

NWB Annual Report

Year being reported: 2011



License No: 1BR-BEA1015 Issued Date: April 1, 2010
Expiry Date: May 1, 2015

Project Name: Bear Island Mid-Canada Line Radar Station Remediation Project

Licensee: Aboriginal Affairs and Northern Development Canada (AANDC)

Mailing Address: PO Box 2200
Iqaluit NU
X0A 0H0

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

General Background Information on the Project (*optional):

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

Part B



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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):	Bear Island Water Reservoir	
Water Quantity:	20 per day	Quantity Allowable Domestic (cu.m)
	0	Actual Quantity Used Domestic (cu.m)
	N/A	Quantity Allowable Drilling (cu.m)
	N/A	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☐ Solid Waste Disposal
- ☐ Sewage
- ☐ Drill Waste
- ☐ Greywater
- ☐ Hazardous
- ☐ Other:

Additional Details:

N/A

All works were completed in 2010. The 2011 field season consisted only of demobilization of the camp and equipment

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)

Spill occurred while site was unoccupied. See attached Spill Reports.

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed

Additional Details:

Progressive Reclamation Work Undertaken

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

The work completed in 2011 included:
 - Demobilization of camp and equipment

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;

Additional Details:

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

Additional Details:

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

No inspection and/or compliance report issued by INAC



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

Any additional comments or information for the Board to consider

Work at the site is complete.

Date Submitted:

February 28, 2012

Submitted/Prepared by:

Mark Yetman, Project Manager, AANDC

Contact Information:

Tel: 867-975-4733

Fax: 867-975-4736

email: mark.yetman@aandc-aadnc.gc.ca

GPS Coordinates for water sources utilized

[illegible]

GPS Locations of areas of waste disposal

[illegible]



July 15, 2011

Andrew Keim
Water Resources Officer
Aboriginal Affairs and Northern Development Canada
PO Box 100
Iqaluit, NU
X0A 0H0

**RE: DETAILED REPORT FOR THE BEAR ISLAND WATER LAGOON SPILL
(REPORTED TO THE NT-NU SPILL REPORT LINE ON JUNE 20, 2011)
– NUNAVUT WATER LICENCE #1BR-BEA1015**

Dear Mr. Keim:

As per Part I, Section 5(c) of Nunavut Water Board Licence #1BR-BEA1015 the Contaminated Sites Directorate of Aboriginal Affairs and Northern Development Canada (AANDC) is providing a report concerning the spill that occurred at the Bear Island site sometime between October 27, 2010 and June 14, 2011.

Details on the spill are provided below:

- The exact date of the spill is unknown. It occurred sometime between October 27, 2010 when we demobilized from the site, and June 14, 2011 when we returned during a pre-season site visit.
- The spill was a result of Polar Bear damage to the lagoon liner. The bear perforated the liner in several places and the water in the lagoon was released.
- The spill was of approximately 9,000 litres of water that contained Iron and Zinc that slightly exceeded the Water Licence Discharge Criteria. See table below for details:

PARAMETER	DISCHARGE CRITERIA	ACTUAL LEVELS	EXCEEDED BY
Iron	1,000 ug/L	2,670 ug/L	2.67x
Zinc	500 ug/L	629 ug/L	1.26x

- The GPS co-ordinates of the spill were:
 - o Latitude: 54 degrees, 20 minutes, 54 seconds
 - o Longitude: 81 degrees, 05 minutes, 20 seconds
- The samples were taken at the end of the 2010 field season before we demobilized from the site. Since the water did not meet Discharge Criteria we were forced to leave it in place overwinter. Our plan for 2011 was to resample the water and either treat it again, or pump it into tanks and remove it from the site.

- Site activities in 2010 ended on October 27, 2010. Remedial works were effectively complete at this time with the only remaining work for 2011 being final demobilization.

Since we were not present when the spill occurred no remedial actions were taken.

- Since the water lagoon is empty and will be closed during demobilization, there is no chance of another spill occurring.
- There is no evidence of a spill around the lagoon, and since the contaminant levels were low there is no cleanup required.
- To prevent this type of spill from happening again we will try and ensure that all water is treated prior to winterizing between seasons at future project sites.

