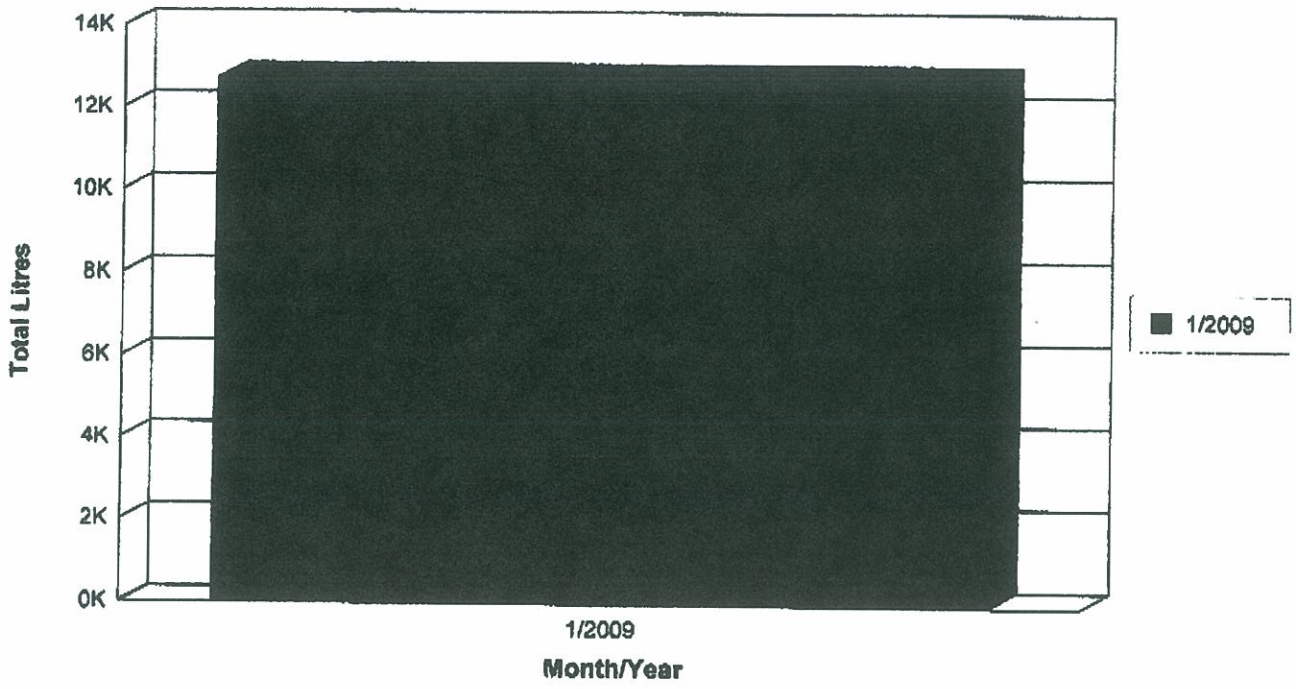
Attachment 1

Water Use Data

Delivery Summary By Month and Year

Printed on: Jan 04 2011 @ 11:35:02AM
Page: 1 of 1

Date Range From:Jan-01-2009 To: Jan-31-2009



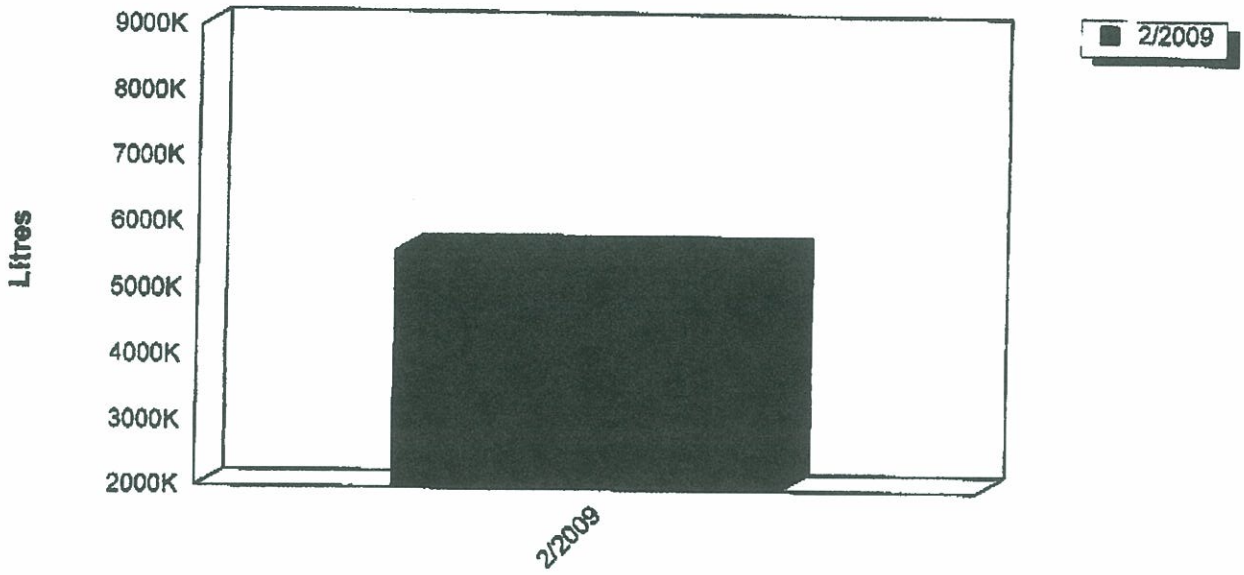
Month / Year	Litres Delivered
January 2009	12,739.90
Grand Total:	**12,739.90**

YTD Water Consumption

Hamlet of Arviat

For the Date Range: From: feb-01-2009 To: feb-28-2009

Printed On: Jan 04 2011 At: 11:38:53 AM Page: 1



YTD Water Consumption - Details

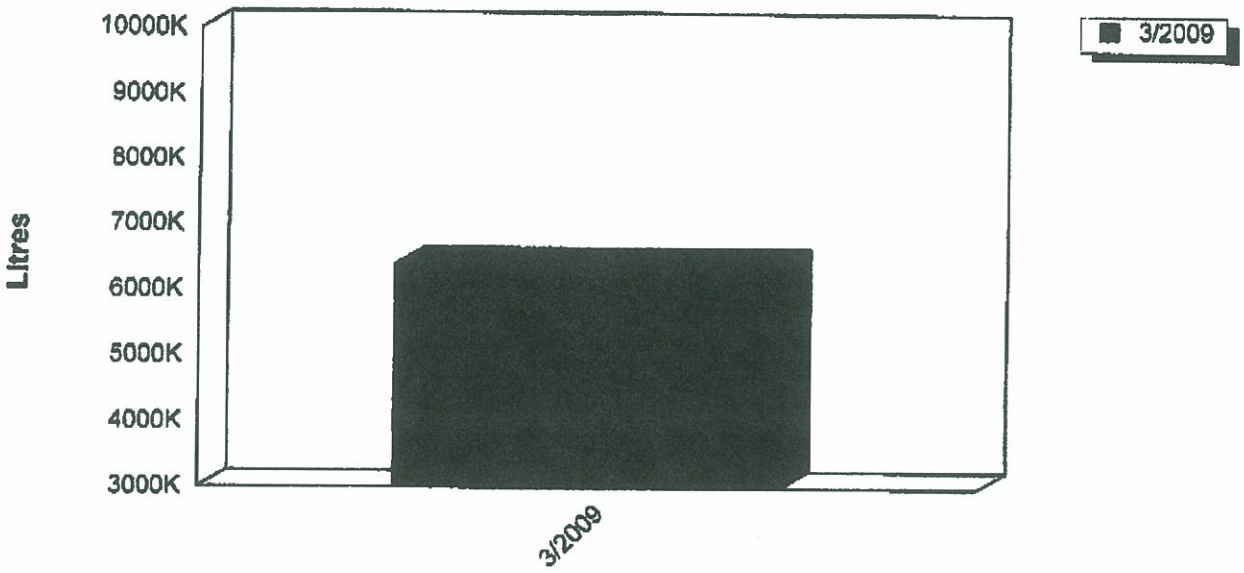
Date	Quantity
February	5,612,822
Grand Total	**5,612,822.30**

