



Fisheries and Oceans
Pêches et Océans

CERTIFICATE No.:
01/07

FHPR FISH HEALTH CERTIFICATE

(Eggs Only)

Name of facility/source: **Stofniskur Ltd.**
Address: **P.O. Box 24, 222 Hafnarfjörður, ICELAND**
Telephone No.: **(+354) 564 6300** Fax No.: **(+354) 564 6301**

I, **Dr. Gísli Jónsson**, approved by the Secretary of the Department of the Interior, last recertified on May 31st 2004 as a Certifying Official for Iceland, as required by the Title 50, CFR pursuant to the provisions of part 16.13, do hereby certify that the source indicated above was inspected by the methods approved by the Minister of Fisheries and Oceans Canada and that the following pathogen status was determined as required by the Canadian Fish Health Protection Regulations C.R.C.

Pathogen	Detected	Not Detected	Not Tested
Viral Hemorrhagic Septicemia Virus (VHS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Infectious Hematopoietic Necrosis Virus (IHNV)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Infectious Pancreatic Necrosis Virus (IPNV)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other filterable replicating agent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Aeromonas salmonicida</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Yersinia ruckeri</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Myxobolus cerebralis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Ceratomyxa shasta</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Date of the last four inspections:

July 9th 2007
(D/M/Y)

July 16th 2007
(D/M/Y)

July 23rd 2007
(D/M/Y)

July 30th 2007
(D/M/Y)

July 31st 2007
Date of Issue


Gísli Jónsson
Fish Health Official, Iceland
VETERINARY OFFICER
FOR FISH DISEASES
Place

(+354) 530 4800
Telephone No.



This certificate expires on the date the pathogen status changes or April 20th 2008, whichever is the earlier.
(Date)

EXPORTER'S DECLARATION:

I, **Jónas Jónsson** ☐ owner ☒ manager of the above noted facility which was last inspected on _____ declare that, to my knowledge, no disease agent listed in Schedule II of the Fish Health Protection Regulations (FHPR) that would alter the above described pathogen status have been detected, in this facility, according to the procedures outlined in the FHPR Manual of Compliance since the last FHPR inspection, that no introduction of fish or fish eggs from any source that would alter the above pathogen status has been made into the facility, that the shipment described below will be derived solely from this facility, and that eggs in the shipment will be surface disinfected prior to leaving the source.
I can also declare that these eggs will be surface disinfected and that they derive solely from the above inspected source.

This shipment consists of:

Number ☐ Live ☒ Eggs Species: **Atlantic salmon (*Salmo salar* L.)**

Date _____ Signature of Owner, Manager or Consignor _____ (+354) 564 6300
Telephone No

IMPORTING INFORMATION:

Departing city and country: **Keflavik, ICELAND** Carrier: _____

Bill of lading No.: _____ Date: _____

Anticipated port of arrival in Canada (City and Province): _____ Date _____

Name and address of importer:
??
CANADA

Date _____ Signature of Importer _____ Telephone No. _____



AGRICULTURAL AUTHORITY OF ICELAND
VETERINARY OFFICER FOR FISH DISEASES



HEALTH & MOVEMENT DOCUMENT
for fertilized salmon eggs from an approved zone

No

Country-initials			Initials (vet.)		Serialnumber		Year	
I	C	E	G	J	0	0	0	7

I. Country of origin:

ICELAND

Approved zone:

ICELAND

II. Farm of origin (name and address):

Stofnfiskur Ltd.


Concession-no.: 620391-1079

Staðarberg 2-4, P.O. Box 24

222 HAFNARFJÖRÐUR

ICELAND

III. Animals or product:

	<i>Live fish:</i>	<i>Eggs:</i>	<i>Gametes:</i>
<i>Species:</i> <i>(English and latin name):</i>		 Atlantic salmon (<i>Salmo salar</i> L.)	
<i>Number:</i> <i>No. of boxes:</i> <i>Net weight:</i> <i>Gross weight:</i>		Approx. xx litres x xx kg's xx kg's	

IV. Destination:

Country of destination:

CANADA

Consignee (name and address):

xx Ltd.

xx

xx

CANADA

V. Means of transport (nature and identification):

Flight KEF-XXX nr. F1 xx on xxday, August xxth 2007

Air Waybill No: XX

Arrival scheduled at XX Airport at xx:xx GMT

VI. Health attestation:

I, the undersigned Veterinary Officer for Fish Diseases, hereby certify that the fertilized Atlantic salmon eggs forming the present consignment, originate from an approved zone and that they satisfy the health requirements of Icelandic Veterinary authorities and the European Union Council Directive 91/67/EEC.