Pictures of the lagoon and spill area are provided in Appendix A.

If you have any questions or require additional information please contact me at (867) 975-4733 or via e-mail at mark.yetman@inac-ainc.gc.ca.

Sincerely,

Mark Yetman
Project Manager, Contaminated Sites

APPENDIX A - PHOTOGRAPHS



PICTURE 1: Lagoon with Torn and Missing Sections of Liner



PICTURE 2: Empty Lagoon with Missing Liner

APPENDIX A - PHOTOGRAPHS



PICTURE 3: Low Corner of Lagoon (Area Water Most Likely Discharged)



PICTURE 4: Lagoon Liner with Evidence of Polar Bear Teeth Marks

APPENDIX B - SPILL REPORTS & ANALYTICAL RESULTS



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 06-20-2011	REPORT TIME 12:00	☒ ORIGINAL SPILL REPORT, OR		REPORT NUMBER -
	B	OCCURRENCE DATE: MONTH – DAY – YEAR unknown: between 10-14-2010 and 06-15-2011	OCCURRENCE TIME Unknown	☐ UPDATE # TO THE ORIGINAL SPILL REPORT	
C	LAND USE PERMIT NUMBER (IF APPLICABLE) N2010X0005		WATER LICENCE NUMBER (IF APPLICABLE) 1BR-BEA1015		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NAMED LOCATION Bear Island			REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR	
E	LATITUDE DEGREES 54 MINUTES 20 SECONDS		LONGITUDE DEGREES 81 MINUTES 05 SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Biogenie, a division of Englobe	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 4495 Wilfrid-Hamel Blvd, Suite 6111, Québec			
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED Waste Water	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 9,000 L	U.N. NUMBER 1202		
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE Barrel Washing Wastewater Lagoon	SPILL CAUSE Polar Bear Ripping Liner	AREA OF CONTAMINATION IN SQUARE METRES 20		
J	FACTORS AFFECTING SPILL OR RECOVERY NA	DESCRIBE ANY ASSISTANCE REQUIRED NA	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT NA		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS				
L	REPORTED TO SPILL LINE BY Jean-Pierre Pelletier	POSITION Project Director	EMPLOYER Biogenie	LOCATION CALLING FROM Quebec city	TELEPHONE 418-653-4422
M	ANY ALTERNATE CONTACT Luc Daigle	POSITION General Manager	EMPLOYER Biogenie	ALTERNATE CONTACT LOCATION Quebec City	ALTERNATE TELEPHONE Same

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION Station operator	EMPLOYER	LOCATION CALLED Yellowknife, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC			SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN		FILE STATUS ☐ OPEN ☐ CLOSED
AGENCY	CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

ACCIDENT AND EVENT REPORT - HEALTH-SAFETY AND ENVIRONMENT

Office : Northern Canada Office

Site/project : TP0654: Bear Island

1 NATURE

☐ Accident involving body injury (including professional injuries due to repetitive motion, work overload, etc.) ☒ Material damage or damage to property or the environment (including environmental nuisance)	☐ Near miss ☐ Situation with a potential risk of accident or incident for health, safety or for the environment ☒ Criminal act declaration (robbery, vandalism, breaking and entering)
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2 DESCRIPTION

Date and Time of the Event:				Reported by (print in capital letters):	Date of Report:		
Day	Month	Year	Time		Day	Month	Year
				Jean-Pierre Pelletier	20	06	2011
Exact location of event:				Treated Water Lagoon - Bear Island, Nunavut			
This event involves:				☐ Internal Employee ☐ External temporary worker ☐ Subcontractor ☒ N/A ☐ Other:			
Company name (if subcontractor):							

Description of the Event (provide a brief description of the situation and tasks that were in progress):

After the end of the 2010 work season on Bear Island, treated barrel processing water was left within a lined lagoon. Estimated volume was about 9,000 L. Parameter slightly exceeding discharge guidelines were Iron and Zinc.