YTD Water Consumption

Hamlet of Arviat

For the Date Range: From: mar-01-2009 To: Mar-31-2009

Printed On: Jan 04 2011 At: 11:39:29 AM Page: 1



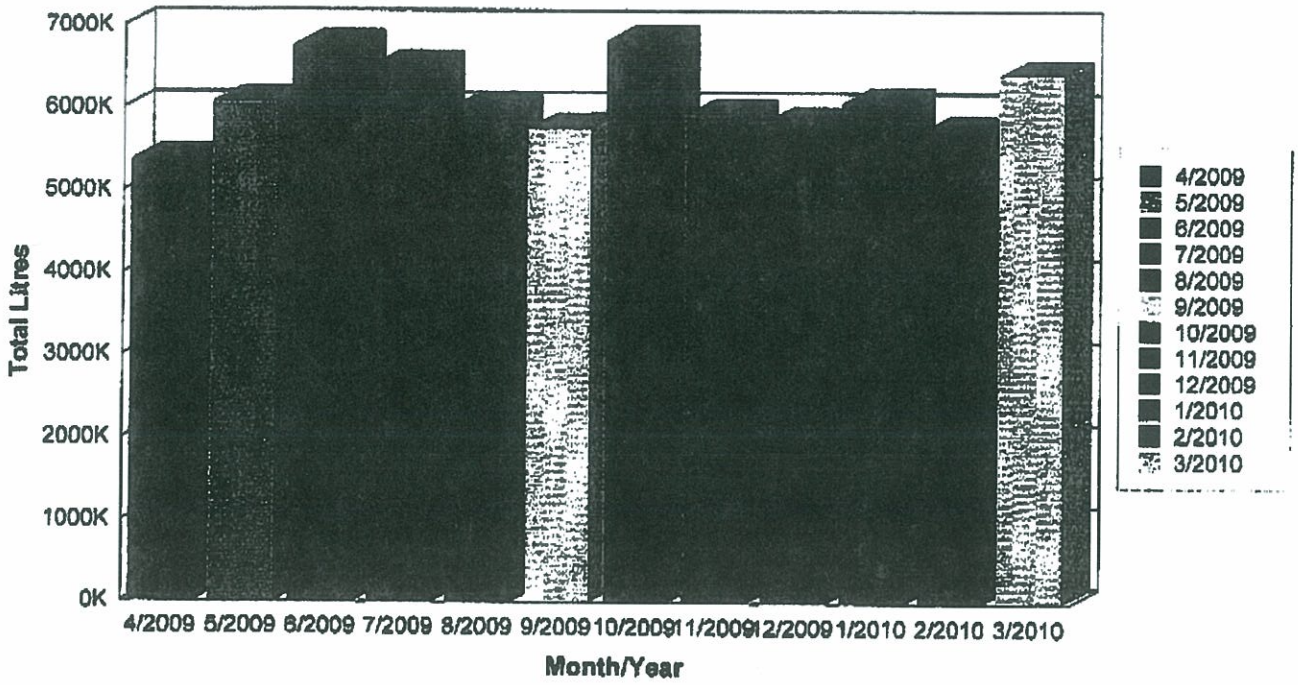
YTD Water Consumption - Details

Date	Quantity
March	6,401,119
Grand Total	**6,401,119.01**

Delivery Summary By Month and Year

Printed on: Nov 12 2010 @ 1:39:37PM
Page: 1 of 1

Date Range From:Apr-01-2009 To: Mar-31-2010



Month / Year	09/10 Litres Delivered	2010/11
April 2009	5,372,241.30	2010 — 5,778,808.40
May 2009	6,065,792.90	- 2010 - 5,995,218.90
June 2009	6,754,762.60	-2010 - 5,979,411.50
July 2009	6,505,955.20	-2010 - 6,318,159.30
August 2009	5,981,373.20	- 2010 - 6,762,343.00
September 2009	5,750,235.70	- 2010 - 6,351,097.80
October 2009	6,819,554.60	-2010 - 6,419,234.39
November 2009	5,914,646.60	
December 2009	5,819,816.50	
January 2010	6,062,290.70	
February 2010	5,716,551.20	
March 2010	6,406,867.80	
Grand Total:	**73,170,088.30**	

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Attachment 2
Photographs

Solid Waste Disposal Facility – Landfill Date: 8/21/2009

Solid Waste Disposal Facility – Landfill Date: 8/21/2009
Description: Filled and covered area of landfill.

Solid Waste Disposal Facility – Bulky Metals Waste Area
Date: 8/21/2009

Solid Waste Disposal Facility – Bulky Metals Waste Area
Date: 8/21/2009

Sewage Disposal Facility - Sewage Lagoon Date: 8/21/2009

Sewage Disposal Facility - Truck off load point at Sewage Lagoon
Date: 8/21/2009

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Attachment 3
Sampling Results

Maxxam Analytics

Your Project #: 09-2156, ARVIAT WATER LISENCE
Site: ARVIAT, NU

Attention: JENNIFER SPENCER
DILLON CONSULTING LTD.
BOX 1409
SUITE 303, 4920 - 47th STREET
YELLOWKNIFE, NT
CANADA X1A ZP1

Report Date: 2009/11/12
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A948022
Received: 2009/09/03, 11:15

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Biochemical Oxygen Demand	2	2009/09/08	2009/09/13	EIND SOP-00010	SM 5210 B
Total Coliforms and E.Coli	2	2009/09/03	2009/09/04	EIND SOP-00013	SM 9223 A,B
Conductivity	1	N/A	2009/09/05	EENVSOP-00054	SM 2510-B
Conductivity	1	N/A	2009/09/09	EENVSOP-00054	SM 2510-B
Hardness	2	N/A	2009/09/11	CAL WI-00053	AEMM, Method 423
Mercury (Total)	2	2009/09/04	2009/09/04	EENVSOP-00031	EPA 245.1
Elements by ICP - Dissolved	2	N/A	2009/09/10	CAL SOP-00192	EPA SW846 6010B
Elements by ICP - Total	2	2009/09/04	2009/09/05	CAL SOP-00192	EPA SW846 6010B
Elements by ICPMS - Total	2	2009/09/04	2009/09/04	CAL SOP-00191	EPA SW-846 6020A
Ammonia-N (Total)	2	N/A	2009/09/04	EENVSOP-00058	EPA 350.1
Nitrate and Nitrite	2	N/A	2009/09/06		
Nitrate + Nitrite-N (calculated)	2	N/A	2009/09/06		
Nitrogen, (Nitrite, Nitrate) by IC	2	N/A	2009/09/06	CAL SOP-00060	SM 4110-B
Oil & Grease (sheen)	2	2009/09/08	2009/09/08	EENVSOP-00121 V.1	
pH	1	N/A	2009/09/04	EENVSOP-00054	SM 4500-H B
pH	1	N/A	2009/09/09	EENVSOP-00054	SM 4500-H B
Phenols (4-AAP)	2	N/A	2009/09/08	EENVSOP-00061	EPA 420.2
Sulphate by Automated Colourimetry	2	N/A	2009/09/04	EENVSOP-00057	EPA 375.4
Total Suspended Solids (NFR)	2	2009/09/04	2009/09/04	EENVSOP-00073	SM 2540 D

Encryption Key

signature

Tanya Eugine
12 Nov 2009 15:03:19 -07:00

Please direct all qu s Certificate of Analysis to your Project Manager.