Done at: Selfoss on: July 31st 2007
(place) (date)

Name of official service: **Agricultural Authority of Iceland,**
- Veterinary services -



Official stamp¹



GÍSLI JÓNSSON

Veterinary Officer for Fish Diseases

Name and title in capital letters¹



Signature of the official veterinarian¹

¹ The signature and the stamp must be in a colour different to that of the printing.



Fisheries and Oceans
Pêches et Océans

CERTIFICATE NO.:

01/07

FHPR FISH HEALTH CERTIFICATE

(Eggs Only)

Name of facility/source: **Stofnfiskur Ltd.**

Address: **P.O. Box 24, 222 Hafnarfjörður, ICELAND**

Telephone No.: **(+354) 564 6300**

Fax No.: **(+354) 564 6301**

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Pathogen	Detected	Not Detected	Not Tested
Viral Hemorrhagic Septicemia Virus (VHS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Infectious Hematopoietic Necrosis Virus (IHNV)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Infectious Pancreatic Necrosis Virus (IPNV)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other filterable replicating agent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Aeromonas salmonicida</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Yersinia ruckeri</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Myxobolus cerebralis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Ceratomyxa shasta</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Date of the last four inspections:

July 9th 2007
(D/M/Y)

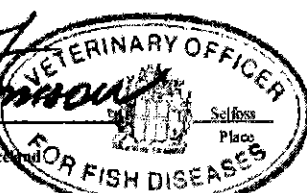
July 16th 2007
(D/M/Y)

July 23rd 2007
(D/M/Y)

July 30th 2007
(D/M/Y)

July 31st 2007
Date of Issue


Gisli Jónsson
Fish Health Official, Iceland



(+354) 530 4800
Telephone No.



This certificate expires on the date the pathogen status changes or April 20th 2008, whichever is the earlier.
(Date)

EXPORTER'S DECLARATION:

I, **Jónas Jónsson** ☐ owner ☒ manager of the above noted facility which was last inspected on _____ declare that, to my knowledge, no disease agent listed in Schedule II of the Fish Health Protection Regulations (FHPR) that would alter the above described pathogen status have been detected, in this facility, according to the procedures outlined in the FHPR Manual of Compliance since the last FHPR inspection, that no introduction of fish or fish eggs from any source that would alter the above pathogen status has been made into the facility, that the shipment described below will be derived solely from this facility, and that eggs in the shipment will be surface disinfected prior to leaving the source.
I can also declare that these eggs will be surface disinfected and that they derive solely from the above inspected source.

This shipment consists of:

Number ☐ Live ☒ Eggs Species: **Atlantic salmon (*Salmo salar* L.)**

Date _____ Signature of Owner, Manager or Consignor _____ Telephone No. **(+354) 564 6300**

IMPORTING INFORMATION:

Departing city and country: **Reykjavik, ICELAND** Carrier: _____

Bill of lading No.: _____ Date: _____

Anticipated port of arrival in Canada (City and Province): _____ Date: _____

Name and address of importer:
??
CANADA

Date _____ Signature of Importer _____ Telephone No. _____



AGRICULTURAL AUTHORITY OF ICELAND
VETERINARY OFFICER FOR FISH DISEASES



HEALTH & MOVEMENT DOCUMENT
for fertilized salmon eggs from an approved zone

No

Country-initials			Initials (vet.)			Serialnumber		Year	
I	C	E	G	J		0	0	0	7



I. Country of origin: ICELAND

Approved zone: ICELAND

II. Farm of origin (name and address):

Stofnfiskur Ltd.