Between mid-October 2010 and June 15, 2011, polar bears visited the island and damaged the lagoon causing an accidental spill which fully emptied the lagoon.

Witness (Name):	Company:	Telephone:
Mark Yetman	DIAND	(867) 975-4733
Matthew McElwaine	PWGSC	(780) 497-3690
Luc Daigle	Biogenie	(418) 653-4422

Cost estimate of damages (expenses for repairs or replacement):	NA
Quantity of product discharged (if accidental spill or emission):	9,000 L

3 IDENTIFICATION OF THE INJURED VICTIM☐ Check if not applicable and proceed to Section 5

First and Last Name:	NA		
Position:			
Department:			
Is this person a:	☐ Right-handed ☐ Left-handed	☐ Male ☐ Female	

4 DESCRIPTION OF THE INJURY

Type of Injury:	NA		
Body Part Injured:		☐ Left ☐ Right	

Consultation with a Physician:	☐ No ☐ Yes – Date and Time:	Day	Month	Year	Time
Location (emergency, clinic, etc.):					
Care and Prescriptions Received:					

Work Stoppage*: ☐ No ☐ Yes	Expected Return Date:	Day	Month	Year
Reassignment*: ☐ No ☐ Yes	Expected Return Date to Regular Activities :	Day	Month	Year

* Prescribed by the physician for the days following the day of the event

5 ROOT CAUSE ANALYSIS AND CORRECTIVE ACTIONS

Which factor(s) is this event associated with and what would the corrective actions be in order to minimize the risk? (this section should be completed with the assistance of the site supervisor or the HSE Officer).

A thorough analysis of this situation must allow you to associate the event, at a minimum, with one or more of the eight (8) factors listed below. The corrective actions which result from these factors will permit the problem to be corrected at its source. To be efficient, these correctives actions must be simple, practical, inexpensive, easily applicable and proportional with the level of risk to be controlled.

To determine the root cause, the word "directive" includes written requirements as well as implied requirements. The word "worker" refers to an employee, one of our subcontractors or any other person under our direct supervision.

Check and complete the applicable section(s) – minimum of 1 factor

- ☐ **1 – Training:** Lack of training or skill of the worker.
Recommended Corrective Action: Provide training or reassign the worker.
- ☐ **2 – Behaviour:** Non-compliance of directives by a worker because he/she wanted to save time, money or effort.
Recommended Corrective Action: Immediate discussion with the concerned worker and his/her supervisor.
- ☐ **3 – Management:** Non compliance of directives that were encouraged by the managerial staff.
Recommended Corrective Action: Immediate discussion with the forman and his/her supervisor.
- ☐ **4 – Rigor:** Lack of rigor (consider that it is not important, oversight, bad working habits - tolerated or not by managerial staff).
Recommended Corrective Action: Immediate discussion with the concerned worker and his/her supervisor.
- ☐ **5 – Procedures:** Lack of written procedures or work instructions.
Recommended Corrective Action: Creation or updating relevant procedures or work instructions.
- ☐ **6 – Communications:** Lack of information transferred to workers (including signs).
Recommended Corrective Action: Review the communication path. Install proper signs if required.
- ☐ **7 – Equipment:** Problem with tools, equipment, installations or protective equipment.
Recommended Corrective Action: Repair, improve or replace the problematic tool, equipment, installation or protective equipment and/or update their maintenance program if applicable.
- ☒ **8 – External Factor:** Problem of which the source is totally out of the rational control of the workers or subcontractors.
Recommended Corrective Action: If appropriate, tell the workers to increase their vigilance considering that the identified cause cannot be reasonably controlled and the problem could reoccur.