JEREMY WAKARUK, B.Sc., Senior Project Manager
Email: jwakaruk@maxxamanalytics.com
Phone# (780) 577-7105 Ext:7105

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section

Maxxam Analytics

Your Project #: 09-2156, ARVIAT WATER LISENCE
Site: ARVIAT, NU

Attention: JENNIFER SPENCER
DILLON CONSULTING LTD.
BOX 1409
SUITE 303, 4920 - 47th STREET
YELLOWKNIFE, NT
CANADA X1A ZP1

Report Date: 2009/11/12
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Analytics

Maxxam Job #: A948022
Report Date: 2009/11/12

DILLON CONSULTING LTD.
Client Project #: 09-2156, ARVIAT WATER LISENCE
Site Reference: ARVIAT, NU
Sampler Initials: JS

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		Q58298			Q58358		
Sampling Date		2009/09/02 8:00			2009/09/02 8:00		
	Units	**ARV-2 (SOLID WASTE LEACHATE)**	**RDL**	**QC Batch**	**ARV-4 (SEWAGE EFFLUENT)**	**RDL**	**QC Batch**
CONVENTIONALS							
Total Ammonia (N)	mg/L	12	0.05	3395866	60	0.05	3395866
Calculated Parameters							
Hardness (CaCO3)	mg/L	830	0.5	3402907	76	0.5	3402907
Dissolved Nitrate (NO3)	mg/L	0.89	0.01	3395495	0.6	0.1	3395495
Nitrate plus Nitrite (N)	mg/L	0.26	0.003	3395496	0.14	0.03	3395496
Dissolved Nitrite (NO2)	mg/L	0.20	0.01	3395495	<0.1	0.1	3395495
Demand Parameters							
Biochemical Oxygen Demand	mg/L	10	4	3399942	38	20	3399942
Misc. Inorganics							
Conductivity	uS/cm	2900	1	3402930	1100	1	3397625
pH	N/A	7.89	N/A	3402923	7.27	N/A	3396280
Total Suspended Solids	mg/L	13	1	3396032	74	1	3396032
Anions							
Dissolved Sulphate (SO4)	mg/L	330 (1)	30	3396099	4	1	3396099
Microbiological Param.							
E.Coli DST	mpn/100mL	78	1	3396879	19900	1	3396879
Total Coliforms DST	mpn/100mL	>24200 (2)	1	3396879	>24200 (2)	1	3396879
Nutrients							
Dissolved Nitrate (N)	mg/L	0.20	0.003	3399518	0.14 (3)	0.03	3399518
Dissolved Nitrite (N)	mg/L	0.061	0.003	3399518	<0.03 (3)	0.03	3399518
Misc. Organics							
Phenols	mg/L	0.004	0.002	3401804	0.003	0.002	3401804
Physical Properties							
Visible Sheen	N/A	No	N/A	3400252	No	N/A	3400252

RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Sample diluted 10X
(3) Detection limits raised due to matrix interference

Maxxam Analytics

Maxxam Job #: A948022
Report Date: 2009/11/12

DILLON CONSULTING LTD.
Client Project #: 09-2156, ARVIAT WATER LISENCE
Site Reference: ARVIAT, NU
Sampler Initials: JS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		Q58298		Q58358		
Sampling Date		2009/09/02 8:00		2009/09/02 8:00		
	Units	**ARV-2 (SOLID WASTE LEACHATE)**	**QC Batch**	**ARV-4 (SEWAGE EFFLUENT)**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	<0.04	3404493	<0.04	0.04	3404493
Total Arsenic (As)	mg/L	0.0039	3396755	0.0087	0.0002	3396755
Dissolved Barium (Ba)	mg/L	0.04	3404493	<0.01	0.01	3404493
Dissolved Boron (B)	mg/L	1.2	3404493	0.17	0.02	3404493
Total Cadmium (Cd)	mg/L	0.000082	3396755	0.00011	0.000005	3396755
Dissolved Calcium (Ca)	mg/L	240	3404493	15	0.3	3404493
Total Calcium (Ca)	mg/L	230	3397291	16	0.3	3397291
Dissolved Chromium (Cr)	mg/L	<0.01	3404493	<0.01	0.01	3404493
Total Chromium (Cr)	mg/L	<0.01	3397291	<0.01	0.01	3397291
Total Copper (Cu)	mg/L	0.0012	3396755	0.039	0.0002	3396755
Dissolved Iron (Fe)	mg/L	0.25	3404493	0.87	0.06	3404493
Total Iron (Fe)	mg/L	0.53	3397291	6.9	0.06	3397291
Total Lead (Pb)	mg/L	<0.0002	3396755	0.0014	0.0002	3396755
Dissolved Lithium (Li)	mg/L	0.03	3404493	<0.02	0.02	3404493
Dissolved Magnesium (Mg)	mg/L	56	3404493	9.3	0.2	3404493
Total Magnesium (Mg)	mg/L	58	3397291	9.6	0.2	3397291
Dissolved Manganese (Mn)	mg/L	0.70	3404493	0.42	0.004	3404493
Total Nickel (Ni)	mg/L	0.0059	3396755	0.0072	0.0005	3396755
Dissolved Phosphorus (P)	mg/L	1.1	3404493	2.1	0.1	3404493
Dissolved Potassium (K)	mg/L	52	3404493	22	0.3	3404493
Total Potassium (K)	mg/L	52	3397291	22	0.3	3397291
Dissolved Silicon (Si)	mg/L	6.5	3404493	6.1	0.1	3404493
Dissolved Sodium (Na)	mg/L	310	3404493	95	0.5	3404493
Total Sodium (Na)	mg/L	300	3397291	93	0.5	3397291
Dissolved Strontium (Sr)	mg/L	1.6	3404493	0.10	0.02	3404493
Dissolved Sulphur (S)	mg/L	110	3404493	3.4	0.2	3404493
Total Zinc (Zn)	mg/L	0.010	3396755	0.028	0.003	3396755
Low Level Elements						
Total Mercury (Hg)	ug/L	0.010	3511939	<0.005	0.005	3390793

RDL = Reportable Detection Limit

Maxxam Analytics

Maxxam Job #: A948022
Report Date: 2009/11/12

DILLON CONSULTING LTD.
Client Project #: 09-2156, ARVIAT WATER LISENCE
Site Reference: ARVIAT, NU
Sampler Initials: JS

General Comments

This report is being reissued due to an error identified by the lab associated with the mercury data for sample Q58298. The original mercury result reported for this sample was biased low by 50%.

Results relate only to the items tested.

Maxxam Analytics

DILLON CONSULTING LTD.
Attention: JENNIFER SPENCER
Client Project #: 09-2156, ARVIAT WATER LISENCE
P.O. #:
Site Reference: ARVIAT, NU