Concession-no.: 620391-1079

Staðarberg 2-4, P.O. Box 24

222 HAFNARFJÖRDUR

ICELAND

III. Animals or product:

	Live fish:	Eggs:	Gametes:
<i>Species:</i> <i>(English and latin name):</i>		 Atlantic salmon (<i>Salmo salar</i> L.)	
<i>Number:</i> <i>No. of boxes:</i> <i>Net weight:</i> <i>Gross weight:</i>		Approx. xx litres x xx kg's xx kg's	

IV. Destination:

Country of destination:

CANADA

Consignee (name and address):

xx Ltd.

xx

xx

CANADA

V. Means of transport (nature and identification):

Flight KEF-XXX nr. FI xx on xxday, August xxth 2007

Air Waybill No: XX

Arrival scheduled at XX Airport at xx:xx GMT

VI. Health attestation:

I, the undersigned Veterinary Officer for Fish Diseases, hereby certify that the fertilized Atlantic salmon eggs forming the present consignment, originate from an approved zone and that they satisfy the health requirements of Icelandic Veterinary authorities and the European Union Council Directive 91/67/EEC.

Done at: Selfoss on: July 31st 2007
(place) (date)

Name of official service: **Agricultural Authority of Iceland,**
- Veterinary services -



Official stamp¹



GÍSLI JÓNSSON

Veterinary Officer for Fish Diseases

Name and title in capital letters¹



Signature of the official veterinarian¹

¹ The signature and the stamp must be in a colour different to that of the printing.

Fish Health Service Report

Company: West Coast Fish Culture
Site:
Work done: Fish health check and virus screening
Date submitted: October 5, 2007
Case number: 7-2319
Contact: Ryk Mooring
Pr#:

Final report issued: October 19, 2007

Sample description: Thirty atlantic fry were submitted to Microtek for a fish health check and virus screening. The fish were sent in two plastic bags one marked "slow swimmer" and one marked "good". *note- when observed under a dissecting microscope and light microscope the gill samples from the bag marked "slow swimmer" were clubbed, swollen, and inflamed.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

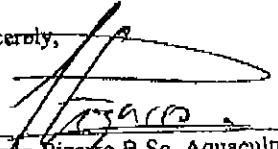
Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C

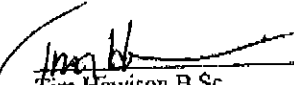
Results: No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay. A heavy amount of fungus was isolated from both the gill and kidney samples for the fish marked "slow swimmers". There was no bacteria growth from the kidney samples for the fish marked "good". A slight amount of mixed bacteria was isolated from the gills for the fish marked "good". A slight amount of *Flavobacterium* spp was isolated from 9 fish marked "slow swimmers" and 3 fish marked "good".

Slight amount of bacteria =	1 - 10 bacterial colonies
Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

If you have any questions regarding these results, please call us.

Sincerely,


Herman Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

6761 Kirkpatrick Crescent, Saanichton, B.C. Canada V8M 1Z8

Tel (250) 652-4482, Toll Free in Canada 1-800 667-5062, Fax (250) 652-4802, e-mail services@microtek-intl.com

Fish Health Service Report

Company: **Grieg**
Site: **West Coast Fish Culture**
Work done: **Fish health check and virus screening**
Date submitted: **November 6, 2007**
Case number: **7-2341**
Contact: **Ryk Mooring**
Pr#:

Final report issued: **November 20, 2007**

Sample description: Thirty atlantic fry of the Stofnfiskur stock were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 0.43 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C

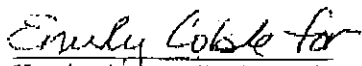
Results: No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay.

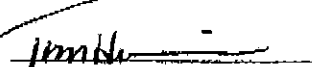
A heavy amount of fungus was isolated from the gills of 22 fish. A slight amount of mixed bacteria was isolated from the gills of 11 fish. A heavy amount of mixed bacteria was isolated from the gills of 4 fish. A slight amount of *Flavobacterium* spp was isolated from the gills of 17 fish. There was no bacteria growth from any of the kidney samples. None of the bacteria isolated were *Aeromonas salmonicida*, *Vibrio anguillarum* serotype 01 & 02, or *Yersinia ruckeri* serotype 01 & 02.