For each factor previously checked, describe:

Factor No.: 1	Detail of the planned corrective action
None	
Deadline:	☐ Done or within the next few days ☐ Later, requires further follow-up from the office QHSE Action Plan

Factor No.:	Detail of the planned corrective action
Deadline:	☐ Done or within the next few days ☐ Later, requires further follow-up from the office QHSE Action Plan

Factor No.:	Detail of the planned corrective action
Deadline:	☐ Done or within the next few days ☐ Later, requires further follow-up from the office QHSE Action Plan

6 RISK ASSESSMENT (Check only one box considering real or potential impact and probability of recurrence)

Impacts*	Health and Safety	Environment	Public - Media	Finance (Loss)	Periodical (4 times/year or +)	Frequent (1 to 3 times/year)	Occasional (1 to 3 times/3 years)	Isolated (1 to 3 times/10 years)	Improbable (1 time/30 years or -)
Fatality	One or More Fatalities	N/A	N/A	N/A	☐	☐	☐	☐	☐
Critical	Permanent Disability, Potential Fatalities	Receiving Area Heavily Damaged	Demonstration, National Coverage	> 100 000	☐	☐	☐	☐	☐
Major	Long Term Convalescence (Lost Time Injury)	Receiving Area Seriously Damaged (Long Period)	Proceedings, Regional Coverage	< 100 000	☐	☐	☐	☐	☐
Serious	Medical Aid, Restricted Work, Short Term Convalescence (few days)	Receiving Area Seriously Damaged (Short Period)	Repetitive Complaints, Local Coverage	< 20 000	☐	☐	☐	☐	☐
Minor	First Aid or Less	Receiving Area Slightly or Undamaged	Isolated Complaint, No Media Coverage	< 5 000	☐	☐	☒	☐	☐

* Overall impact should be selected from the category that represents the most severe impact

Risk Level: ☐ Low ☐ Medium ☒ High

Prepared by:

Date:

Site Supervisor or HSE Officer:

Date:

Director of relevant unit:

Date:

** Please send a completed copy to the EnGlobe QHSE Director and to the relevant Project Manager if applicable **

**NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.
4495, BOUL W. HAMEL SUITE 200
QUEBEC, QC G1P2J7**

À L'ATTENTION DE: Jean-Pierre Pelletier

N° DE PROJET: TP-0654

N° BON DE TRAVAIL: 10M448485

ORGANIQUE DE TRACE VÉRIFIÉ PAR: Luc Brouillard, chimiste

ANALYSE DE L'EAU VÉRIFIÉ PAR: Philippe Morneau, chimiste

DATE DU RAPPORT: 2010-11-02

VERSION*: 1

NOMBRE DE PAGES: 13

Si vous desirez de l'information concernant cette analyse, S.V.P. contacter votre chargé de projets au (514) 337-1000 ou au 1-866-417-5227

***NOTES**

VERSION 1: Certificat preliminaire, 2010-11-01.

Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

BPC aroclor (eau)

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

DESCRIPTION D'ÉCHANTILLON: LAG-2				
MATRICE: Eau usée				
DATE D'ÉCHANTILLONNAGE: 2010-10-27				
Paramètre	Unités	C / N	LDR	2099556
Aroclor 1242	µg/L		0.1	<0.1
Aroclor 1248	µg/L		0.1	<0.1
Aroclor 1254	µg/L		0.1	<0.1
Aroclor 1260	µg/L		0.1	<0.1
IUPAC #209	%			104%

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEP.



AGAT Laboratoires

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PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

BTEX (TC, eau)

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

DESCRIPTION D'ÉCHANTILLON: LAG-2				
MATRICE: Eau usée				
DATE D'ÉCHANTILLONNAGE: 2010-10-27				
Paramètre	Unités	C / N	LDR	2099556
Benzène	µg/L		0.3	<0.3
Toluène	µg/L		1.0	<1.0
Éthylbenzène	µg/L		0.3	<0.3
Xylènes (o,m,p)	µg/L		1.0	<1.0
Dibromofluorométhane	%			93
Toluène-D8	%			98
4-Bromofluorobenzène	%			103

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:



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NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Huiles et graisses totales (eau)

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

Paramètre	DESCRIPTION D'ÉCHANTILLON:		LAG-2	
	MATRICE:		Eau usée	
	DATE D'ÉCHANTILLONNAGE:		2010-10-27	
	Unités	C / N	LDR	2099556
Huiles et graisses totales	mg/L		4.5	<4.5