Quality Assurance Report

Maxxam Job Number: EA948022

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3390793 RB3	Calibration Check	Total Mercury (Hg)	2009/09/02		101	%	85 - 115
	Matrix Spike	Total Mercury (Hg)	2009/09/02		102	%	85 - 115
	Spiked Blank	Total Mercury (Hg)	2009/09/02		98	%	85 - 115
	Method Blank	Total Mercury (Hg)	2009/09/02	<0.005		ug/L	
	RPD	Total Mercury (Hg)	2009/09/02	NC		%	25
3395866 AL2	Matrix Spike	Total Ammonia (N)	2009/09/04		100	%	80 - 120
	Spiked Blank	Total Ammonia (N)	2009/09/04		101	%	86 - 110
	Method Blank	Total Ammonia (N)	2009/09/04	<0.05		mg/L	
	RPD	Total Ammonia (N)	2009/09/04	NC		%	20
3396032 RW3	Matrix Spike	Total Suspended Solids	2009/09/04		108	%	80 - 120
	Spiked Blank	Total Suspended Solids	2009/09/04		98	%	80 - 120
	Method Blank	Total Suspended Solids	2009/09/04	<1		mg/L	
	RPD	Total Suspended Solids	2009/09/04	NC (1)		%	20
3396099 MKA	Matrix Spike	Dissolved Sulphate (SO4)	2009/09/04		N/C	%	80 - 120
	Spiked Blank	Dissolved Sulphate (SO4)	2009/09/04		105	%	80 - 120
	Method Blank	Dissolved Sulphate (SO4)	2009/09/04	<1		mg/L	
	RPD	Dissolved Sulphate (SO4)	2009/09/04	5.4 (2)		%	20
3396280 SB8	Calibration Check	pH	2009/09/04		100	%	97 - 103
	RPD	pH	2009/09/04	0.03		%	5
3396755 PC1	Calibration Check	Total Arsenic (As)	2009/09/04		96	%	80 - 120
		Total Cadmium (Cd)	2009/09/04		88	%	80 - 120
		Total Chromium (Cr)	2009/09/04		83	%	80 - 120
		Total Copper (Cu)	2009/09/04		83	%	80 - 120
		Total Lead (Pb)	2009/09/04		88	%	80 - 120
		Total Nickel (Ni)	2009/09/04		85	%	80 - 120
		Total Zinc (Zn)	2009/09/04		86	%	80 - 120
	Matrix Spike	Total Arsenic (As)	2009/09/04		101	%	80 - 120
		Total Cadmium (Cd)	2009/09/04		107	%	80 - 120
		Total Chromium (Cr)	2009/09/04		100	%	80 - 120
		Total Copper (Cu)	2009/09/04		100	%	80 - 120
		Total Lead (Pb)	2009/09/04		105	%	80 - 120
		Total Nickel (Ni)	2009/09/04		102	%	80 - 120
		Total Zinc (Zn)	2009/09/04		105	%	80 - 120
	Method Blank	Total Arsenic (As)	2009/09/04	<0.0002		mg/L	
		Total Cadmium (Cd)	2009/09/04	0.000008, RDL=0.000005		mg/L	
		Total Chromium (Cr)	2009/09/04	<0.001		mg/L	
		Total Copper (Cu)	2009/09/04	<0.0002		mg/L	
		Total Lead (Pb)	2009/09/04	<0.0002		mg/L	
		Total Nickel (Ni)	2009/09/04	<0.0005		mg/L	
		Total Zinc (Zn)	2009/09/04	<0.003		mg/L	
	RPD	Total Arsenic (As)	2009/09/04	NC		%	20
		Total Chromium (Cr)	2009/09/04	NC		%	20
		Total Copper (Cu)	2009/09/04	2.2		%	20
		Total Lead (Pb)	2009/09/04	1.9		%	20
		Total Nickel (Ni)	2009/09/04	1.0		%	20
		Total Zinc (Zn)	2009/09/04	NC		%	20
3396879 JA6	Method Blank	E.Coli DST	2009/09/04	<1		mpn/100mL	
		Total Coliforms DST	2009/09/04	<1		mpn/100mL	
3397291 RI3	Calibration Check	Total Calcium (Ca)	2009/09/05		97	%	80 - 120
		Total Chromium (Cr)	2009/09/05		93	%	80 - 120
		Total Iron (Fe)	2009/09/05		93	%	80 - 120
		Total Magnesium (Mg)	2009/09/05		98	%	80 - 120
		Total Potassium (K)	2009/09/05		99	%	80 - 120
		Total Sodium (Na)	2009/09/05		100	%	80 - 120
	Matrix Spike	Total Calcium (Ca)	2009/09/05		93	%	80 - 120

Maxxam Analytics

DILLON CONSULTING LTD.
Attention: JENNIFER SPENCER
Client Project #: 09-2156, ARVIAT WATER LISENCE
P.O. #:
Site Reference: ARVIAT, NU

Quality Assurance Report (Continued)

Maxxam Job Number: EA948022

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3397291 RI3	Matrix Spike	Total Chromium (Cr)	2009/09/05		92	%	80 - 120
		Total Iron (Fe)	2009/09/05		NC	%	80 - 120
		Total Magnesium (Mg)	2009/09/05		95	%	80 - 120
		Total Potassium (K)	2009/09/05		98	%	80 - 120
		Total Sodium (Na)	2009/09/05		96	%	80 - 120
	Method Blank	Total Calcium (Ca)	2009/09/05	<0.3		mg/L	
		Total Chromium (Cr)	2009/09/05	<0.01		mg/L	
		Total Iron (Fe)	2009/09/05	<0.06		mg/L	
		Total Magnesium (Mg)	2009/09/05	<0.2		mg/L	
		Total Potassium (K)	2009/09/05	<0.3		mg/L	
		Total Sodium (Na)	2009/09/05	<0.5		mg/L	
	RPD	Total Calcium (Ca)	2009/09/05	0.8		%	20
		Total Iron (Fe)	2009/09/05	0.3		%	20
		Total Magnesium (Mg)	2009/09/05	1.6		%	20
		Total Potassium (K)	2009/09/05	1		%	20
		Total Sodium (Na)	2009/09/05	1.4		%	20
3397625 SB8	Calibration Check	Conductivity	2009/09/05		97	%	80 - 120
	Method Blank	Conductivity	2009/09/04	2, RDL=1		uS/cm	
	RPD	Conductivity	2009/09/05	1		%	20
3399518 JQ	Calibration Check	Dissolved Nitrate (N)	2009/09/06		101	%	90 - 110
		Dissolved Nitrite (N)	2009/09/06		100	%	90 - 110
	Matrix Spike	Dissolved Nitrate (N)	2009/09/06		NC	%	80 - 120
		Dissolved Nitrite (N)	2009/09/06		100	%	80 - 120
	Method Blank	Dissolved Nitrate (N)	2009/09/06	<0.003		mg/L	
		Dissolved Nitrite (N)	2009/09/06	<0.003		mg/L	
	RPD	Dissolved Nitrate (N)	2009/09/06	1.4 (3)		%	20
		Dissolved Nitrite (N)	2009/09/06	0.2		%	20
3399942 NM3	Calibration Check	Biochemical Oxygen Demand	2009/09/13		85	%	81 - 119
	Method Blank	Biochemical Oxygen Demand	2009/09/13	<2		mg/L	
3401804 YY	Matrix Spike	Phenols	2009/09/08		99	%	80 - 120
	Spiked Blank	Phenols	2009/09/08		96	%	80 - 120
	Method Blank	Phenols	2009/09/08	<0.002		mg/L	
	RPD	Phenols	2009/09/08	NC		%	20
3402923 SB8	Calibration Check	pH	2009/09/09		99	%	97 - 103
	RPD	pH	2009/09/09	0.2		%	5
3402930 SB8	Calibration Check	Conductivity	2009/09/09		104	%	80 - 120
	Method Blank	Conductivity	2009/09/09	<1		uS/cm	
	RPD	Conductivity	2009/09/09	0.9		%	20
3404493 SG8	Calibration Check	Dissolved Aluminum (Al)	2009/09/10		99	%	80 - 120
		Dissolved Barium (Ba)	2009/09/10		95	%	80 - 120
		Dissolved Boron (B)	2009/09/10		99	%	80 - 120
		Dissolved Calcium (Ca)	2009/09/10		100	%	80 - 120
		Dissolved Chromium (Cr)	2009/09/10		94	%	80 - 120
		Dissolved Iron (Fe)	2009/09/10		90	%	80 - 120
		Dissolved Lithium (Li)	2009/09/10		95	%	80 - 120
		Dissolved Magnesium (Mg)	2009/09/10		99	%	80 - 120
		Dissolved Manganese (Mn)	2009/09/10		99	%	80 - 120
		Dissolved Phosphorus (P)	2009/09/10		108	%	80 - 120
		Dissolved Potassium (K)	2009/09/10		99	%	80 - 120
		Dissolved Silicon (Si)	2009/09/10		95	%	80 - 120
		Dissolved Sodium (Na)	2009/09/10		97	%	80 - 120
		Dissolved Strontium (Sr)	2009/09/10		95	%	80 - 120
	Matrix Spike	Dissolved Aluminum (Al)	2009/09/10		80	%	80 - 120
		Dissolved Barium (Ba)	2009/09/10		84	%	80 - 120
		Dissolved Boron (B)	2009/09/10		84	%	80 - 120

Maxxam Analytics

DILLON CONSULTING LTD.
Attention: JENNIFER SPENCER
Client Project #: 09-2156, ARVIAT WATER LISENCE
P.O. #:
Site Reference: ARVIAT, NU

Quality Assurance Report (Continued)