Slight amount of bacteria =	1 - 10 bacterial colonies
Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

If you have any questions regarding these results, please call us.

Sincerely,


Hernán Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

6761 Kirkpatrick Crescent, Saanichton, B.C. Canada V8M 1Z8

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Fish Health Service Report

Company: **Grieg**
 Site: **West Coast Fish Culture**
 Work done: **Fish health check and virus screening**
 Date submitted: **December 7, 2007**
 Case number: **7-2376**
 Contact: **Ryk Mooring**
 Pr#:
 Final report issued: **December 21, 2007**

Sample description: Thirty atlantic fry of the Stofnfiskur stock were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 0.61 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C

Results: No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay.

A heavy amount of fungus was isolated from the gills of 4 fish. A heavy amount of mixed bacteria was isolated from the gills of all 30 fish. A heavy amount of bacteria was isolated from the kidneys of all 30 fish. The predominant bacteria described as "beige transparent spreading" was identified by a API20E as "*Pseudomonas fluorescens*, excellent identification". None of the bacteria isolated were *Aeromonas salmonicida*, *Vibrio anguillarum* serotype 01 & 02, or *Yersinia ruckeri* serotype 01 & 02.

Slight amount of bacteria =	1 – 10 bacterial colonies
Moderate amount of bacteria =	11 – 20 bacterial colonies
Heavy amount of bacteria =	21 – too numerous to count

Sensitivities

	<i>Pseudomonas fluorescens</i>
	Fish #9 kidney
Tribrissen	Resistant
Romet	Resistant
Florfenicol	Resistant
Oxytetracycline	Intermediate

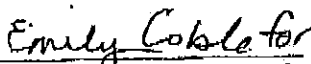
Microtek International Inc.

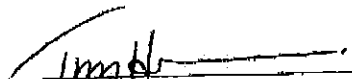
6761 Kirkpatrick Crescent, Saanichton, B.C. Canada V8M 1Z8

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If you have any questions regarding these results, please call us.

Sincerely,


Hernán Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

6761 Kirkpatrick Crescent, Saanichton, B.C. Canada V8M 1Z8

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Fish Health Service Report

Company: Grieg
 Site: West Coast Fish Culture
 Work done: Fish health check and virus screening
 Date submitted: January 4, 2008
 Case number: 8-2391
 Contact: Ryk Mooring
 Pr#:
 Final report issued: January 18, 2008

Sample description: Thirty atlantic fry of the Stofnfiskur stock were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 1.13 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C

Results: No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay. A heavy amount of fungus was isolated from the gills of 25 fish. A heavy amount of mixed bacteria was isolated from the gills of all 30 fish. A heavy amount of bacteria was isolated from the kidneys of 6 fish. A moderate amount of bacteria was isolated from the kidneys of 4 fish. A slight amount of bacteria was isolated from the kidneys of 13 fish. The predominant bacteria described as "cream opaque" was identified by a API20E as "*Aeromonas hydrophila*, good identification". None of the bacteria isolated were *Aeromonas salmonicida*, *Vibrio anguillarum* serotype 01 & 02, or *Yersinia ruckeri* serotype 01 & 02.

Slight amount of bacteria =	1 – 10 bacterial colonies
Moderate amount of bacteria =	11 – 20 bacterial colonies
Heavy amount of bacteria =	21 – too numerous to count

Sensitivities

	<i>Aeromonas hydrophila</i>
	Fish #7 kidney
Tribrissen	Sensitive
Romet	Sensitive
Florfenicol	Sensitive
Oxytetracycline	Sensitive

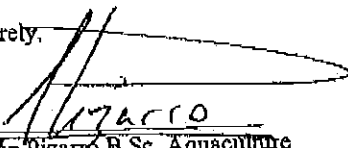
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Sincerely,


Hernán Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

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Fish Health Service Report

Company: **Grieg**
Site: **West Coast Fish Culture**
Work done: **ISAV RT-PCR, *Piscirickettsia salmonis* IFAT**
Date submitted: **January 17, 2008**
Case number: **8-2399**
Contact: **Ryk Mooring**
Pr#:
Final report issued: **January 23, 2008**

Sample description: Sixty atlantic fry of the Stofnfiskur stock were submitted to Microtek for ISAV RT-PCR testing and *P. salmonis* IFAT. The average weight of the fish was 1.21 grams.

