

Case No: 2023-0479 Date of visit: 01/11/2023

Time spent on site: 4 hours Main Inspector:

Site No: FS0621 Site Name: Loch A Chairn Bhain
Business No: FB0398 Business Name: Loch Duart Ltd

Case Types: 1 VMD 2 DIA 3 4 5 6

Water Temp (°C): 12.6 Thermometer No: T155 FHI 045 completed

Observations: Region: HI Water type: S CoGP MA M-6

Dead/weak/abnormally behaving fish present? Y If yes, see additional information/clinical score sheet.
Clinical signs of disease observed? Y If yes, see additional information/clinical score sheet.
Gross pathology observed? Y If yes, see additional information/clinical score sheet.
Diagnostic samples taken? Y

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Mort reports weeks 11/9/23 1.01% seal predation; 2/10/23 2.15% Seal predation; 9/10/23 1.57 (updated to 2.15%) Seal predation. Site fitted with high-density polyethylene - HDPE pen nets & predator net

gill health treating - finished last Monday. FW treatment.

wrasse wild caught - Skye and Scourie and local. Not vaccinated

Harvests dead haul to Dingwall. Recorded in Fish Talk

Morts DHK waste - whole fish in skips at Badcall shore base - transfer notes- of movements off to Fordyce in Portsoy.

All fish on site from Loch Duart - Loch na Thule and Duart Mhor Hatchery

Morts wk 38 0.86%; wk39 0.98%; wk40 2.15%, wk 41 2.15% - seal predation and gill issues (wks 40 and 41)

fish taken for VMD on starve for FW wellboat treatment

Site inspection, [REDACTED] and [REDACTED] (supervised). Sampling [REDACTED] observed by [REDACTED]

Case No: Site No:
 Date of Visit: Inspector(s):

Registration/Authorisation Details

1. Business/site details summary checked by site representative?
2. Changes made to details?

Site Details (include cleaner fish for all sections)

Total No facilities	<input type="text" value="14"/>	Facilities stocked	<input type="text" value="12"/>	No facilities	<input type="text" value="12"/>
Species	<input type="text" value="sal"/>	<input type="text" value="wrasse"/>			
Age group	<input type="text" value="S1 2023"/>	<input type="text" value="adult"/>			
No Fish	<input type="text" value="380,000"/>	<input type="text" value="8,000"/>			
Mean Fish Wt	<input type="text" value="900g"/>	<input type="text" value="85g"/>			
Next Fallow Date (Site)	<input type="text" value="Nov 2024"/>		Next Input Date (Site)	<input type="text" value="March 2025"/>	
Recent (last 4 wks) disease problems?			Y Any escapes (since last visit)?	<input type="text" value="N"/>	
If yes, detail:	<input type="text" value="AGD"/>				

Movement Records

1. Movement records available for inspection?
2. Date of last inspection:
3. Are records complete and correctly entered?
4. Are movement records available for dead fish and waste?
5. Are records complete and correctly entered?
6. Are health certificates for introductions (outwith GB) available?

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)?
- If yes, is there a system in place for maintenance of transportation records?

Mortality Records

1. Mortality records available for inspection?
2. How are mortalities disposed of?
 If other detail:
3. Mortality records complete and correctly entered?
4. Recent mortality (last 4 wks):
5. Evidence of recent increased/atypical mortalities?
 If yes, facility nos/no mortality per facility/no stock per facility/reason:
6. Seal predation and gill health across the site
6. Any other peaks in mortality during period checked?
 If yes, detail:
7. Have increased (unexplained) mortalities been reported to vet or FHI?
 If yes, detail action:
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.

Treatments and Medicines Records

- 1. Recent treatments (see comment)? N
 If yes, detail:
- If other, detail:
- 2. Medicines records available for inspection? Y
- 3. Are records complete and correctly entered? Y
- 4. Are fish in a withdrawal period? N
- 5. If yes, what treatment(s)?
- If other, detail:
- 6. Are medicines stored appropriately? Y

Biosecurity Records

- 1. Biosecurity records available for inspection?
- 2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?
- 3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased (unexplained)* mortality at the site been included?
- 4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and *how* and *when* that will be notified to Scottish Ministers?
- 5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?
- 6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?
- 7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?
- 8. Have the biosecurity procedures been adequately implemented on site?
- If no, detail:

Results of Surveillance

- 1. Has any animal health surveillance been carried out by, or on behalf of, the business? Y
- 2. If yes, are results available for inspection? Y
- 3. Any significant results? N
- If yes, detail (if not detailed under recent disease problems).