Maxxam Job Number: EA948022

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3404493 SG8	Matrix Spike	Dissolved Calcium (Ca)	2009/09/10		NC	%	80 - 120
		Dissolved Lithium (Li)	2009/09/10		NC	%	80 - 120
		Dissolved Magnesium (Mg)	2009/09/10		NC	%	80 - 120
		Dissolved Manganese (Mn)	2009/09/10		82	%	80 - 120
		Dissolved Phosphorus (P)	2009/09/10		102	%	80 - 120
		Dissolved Potassium (K)	2009/09/10		96	%	80 - 120
		Dissolved Silicon (Si)	2009/09/10		86	%	80 - 120
		Dissolved Sodium (Na)	2009/09/10		NC	%	80 - 120
		Dissolved Strontium (Sr)	2009/09/10		NC	%	80 - 120
	Spiked Blank	Dissolved Sulphur (S)	2009/09/10		106	%	80 - 120
	Method Blank	Dissolved Aluminum (Al)	2009/09/10	<0.04		mg/L	
		Dissolved Barium (Ba)	2009/09/10	<0.01		mg/L	
		Dissolved Boron (B)	2009/09/10	<0.02		mg/L	
		Dissolved Calcium (Ca)	2009/09/10	<0.3		mg/L	
		Dissolved Chromium (Cr)	2009/09/10	<0.01		mg/L	
		Dissolved Iron (Fe)	2009/09/10	<0.06		mg/L	
		Dissolved Lithium (Li)	2009/09/10	<0.02		mg/L	
		Dissolved Magnesium (Mg)	2009/09/10	<0.2		mg/L	
		Dissolved Manganese (Mn)	2009/09/10	<0.004		mg/L	
		Dissolved Phosphorus (P)	2009/09/10	<0.1		mg/L	
		Dissolved Potassium (K)	2009/09/10	<0.3		mg/L	
		Dissolved Silicon (Si)	2009/09/10	<0.1		mg/L	
		Dissolved Sodium (Na)	2009/09/10	<0.5		mg/L	
		Dissolved Strontium (Sr)	2009/09/10	<0.02		mg/L	
		Dissolved Sulphur (S)	2009/09/10	<0.2		mg/L	
	RPD	Dissolved Calcium (Ca)	2009/09/10	1.5		%	20
		Dissolved Magnesium (Mg)	2009/09/10	0.2 (2)		%	20
		Dissolved Potassium (K)	2009/09/10	1.4		%	20
		Dissolved Sodium (Na)	2009/09/10	0.7 (2)		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Detection limit raised based on sample volume used for analysis.
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.
(3) Detection limits raised due to matrix interference

Maxxam Analytics

Validation Signature Page

Maxxam Job #: A948022

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

DINA TLEUGABULOVA, Ph.D., Scientific Specialist

DIANE ZACHARKIW, Scientific Specialist

JAY ABBOTT, Bioassay Supervisor

JIM TJATHAS, Analyst 2

ROBERT VIVIAN, Senior Analyst

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

BURNSIDE

An Aboriginal Owned Company

Attachment 4

INAC Inspection Report

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

Inspection Report

License #: **3BM-ARV**

Inspector: **A. Keim**

CIDMS # **370730**

Client	Municipality of Arviat		
Mailing Address	Box 150		
Inspection site location	Arviat , Nunavut		
Contact name	Ed Murphy	Title	A/ Hamlet Foreman
Last inspection date	July 31st 2008		
Inspection start date	August 4 2009		
Region	Kivalliq		

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

INAC, Nunavut District
P.O. Box 100
Building 918
Iqaluit, NU, X0A 0H0

Submitted Via E-Mail
Our File: 3BM-ARV0308 EXPIRED
Your File:_____
CIDM # 370730

December 7, 2009

Ed Murphy
A/ Hamlet Foreman
Box 150
Arviat, Nunavut
XOC OEO

RE: August 4, 2009 Municipal Water Licence Inspection 3BM-ARV0308 – Expired

The following inspection report was generated on an inspection conducted to determine compliance with the terms and conditions of the water license (expired) issued to the Municipality of Arviat by the Nunavut Water Board (NWB).

The report references the applicable parts of the current Water License (3BM- ARV0308) and the findings observed under each of those Parts. During the writing of this report a review was undertaken of the documents located on the Nunavut Water Board's FTP site.

It is noted that on January 5th, 2009 the Nunavut Water Board received an application from the Licensee for a Type A water license for the community.

The Inspector would like to thank Mr. Ed Murphy, the acting hamlet foreman during the period of the Inspection, for taking the time to meet and accompany the Inspector during the Inspection.

N.B: It was noted by the Inspector that the Municipality of Arviat does not provide the potable water services within the community. Instead there is a Government of Nunavut, Department of Community and Government Services employee who maintains the system within the community. The Inspector calls on the board to provide clarification as to why the Municipality has this service included within the scope of the issued license. If the Government of Nunavut is responsible for the operations and maintenance of the Potable Water delivery service and infrastructure a license should, as past practice would dictate, be issued in the name of the Government of Nunavut.

Previous findings:
The community of Arviat's water license (3BM-ARV0308) expired on December 31st, 2008. An application for renewal for the expired Type B license was submitted by Nuna Burnside, on behalf of the Hamlet of Arviat.

The application was found to be incomplete by the Nunavut Water Board and a request for missing information was sent out on May 15th, 2009. Additionally is was noted by the Nunavut Water Board that as per the information provided in the application the required license now falls into a Type A category and that would be how the Board would be proceeding on the file. The file is currently being held by the board pending the submission of the required information to enable them to proceed with the application.

Currently the Hamlet of Arviat is unlicensed.

Issues noted in previous Inspections;

- Sewage treatment in the community is below an acceptable standard.
- Failure to collect and submit for analysis samples as required under the Monitoring Program.
- Failure to undertake such works as directed to prevent the continued erosion of the lagoon system into waters downstream.
- Failure to undertake such works as required for control of the spread of runoff from the waste management area into the wetlands area below the lagoon system.
- Failure to develop and submit an Operation and Maintenance Manual, as associated plans.
- Failure to submit as required all annual reports (it is noted a 2008 Annual report was submitted).
- Failure to submit the required abandonment and restoration plan.
- Failure to provide clarification on the roles and responsibilities of the licensee and the government of Nunavut in relation to Potable water treatment and delivery in the community.
- Failure to develop and submit a Quality Assurance/ Quality Control Plan.

During the period of the 2009 Inspection the following issues were identified by the Inspector;

- Failure to file a complete 2008 annual report. (report was found to be incomplete)
- Failure to take steps to prevent and control the migration off site of runoff from the Solid Waste Management Facility.
- Failure to comply with the monitoring program by collecting samples for analysis.
- Failure to undertake such works as is required to restore/ remediate the two currently abandoned Sewage lagoons.
- Failure to address the continued seepage and release of contact water from the old and now abandoned lagoons.

Samples collected from water outside but adjacent to the lagoon by the Inspector returned the following results;

Parameter:	**Result**	**NWTELSD[1] Criteria**
Manganese	225 µg/L	50 µg/L
Iron	2860 µg/L	300 µg/L

(It was noted by the Inspector that the samples collected outside the lagoon had an obvious odour of sewage however samples did not arrive at the lab within the required time limit for testing for fecal coliform colonies.

Samples collected from water from Bulk Metals Waste Management Area by the Inspector returned the following results;

Parameter:	**Result**	**PAL[2] (CCME)**
Iron	385 µg/L	300 µg/L
Manganese	658 µg/L	50 µg/L

Non-Compliance: Issues identified during the August 4th, 2009 inspection and/or review of relevant material

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[1] NWT Limits for Effluent Parameters for specific Discharges Criteria

[2] Protection of Aquatic Life– Canadian Council of Ministers of the Environment – Canadian Environmental Quality Guidelines

Issues with a known or anticipated human health impacts;

- Failure to address concerns identified by the Inspector regarding effluent leaking from the Sewage Lagoon.
- Failure to address concerns identified by the Inspector concerning Water Management within the Waste Management areas.
- Failure to collect and submit for analysis the samples required on the Monitoring Program.

Issues where there is a known or anticipated environmental impairment;

- Failure to take steps to control and mitigate runoff from the Solid Waste Management Facility.
- Failure to develop a Solid Waste Disposal Operations and Maintenance Manual.