ISAV: Multi-organ samples were screened for the causative agent of Infectious salmon anemia (ISA) using the RT-PCR diagnostic test.

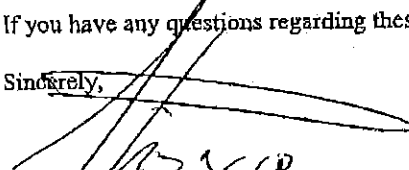
***Piscirickettsia salmonis*:** Liver and kidney tissues were screened for *Piscirickettsia salmonis* using the IFAT diagnostic test.

Results: No fluorescent cells matching the size and shape of the *P. salmonis* positive control were observed in any of the liver and kidney samples tested for all 60 fish.

None of the sixty fish samples tested by the ISAV RT-PCR had amplified PCR products corresponding to the base pair banding of the ISAV positive control.

If you have any questions regarding these results, please call us.

Sincerely,


Herman Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

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Tel (250) 652-4482, Toll Free in Canada 1-800 667-5062, Fax (250) 652-4802, e-mail services@microtek-intl.com

Mainstream Canada

A Division of EWOS Canada

BOOT LAGOON HATCHERY

11113 GREAT CENTRAL LAKE ROAD
PORT ALBERNI, BRITISH COLUMBIA V8Y 8Z2
TELEPHONE 250 723 4644
FAX 250 723 4614

FAX :**MAINSTREAM
CANADA**

TO: Dorothee Kieser	FROM: Janusz Wlaskowski
Fax: 250-756-7053	Pages: 1+1
Telephone:	Date: 06 - March - 2008
Re:	CCC:

Fish health check and virus screening
results for Icelandic Mowi stock
from Quarantine 2 Boot Lagoon Hatchery

Fish Health Service Report

Company: **Mainstream Canada**
Site: **Boat Lagoon Hatchery**
Work done: **Fish health check and virus screening**
Date submitted: **January 18, 2008**
Case number: **8-2401**
Contact: **Janus Wicikowski**
Pr#: **7518682**
Final report issued: **February 1, 2008**

Sample description: Thirty atlantic sac fry of the Icelandic Mowi stock were submitted to Microtek for a fish health check and virus screening.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA: TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-B). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C.

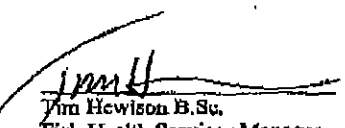
Results: No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay. No bacteria were cultured from any of the kidney samples tested. A slight amount of mixed bacteria were isolated from the gills of 17 fish.

Slight amount of bacteria =	1 - 10 bacterial colonies
Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

If you have any questions regarding these results, please call us.

Sincerely,


Hernán Pizarro B.Sc. Aquaculture
Fish Health Technician


Jim Hewison B.Sc.
Fish Health Services Manager

Microtek International Inc.

6761 Kirkpatrick Crescent, Sannichton, B.C. Canada V8M 1Z8

Tel (250) 652-4482, Toll Free in Canada 1-800 667-3062, Fax (250) 652-4802, e-mail services@microtek-intl.com

Fish Health Service Report

Company: **Mainstream Canada**
Site: **Boot Lagoon Hatchery**
Work done: **Fish health check and virus screening**
Date submitted: **February 20, 2008**
Case number: **8-2414**
Contact: **Janus Wickowski**
Pr#: **7518682**

Final report issued: **March 5, 2008**

Sample description: Thirty atlantic fry were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 0.4 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

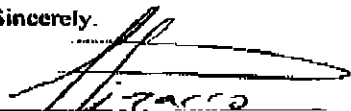
Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 19°C.