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:



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PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Phénols (TC, eau)

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

Paramètre	DESCRIPTION D'ÉCHANTILLON: LAG-2			
	MATRICE: Eau usée			
Unités	DATE D'ÉCHANTILLONNAGE: 2010-10-27			
	2099556			
C / N	LDR			
ortho-Crésol	µg/L	1.0	<1.0	
para-Crésol	µg/L	1.0	<1.0	
2,4-diméthylphénol	µg/L	1.0	<1.0	
4-nitrophénol	µg/L	1.0	<1.0	
Phénol	µg/L	1.0	<1.0	
2-chlorophénol	µg/L	1.0	<1.0	
3-chlorophénol	µg/L	1.0	<1.0	
4-chlorophénol	µg/L	1.0	<1.0	
2,3-dichlorophénol	µg/L	1.0	<1.0	
2,4 + 2,5-dichlorophénol	µg/L	1.0	<1.0	
2,6-dichlorophénol	µg/L	1.0	<1.0	
3,4-dichlorophénol	µg/L	1.0	<1.0	
3,5-dichlorophénol	µg/L	1.0	<1.0	
Pentachlorophénol	µg/L	1.0	<1.0	
2,3,4,6-tetrachlorophénol	µg/L	1.0	<1.0	
2,3,5,6-tetrachlorophénol	µg/L	1.0	<1.0	
2,4,5-trichlorophénol	µg/L	1.0	<1.0	
2,4,6-trichlorophénol	µg/L	1.0	<1.0	
Chlorophénols	µg/L	1.0	<1.0	
Phénol-D5	%		95	
2-Fluorophénol	%		84	
2,4,6-tribromophénol	%		96	

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

2099556 Le blanc est contaminé en phénol, il a été soustrait des échantillons.

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEP.

AGAT CERTIFICAT D'ANALYSE

Page 5 de 13

Cette version remplace et annule toute version, le cas échéant. Ce document ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite du laboratoire. Les résultats ne se rapportent qu'aux échantillons soumis pour analyse



AGAT Laboratoires

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PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

6 métaux dissous

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

DESCRIPTION D'ÉCHANTILLON: LAG-2				
MATRICE: Eau usée				
DATE D'ÉCHANTILLONNAGE: 2010-10-27				
Paramètre	Unités	C / N	LDR	2099556
Cadmium dissous	µg/L		0.8	<0.8
Chrome dissous	µg/L		10	<10
Cobalt dissous	µg/L		20	<20
Cuivre dissous	µg/L		3.0	<3.0
Nickel dissous	µg/L		2.0	4.3
Plomb dissous	µg/L		1.0	<1.0

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:




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AGAT CERTIFICAT D'ANALYSE

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AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Analyses Inorganiques

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

DESCRIPTION D'ÉCHANTILLON: LAG-2				
MATRICE: Eau usée				
DATE D'ÉCHANTILLONNAGE: 2010-10-27				
Paramètre	Unités	C / N	LDR	2099556
Mercurie total	mg/L		0.0001	<0.0001
pH	pH		NA	8.66

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:




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PRÉLEVÉ PAR: Robert Desjardins

À L'ATTENTION DE: Jean-Pierre Pelletier

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Métaux totaux

DATE DE RÉCEPTION: 2010-11-01

DATE DU RAPPORT: 2010-11-02

DESCRIPTION D'ÉCHANTILLON: LAG-2				
MATRICE: Eau usée				
DATE D'ÉCHANTILLONNAGE: 2010-10-27				
Paramètre	Unités	C / N	LDR	2099556
Arsenic	µg/L		1.0	18.0
Fer	µg/L		300	2670
Zinc	µg/L		3.0	629

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

Certifié par:

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Contrôle de qualité

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

À L'ATTENTION DE: Jean-Pierre Pelletier

PRÉLEVÉ PAR: Robert Desjardins

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Analyse organique de trace

Date du rapport: 2010-11-02

Date du rapport: 2010-11-02			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.