Issues where there is a known or suspected violation of a requirement of the Water License;

- Failure to submit required Annual reports. (Part B (1 i through viii)) (it is noted that an Annual report for 2008 was submitted with the renewal application to the Nunavut Water Board and was found to be incomplete)
- Failure to maintain the appropriate Surveillance Network Program. (SNP)(Part B (5))
- Failure to notify the Inspector prior to decant as required. (Part D(4))
- Failure to identify and submit the Final discharge points for the current lagoon system. (Part D (8))
- Failure to submit as required documents and drawings properly certified of the "new lagoon" as required under (Part E (4)).
- Failure to submit as required the appropriate Abandonment and Restoration Plans. (Part G (1))
- Failure to implement the requirements listed under the Monitoring Program. (Part H)
- Failure to development and submit a QA/QC Plan. Part H (6))
- Failure to Maintain the Sewage lagoon to the satisfaction of the inspector. (Part D(5))

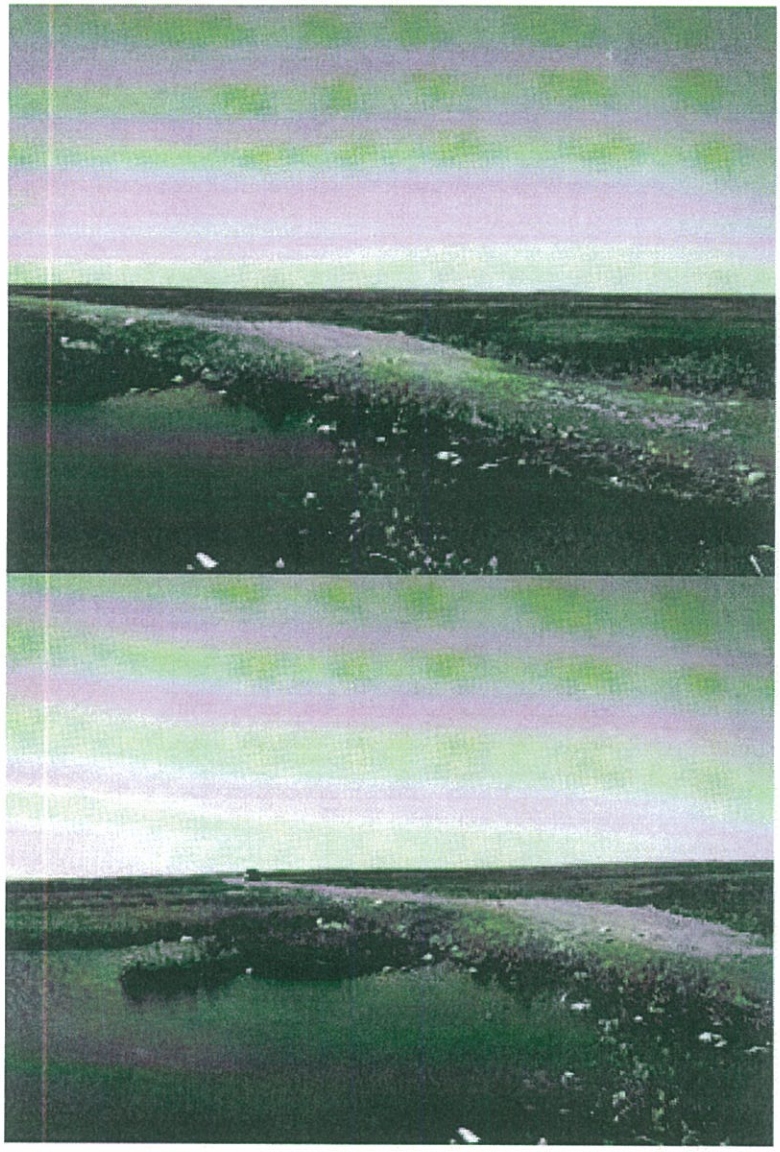
The Municipality of Arviat continues to operate in Non-conformity with those terms and conditions of the Water License issued in 2003 and now expired. The licensee and the Government of Nunavut are strongly encouraged to contact the Nunavut Water Board and the Inspector to determine next steps as are required to achieve and maintain compliance with a license and the Act.

A. Keim
Inspector's Name

Inspector's Signature

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

Water License Inspection Photos Arviat August 4 2009 CIDM #394728



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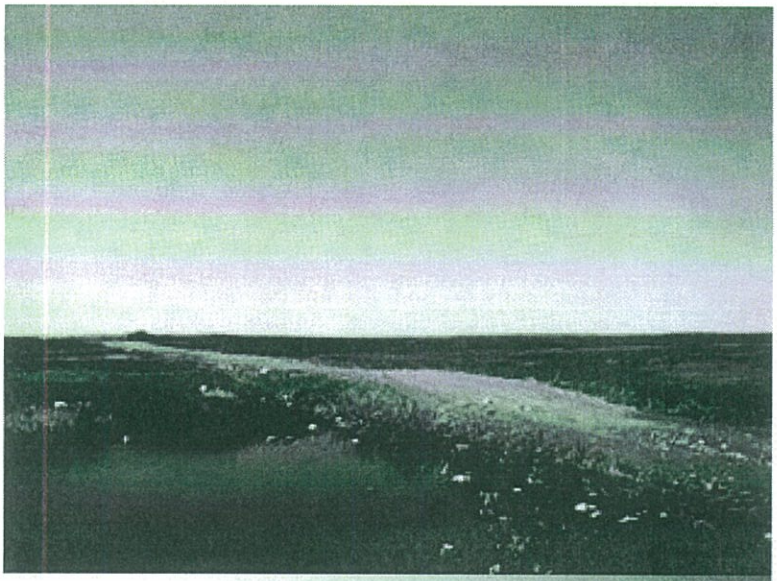
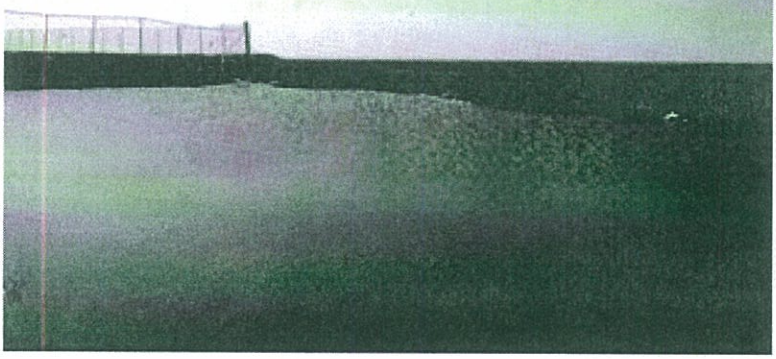
Water License Inspection Photos Arviat August 4 2009 CIDM #394728





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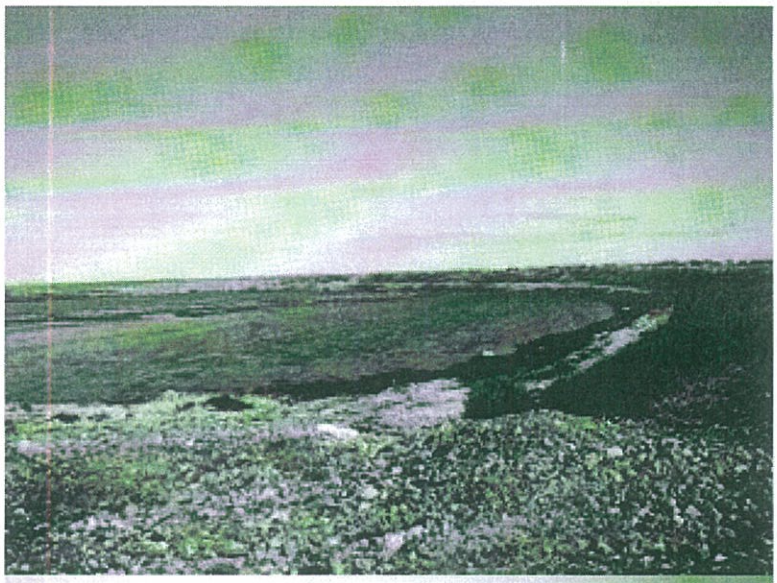