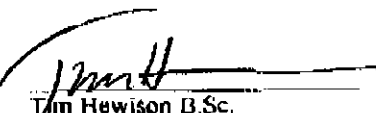
Results: No bacteria have been cultured from the kidneys of all 30 fish. Fungus was cultured from the gills of 7 fish. A slight amount of *Flavobacterium* sp. was cultured from the gills of 7 fish. A slight amount of mixed bacteria was cultured from the gills of 16 fish. No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay.

Slight amount of bacteria =	1 - 10 bacterial colonies
Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

If you have any questions regarding these results, please call us.

Sincerely,


Hernan Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

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Fish Health Service Report

Company: Mainstream Canada
Site: Boot Lagoon Hatchery
Work done: Fish health check and virus screening
Date submitted: March 27, 2008
Case number: 8-2430
Contact: Janus Wickowski
Pr#: 7518682

Final report issued: April 10, 2008

Sample description: Thirty atlantic fry were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 1.24 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA; TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Six pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelium Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 13°C.

Results: A slight amount of mixed bacteria were isolated from kidney samples for 3 fish. Fungus was cultured from the gills of 1 fish. A slight amount of *Flavobacterium* sp. was cultured from the gills of 2 fish. A slight amount of mixed bacteria was cultured from the gills of 16 fish. No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay.

Slight amount of bacteria =	1 - 10 bacterial colonies
Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

If you have any questions regarding these results, please call us.

Sincerely,


Hernán Pizarro B.Sc. Aquaculture
Fish Health Technician


Tim Hewison B.Sc.
Fish Health Services Manager

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Fish Health Service Report

Company: **Mainstream Canada**
Site: **Boat Lagoon Hatchery**
Work done: **Fish health check and virus screening**
Date submitted: **April 18, 2008**
Case number: **8-2443**
Contact: **Janus Wickowski**
Pr#: **7518682**

Final report issued: **May 2, 2008**

Sample description: Sixty atlantic fry were submitted to Microtek for a fish health check and virus screening. The average weight of the fish was 3.04 grams.

General bacteriology: Kidney tissues were plated onto Trypticase Soy Agar (TSA) media then incubated at 20°C. Kidney tissues were plated onto blood agar (BA: TSA with 5% blood) media then incubated at 16°C. Gill tissues were plated onto Trypticase Soy Agar media and Sabouraud Dextrose agar media then incubated at 20°C. Gill tissues were plated onto Tryptone yeast extract (TYES) media and incubated at 16°C.

Virus screening: Twelve pools of 5 fish each were screened for the presence of virus as outlined in the Canadian Fish Health Protection Regulations Manual of Compliance (section X.A-E). The samples were inoculated onto the EPC (Epithelioma Papillosum Cyprini) and CHSE-214 (Chinook Salmon Embryo) cell lines and allowed to incubate for 14 days at 15°C.

ISAV: Multi-organ samples were screened for the causative agent of Infectious salmon anemia (ISA) using the RT-PCR diagnostic test.

***Piscirickettsia salmonis*:** Liver and kidney tissues were screened for *Piscirickettsia salmonis* using the IFAT diagnostic test.

Results: No bacteria were isolated from any of the kidney samples tested from all 60 fish. A slight amount of mixed bacteria were isolated from the gills samples tested from all 60 fish. Fungus was isolated from the gills samples tested for 10 fish. None of the bacteria cultured were *Aeromonas salmonicida*, *Yersinia ruckeri* serotype 01 & 02, *Listonella anguillarum* serotype 01 & 02, or *Flavobacterium* spp.

No cytopathic effects were observed during the viral screening. These samples have been determined to be free of virus based on the scope and sensitivity of this assay.

No fluorescent cells matching the size and shape of the *P. salmonis* positive control were observed in any of the liver and kidney samples tested for all 60 fish.

None of the sixty fish samples tested by the ISAV RT-PCR had amplified PCR products corresponding to the base pair banding of the ISAV positive control.

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Moderate amount of bacteria =	11 - 20 bacterial colonies
Heavy amount of bacteria =	21 - too numerous to count

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Sincerely,


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Fish Health Technician


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