BTEX (TC, eau)

Benzène	1	NA	NA	NA	0.0	< 0.3	100%	80%	120%	NA	80%	120%	NA	80%	120%
Toluène	1	NA	NA	NA	0.0	< 1.0	103%	80%	120%	NA	80%	120%	NA	80%	120%
Éthylbenzène	1	NA	NA	NA	0.0	< 0.3	107%	80%	120%	NA	80%	120%	NA	80%	120%
Xylènes (o,m,p)	1	NA	NA	NA	0.0	< 1.0	117%	80%	120%	NA	80%	120%	NA	80%	120%
Dibromofluorométhane	1	NA	NA	NA	0.0	103	90%	40%	140%	NA	40%	140%	NA	40%	140%
Toluène-D8	1	NA	NA	NA	0.0	101	100%	40%	140%	NA	40%	140%	NA	40%	140%
4-Bromofluorobenzène	1	NA	NA	NA	0.0	90	109%	40%	140%	NA	40%	140%	NA	40%	140%

Phénols (TC, eau)

ortho-Crésol	1	MR	19.4	18.4	5.3	< 1.0	97%	70%	130%	NA	70%	130%	NA	70%	130%
para-Crésol	1	MR	16.1	15.4	4.4	< 1.0	81%	70%	130%	NA	70%	130%	NA	70%	130%
2,4-diméthylphénol	1	MR	20.2	19.3	4.6	< 1.0	101%	70%	130%	NA	70%	130%	NA	70%	130%
4-nitrophénol	1	MR	23.3	21.5	8.0	< 1.0	117%	70%	130%	NA	70%	130%	NA	70%	130%
Phénol	1	MR	17.6	16.3	7.7	7.5	88%	70%	130%	NA	70%	130%	NA	70%	130%
2-chlorophénol	1	MR	16.1	15.2	5.8	< 1.0	80%	70%	130%	NA	70%	130%	NA	70%	130%
3-chlorophénol	1	MR	20.6	19.7	4.5	< 1.0	103%	70%	130%	NA	70%	130%	NA	70%	130%
4-chlorophénol	1	MR	16.7	16.1	3.7	< 1.0	84%	70%	130%	NA	70%	130%	NA	70%	130%
2,3-dichlorophénol	1	MR	20.3	19.1	6.1	< 1.0	102%	70%	130%	NA	70%	130%	NA	70%	130%
2,4 + 2,5-dichlorophénol	1	MR	32.6	30.7	6.0	< 1.0	82%	70%	130%	NA	70%	130%	NA	70%	130%
2,6-dichlorophénol	1	MR	19.9	18.9	5.2	< 1.0	100%	70%	130%	NA	70%	130%	NA	70%	130%
3,4-dichlorophénol	1	MR	21.8	20.7	5.2	< 1.0	109%	70%	130%	NA	70%	130%	NA	70%	130%
3,5-dichlorophénol	1	MR	20.0	18.9	5.7	< 1.0	100%	70%	130%	NA	70%	130%	NA	70%	130%
Pentachlorophénol	1	MR	21.6	20.2	6.7	< 1.0	108%	70%	130%	NA	70%	130%	NA	70%	130%
2,3,4,6-tetrachlorophénol	1	MR	21.2	19.8	6.8	< 1.0	106%	70%	130%	NA	70%	130%	NA	70%	130%
2,3,5,6-tetrachlorophénol	1	MR	22.6	21.1	6.9	< 1.0	113%	70%	130%	NA	70%	130%	NA	70%	130%
2,4,5-trichlorophénol	1	MR	17.4	16.0	8.4	< 1.0	87%	70%	130%	NA	70%	130%	NA	70%	130%
2,4,6-trichlorophénol	1	MR	20.7	19.6	5.5	< 1.0	103%	70%	130%	NA	70%	130%	NA	70%	130%
Chlorophénols	1	MR	378	354	6.6	< 1.0	95%	90%	110%	NA	0%	0%	NA	0%	0%
Phénol-D5	1	MR	101	97	4.0	96	101%	40%	140%	NA	40%	140%	NA	40%	140%
2-Fluorophénol	1	MR	91	87	4.5	91	91%	40%	140%	NA	40%	140%	NA	40%	140%
2,4,6-tribromophénol	1	MR	105	95	10.0	94	105%	40%	140%	NA	40%	140%	NA	40%	140%