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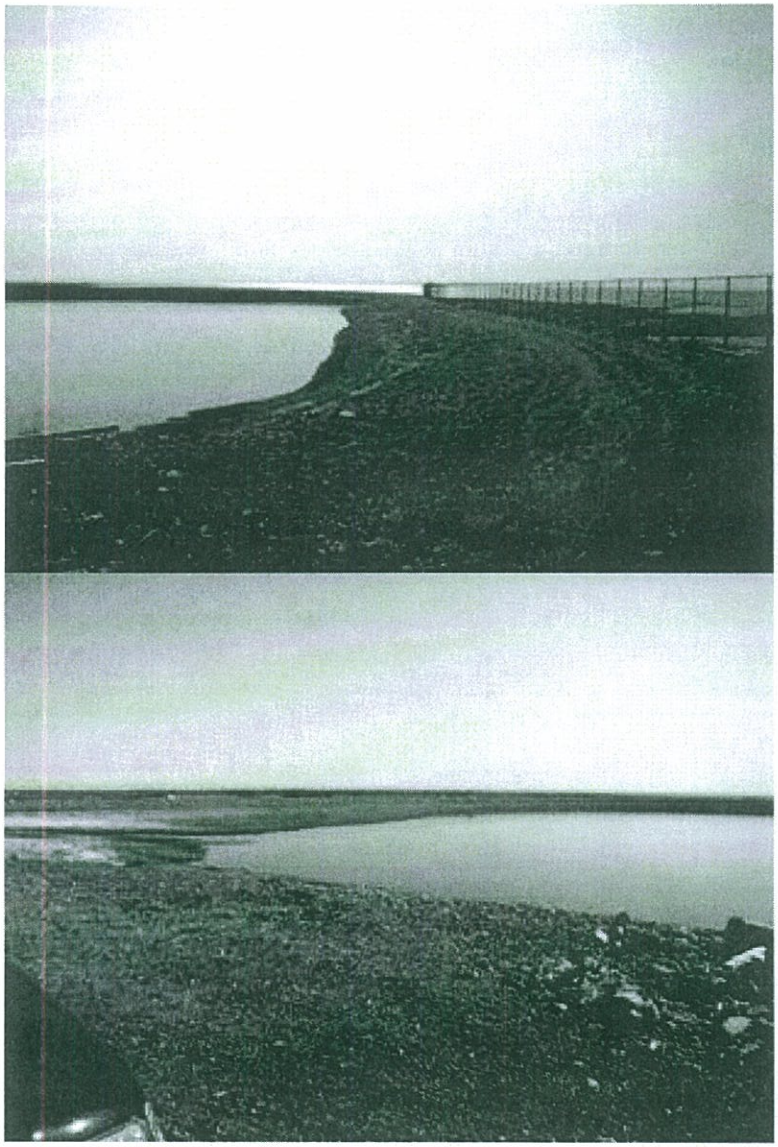

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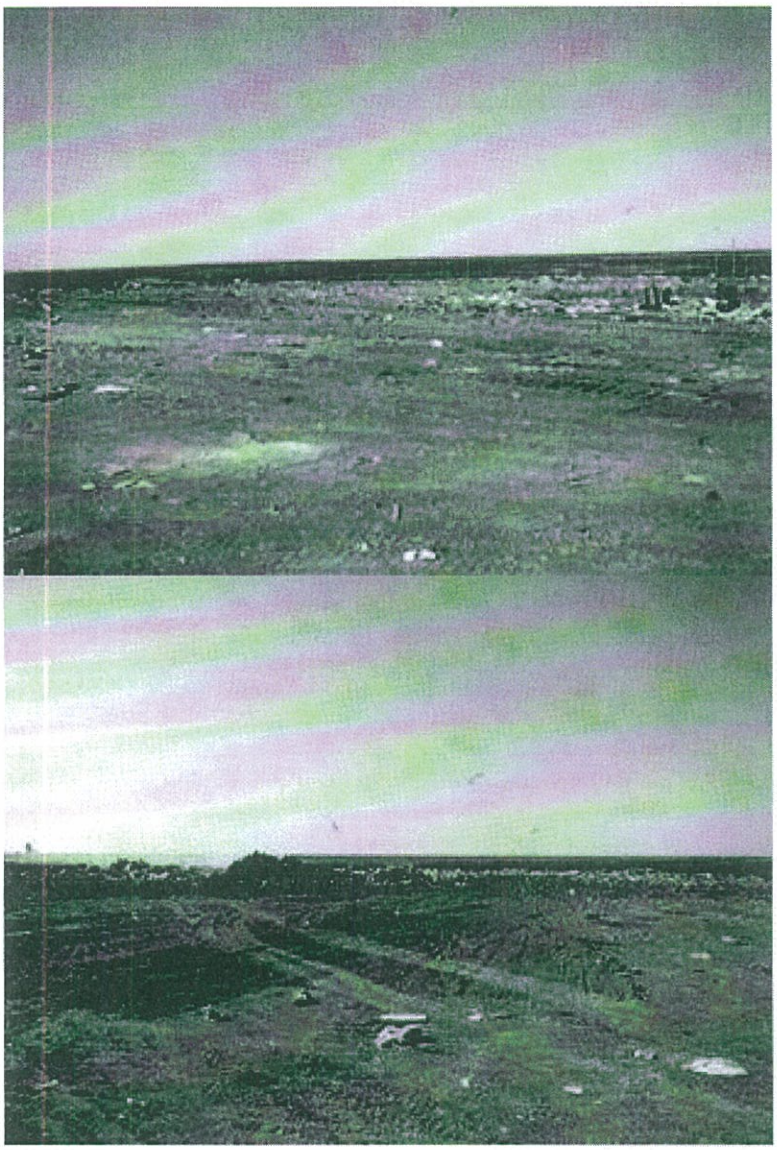

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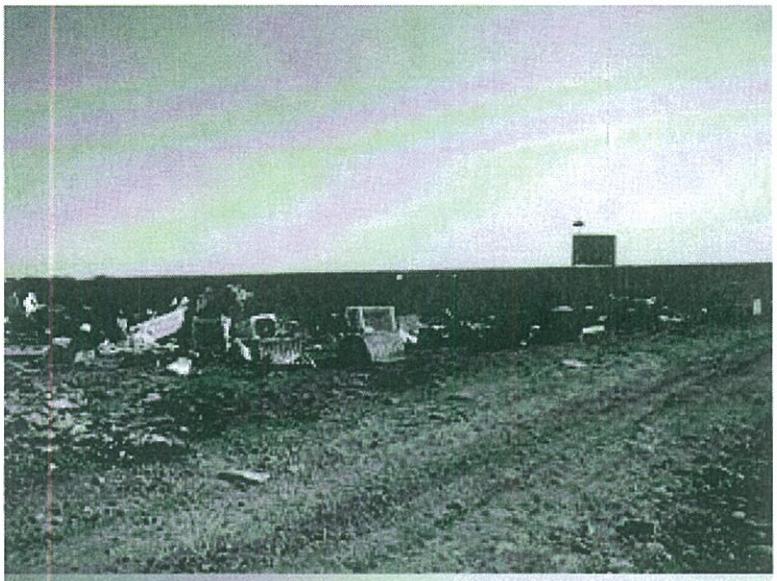