Records checked between:

Case no: Site No: Date of visit/
Sampling:

Priority samples: VI BA PA MG HI

Time sampling starts/ends: Inspector: VMD No.

Environmental conditions: 1 2 3 4 5

Summary samples HIST BA MG VI PA Total Samples

Add Fish/Pools - click

Pool/Fish No	F1	F2	F3	F4								
Fish nos	1	2	3	4	5-6	7	8	9				
Pool Group												
Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL				
Average weight	600g	600g	600g	600g	900g	900g	900g	900g				
Sex												
Water Type	SW	SW	SW	SW	SW	SW	SW	SW				
Stock Details		Loch Duart	Loch Duart	Loch Duart	Loch Duart	Loch Duart	Loch Duart	Loch Duart	Loch Duart			
	Stock Origin											
Facility No	11	11	11	11	4	5	3	2				

Case no: 2023-0479

Site No: FS0621

Method of killing: Percussive

Date of visit: 01/11/2023

Inspector(s):

Sheet Relevant: Y

S for strong presence: M for medium presence: W for weak presence

Fish Number		1	2	3	4				
Time sampled after death (if > 45 minutes)		1 hour	1hour	1 hour					
External Signs									
Behaviour	Moribund								
	Lethargic	S	S	S	S				
	Hanging vertical								
	Spiralling								
	Flashing								
	Loss of equilibrium								
Body	Dark								
	Distended abdomen								
	Anorexic			M					
	Scale Oedema								
Opercula	Shortened								
	Flared								
Haemorrhaging	Throat								
	Ventrum								
	Base of fins								
	Elsewhere								
Eyes	Exophthalmic								
	Enophthalmic (sunken)								
	Cataract								
	Haemorrhagic								
Gills	Pale	S	S	S	S				
	Zoned								
	Necrotic								
Lesions	Flank								
	Elsewhere								
Vent	Inflamed								
	Trailing faeces								
Lice Load	Estimate numbers	0	0	0	0				
Internal Signs									
Ascites	Clear								
	Bloody								
Oedema	In tissues								
Heart	Pale/anaemic								
	Granulomas								
	Deformed								
Liver	Petechial haem								
	Gross haem								
	Tissue breakdown								
	Enlarged								
	Colour number(s)								
	Granulomas								
	Lesions								
Pyloric caeca	Petechial haem								
	Tubules mauve								
	Lack of fat								
Spleen	Enlarged		M						
	Granulomas								
Gut	No food present	S	S	S	S				
	Yellow pseudo-faeces		S						
	External haem								
	Internal haem								
Body wall	Haemorrhaging								
Swim bladder	Haemorrhaging								
	Fluid filled								
Kidney	Swollen								
	Grey								
	Granular								
	Liquefied								
General	Parasites present								
	Anaemia								

Additional comments:

Patches on gills of all fish. F2 adhesions in body cavity, F3 adhesions and melanisation, F4 spinal deformation near tail and adhesions in body cavity

Sampling started 45 mins after fish killed and finished 1hour 45 mins after killing

Case No: **2023-0479** Date of visit: **01/11/2023**

Site No: **FS0621** Inspector: **[REDACTED]**

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 nd Insp
AGD PCR	4/4	07/11/2023		07/11/2023		30/11/2023		
IHN PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
IPN PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
ISA PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
PNST PCR	4/4	07/11/2023		07/11/2023		30/11/2023		
CMS PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
SPV PCR	4/4	07/11/2023		07/11/2023		30/11/2023		
SAV PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
VHS PCR	0/4	07/11/2023		07/11/2023		30/11/2023		
Pseudomonas fluorescens	4/4	14/11/2023				30/11/2023		
CGDH	4/4	20/11/2023		20/11/2023		30/11/2023		
EPIT	2/4	20/11/2023		20/11/2023		30/11/2023		
GPAT	4/4	20/11/2023		20/11/2023		30/11/2023		
PISH	4/4	20/11/2023		20/11/2023		30/11/2023		

Report Summary			
Case Type	Date	Insp	2 nd Insp
Diag	30/11/2023		
VMD	30/11/2023		



FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No FB0398

SITE No FS0621

CASE No 20230479

DATE OF VISIT 01/11/2023

SITE NAME Loch A Chairn Bhain

INSPECTOR [REDACTED]

Section 1: Summary

Loch A Chairn Bhain was visited for a routine inspection. During the inspection of the pens four fish were removed for diagnostic examination.