Huiles et graisses totales (eau)

Huiles et graisses totales	1	MR	24.5	24.8	1.2	< 4.5	94%	70%	130%	NA	70%	130%	NA	70%	130%
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BPC aroclor (eau)

Aroclor 1242	1	MR	NA	NA	0.0	< 0.1	NA	70%	130%	NA	70%	130%	NA	70%	130%
Aroclor 1248	1	MR	NA	NA	0.0	< 0.1	NA	70%	130%	NA	70%	130%	NA	70%	130%
Aroclor 1254	1	MR	0.6	0.6	0.0	< 0.1	124%	70%	130%	NA	70%	130%	NA	70%	130%
Aroclor 1260	1	MR	NA	NA	0.0	< 0.1	NA	70%	130%	NA	70%	130%	NA	70%	130%
IUPAC #209	1	MR	96			90	96%	40%	140%	NA	40%	140%	NA	40%	140%

Contrôle de qualité

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

À L'ATTENTION DE: Jean-Pierre Pelletier

PRÉLEVÉ PAR: Robert Desjardins

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Analyse organique de trace (Suite)

Date du rapport: 2010-11-02			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.

Certifié par:



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Contrôle de qualité

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

À L'ATTENTION DE: Jean-Pierre Pelletier

PRÉLEVÉ PAR: Robert Desjardins

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

Analyse de l'eau

Date du rapport: 2010-11-02

Date du rapport: 2010-11-02			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.

6 métaux dissous

Cadmium dissous	1101	NA	NA	NA	0.0	< 0.8	97%	80%	120%	98%	80%	120%	97%	80%	120%
Chrome dissous	1101	NA	NA	NA	0.0	< 10	96%	80%	120%	100%	80%	120%	109%	80%	120%
Cobalt dissous	1101	NA	NA	NA	0.0	< 20	109%	80%	120%	105%	80%	120%	103%	80%	120%
Cuivre dissous	1101	NA	NA	NA	0.0	< 3.0	99%	80%	120%	104%	80%	120%	86%	80%	120%
Nickel dissous	1101	NA	NA	NA	0.0	< 2.0	99%	80%	120%	97%	80%	120%	88%	80%	120%
Plomb dissous	1101	NA	NA	NA	0.0	< 1.0	96%	80%	120%	103%	80%	120%	100%	80%	120%

Analyses Inorganiques

Mercuré total	1	NA	NA	NA	0.0	< 0.0001	99%	80%	120%	100%	90%	110%	106%	80%	120%
pH	1	NA	NA	NA	0.0	NA	100%	80%	120%	100%	90%	110%	NA	0%	0%

Métaux totaux

Arsenic	1101	2099556	18.0	18.3	1.7	< 1.0	96%	80%	120%	94%	90%	110%	97%	80%	120%
Fer	1101	2099556	2670	2680	0.4	< 300	111%	80%	120%	96%	80%	120%	100%	80%	120%
Zinc	1101	2099556	629	620	1.4	< 3.0	106%	80%	120%	95%	90%	110%	99%	80%	120%