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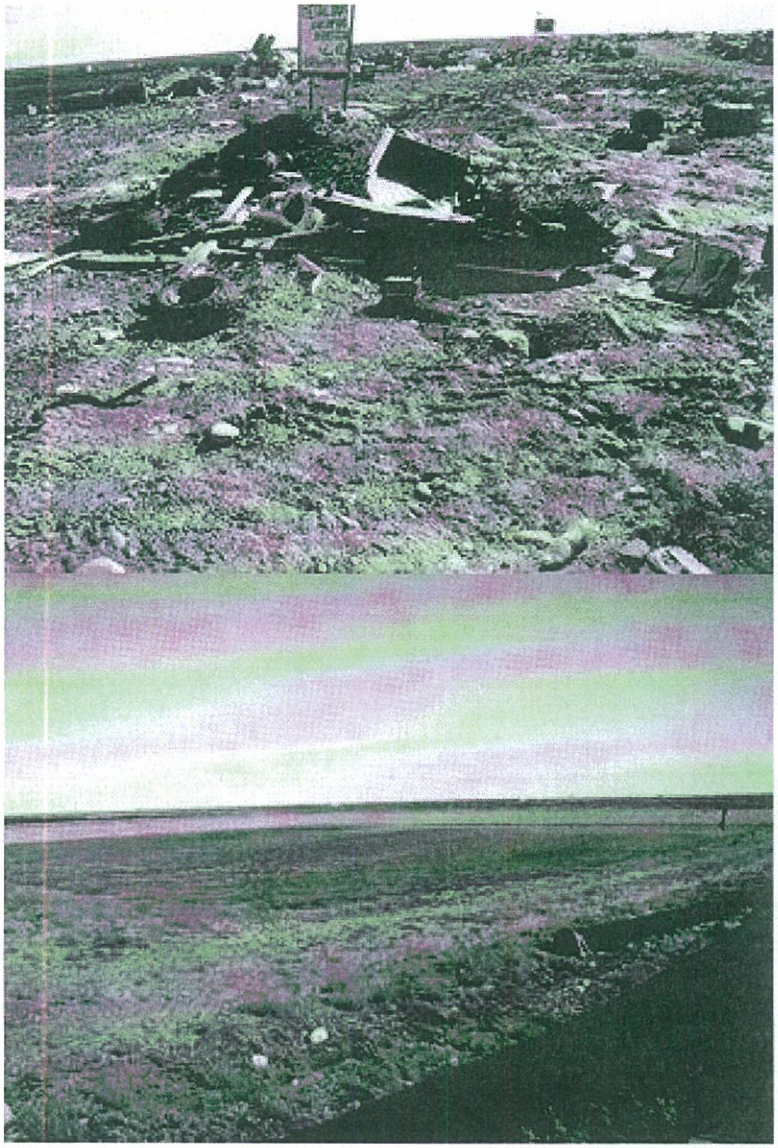

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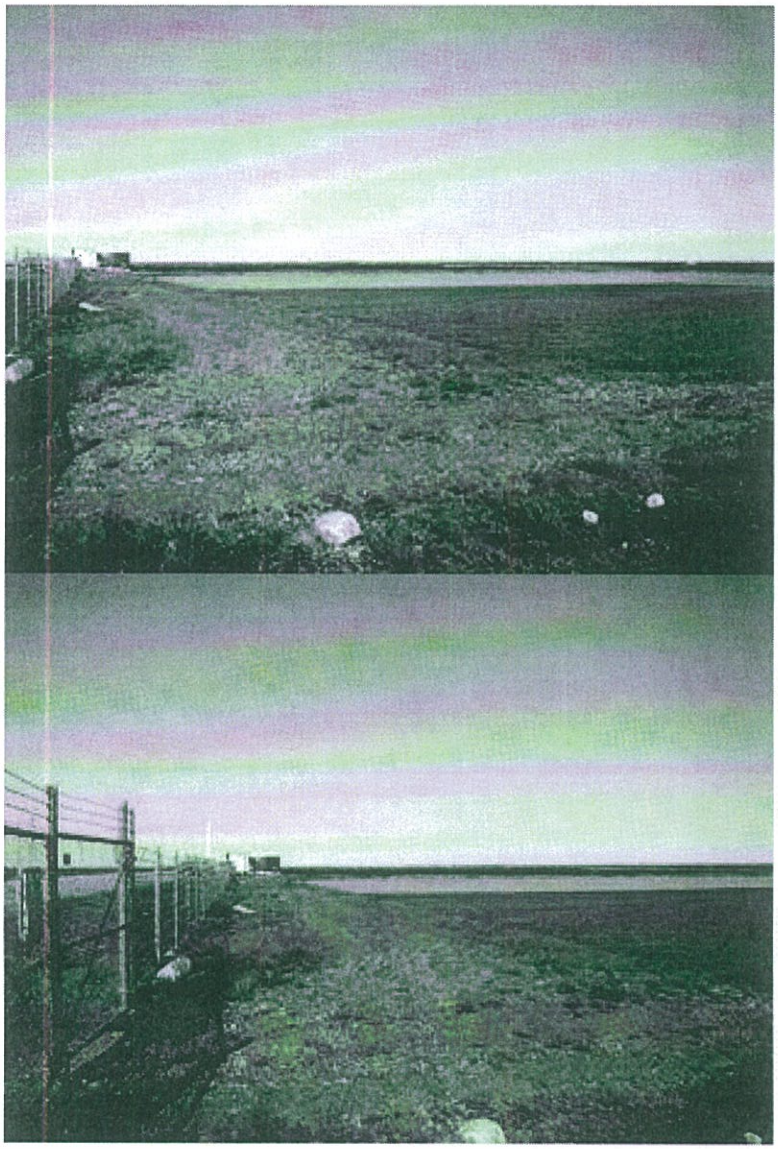

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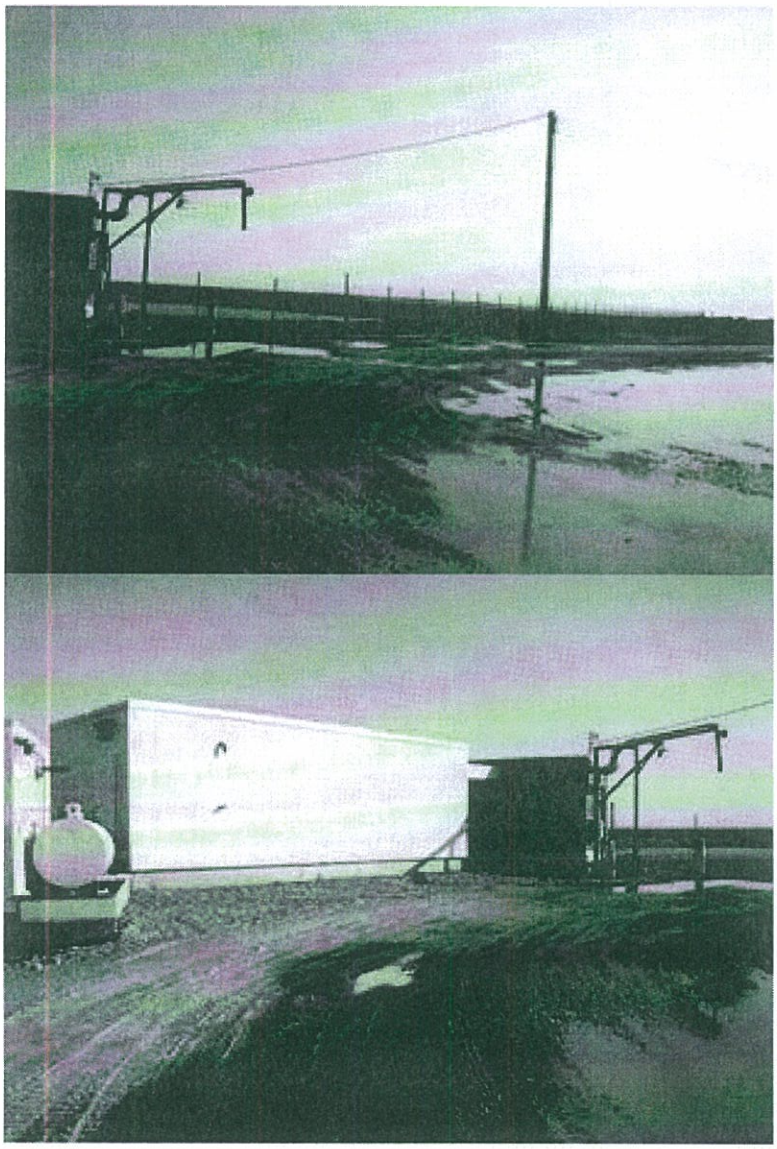

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