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Sommaire de méthode

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

À L'ATTENTION DE: Jean-Pierre Pelletier

PRÉLEVÉ PAR: Robert Desjardins

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse organique de trace					
Aroclor 1242	2010-11-02	2010-11-02	ORG-100-5108F	MA.403-BPC 2.0	GC/ECD
Aroclor 1248	2010-11-02	2010-11-02	ORG-100-5108F	MA.403-BPC 2.0	GC/ECD
Aroclor 1254	2010-11-02	2010-11-02	ORG-100-5108F	MA.403-BPC 2.0	GC/ECD
Aroclor 1260	2010-11-02	2010-11-02	ORG-100-5108F	MA.403-BPC 2.0	GC/ECD
IUPAC #209	2010-11-02	2010-11-02	ORG-100-5108F	MA.403-BPC 2.0	GC/ECD
Benzène	2010-11-01	2010-11-01	ORG-100-5101F	EPA SW-846 5230B & 8260	(P&T)GC/MS
Toluène	2010-11-01	2010-11-01	ORG-100-5101	EPA SW-846 5230B & 8260	(P&T)GC/MS
Éthylbenzène	2010-11-01	2010-11-01	ORG-100-5101	EPA SW-846 5230B & 8260	(P&T)GC/MS
Xylènes (o,m,p)	2010-11-01	2010-11-01	ORG-100-5101	EPA SW-846 5230B & 8260	(P&T)GC/MS
Dibromofluorométhane	2010-11-01	2010-11-01	ORG-100-5101F	EPA SW-846 5230B & 8260	(P&T)GC/MS
Toluène-D8	2010-11-01	2010-11-01	ORG-100-5101F	EPA SW-846 5230B & 8260	(P&T)GC/MS
4-Bromofluorobenzène	2010-11-01	2010-11-01	ORG-100-5101F	EPA SW-846 5230B & 8260	(P&T)GC/MS
Huiles et graisses totales	2010-11-01	2010-11-01	ORG-100-5105F	MA.415-HGT 1.0	MICROBALANCE
ortho-Crésol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
para-Crésol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,4-diméthylphénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
4-nitrophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
Phénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2-chlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
3-chlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
4-chlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,3-dichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,4 + 2,5-dichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,6-dichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
3,4-dichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
3,5-dichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
Pentachlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,3,4,6-tetrachlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,3,5,6-tetrachlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,4,5-trichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
2,4,6-trichlorophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS
Chlorophénols	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-PHE 1.0	GC/MS
Phénol-D5	2010-11-01	2010-11-01	ORG-100-5103	MA.400-Phé 1.0	GC/MS
2-Fluorophénol	2010-11-01	2010-11-01	ORG-100-5103	MA.400-Phé 1.0	GC/MS
2,4,6-tribromophénol	2010-11-01	2010-11-01	ORG-100-5113F	MA.400-Phé 1.0	GC/MS

Sommaire de méthode

NOM DU CLIENT: BIOGENIE, DIVISION D'ENGLOBE CORP.

N° BON DE TRAVAIL: 10M448485

N° DE PROJET: TP-0654

À L'ATTENTION DE: Jean-Pierre Pelletier

PRÉLEVÉ PAR: Robert Desjardins

LIEU DE PRÉLÈVEMENT: Bear Island, Nunavut

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse de l'eau					
Cadmium dissous	2010-11-01	2010-11-01	MET-101-6105	EPA-SW 846 Met. 3050 et 6020	ICP/MS
Chrome dissous	2010-11-01	2010-11-01	MET-101-6105	EPA SW 846 Met. 3050 et 6020	ICP/MS
Cobalt dissous	2010-11-01	2010-11-01	MET-101-6105	EPA SW Met. 3050 et 6020	ICP-MS
Cuivre dissous	2010-11-01	2010-11-01	MET-101-6105	EPA SW 846 Met. 3050 et 6020	ICP/MS
Nickel dissous	2010-11-01	2010-11-01	MET-101-6105	EPA SW 846 Met. 3050 et 6020	ICP/MS
Plomb dissous	2010-11-01	2010-11-01	MET-101-6105	EPA SW 846 Met. 3050 et 6020	ICP/MS
Mercuré total	2010-11-01	2010-11-01	MET-101-6102F	EPA 245.5	FIMS
pH	2010-11-01	2010-11-01	INOR-101-6021F	SM 4500-H+ B 21éd. 2005	PC TITRATE
Arsenic	2010-11-01	2010-11-01	MET-101-6105F	EPA SW-846 6020	ICP-MS
Fer	2010-11-01	2010-11-01	MET-101-6105F	EPA SW-846 6020	ICP-MS
Zinc	2010-11-01	2010-11-01	MET-101-6105F	EPA SW-846 6020	ICP-MS