Histopathology examination revealed complex pathology. There was pathology consistent with salmonid rickettsial septicaemia (SRS), which was confirmed via qPCR. Gills displayed multifocal, mild, hyperplastic branchitis. Epitheliocystis (likely *Brachiomonas* sp.) was also observed. Gills tested positive by PCR for *Paranucleospora theridion*, salmon gill poxvirus and *Neoparamoeba perurans*.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

Loch A Chairn Bhain was visited for a routine inspection. Mortality levels for the site had been above the reporting threshold for the previous two weeks at 2.15% and had been attributed to seal predation and gill issues. On inspection of the pens several moribund and lethargic fish were observed in the corners. Four were removed for diagnostics examination.

Externally all fish displayed pale gills with white patches. Fish 3 was under weight and fish 4 had a spinal deformity near the tail.

Internally, fish 2 had an enlarged spleen and none of the fish had food present in the gut. Yellow pseudo faeces were present in the gut of fish 2. Fish 2, 3 and 4 had adhesions in the body cavity.

Samples

Samples were collected from four fish according to the table below:

Fish number	Facility number	Species	Stage	Origin
1-4	11	Atlantic salmon	2023 S1 @600g	Loch Duart

Results

Bacteriology: Kidney and gill material from four fish were inoculated onto appropriate media for the isolation of bacteria.

Pseudomonas fluorescens was identified on plates taken from gill material of all 4 fish. The level and purity of growth would not suggest this bacterium would be implicated as a primary pathogen.

Tissue samples from F1 and F2 were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (qPCR).

Piscirickettsia salmonis

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.47	23.83	23.81	23.74	POSITIVE
F2	22.95	26.84	26.84	26.91	POSITIVE

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (qPCR).

Salmon Gill Poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.85	26.57	26.39	26.50	POSITIVE
F2	22.24	24.48	24.49	24.53	POSITIVE
F3	22.36	25.20	25.10	25.08	POSITIVE
F4	22.69	27.58	27.48	27.59	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV).

Parasitology:

Tissue samples were tested for segments of nucleic acid indicative of the presence of the parasites specified below using real-time PCR (qPCR).

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.85	31.38	31.16	31.27	POSITIVE
F2	22.24	31.67	31.58	31.86	POSITIVE
F3	22.36	30.90	30.92	30.88	POSITIVE
F4	22.69	32.25	32.12	32.52	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.85	25.88	25.86	25.86	POSITIVE
F2	22.24	24.09	24.21	24.22	POSITIVE
F3	22.36	25.06	24.98	25.06	POSITIVE

F4	22.69	26.34	26.36	26.41	POSITIVE
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Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from four fish. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Filament hyperplasia and lamellar fusion, multifocal to diffuse, mild to marked (F1, F2, F3, F4) and several basophilic epithelial inclusions (likely epitheliocystis) (F3, F4). F2 also displayed vascular disturbances and evidence of erythrophagocytosis. Presence of few round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.) with necrosis at the centre of the filament observed in F1, F2, F3. Some lamellar telangiectasia with multifocal thrombosis (F4). Free blood among gill filaments (F1, F2).

Skin & Muscle: Within the normal range.

Heart: Minor to mild, multifocal myocarditis (F1, F2, F4). Mild epicarditis (F1, F2). Bulbus with an influx of inflammatory cells with presence of round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.).

Gut and pyloric caeca: Peritonitis, minor, (F1, F3) with necrosis and presence of few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F2).

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, mild, multifocal (F1, F2, F3) with presence of few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F3).

Kidney: Interstitial cell (haemopoietic) necrosis, mild to moderate, multifocal, and few intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.) (F1, F2, F3, F4), these bacteria stain Gram-negative. Some renal tubules displayed hyaline droplets (F1) and some eosinophilic amorphous material also observed (F3).

Spleen: Necrosis, multifocal, mild (F2, F3) with presence of few to several intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.). Capsulitis (F2) with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F2). Cuffing (F1). Evidence of some erythrophagocytosis (F1).

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:



Fish Health Inspector

Date: 30/11/2023

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at [Fish Health Inspectorate Service Charter - gov.scot \(www.gov.scot\)](http://www.gov.scot/Topics/marine/science)



FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0398	DATE OF VISIT	01/11/2023
SITE No	FS0621	SITE NAME	Loch A Chairn Bhain
CASE No	20230479	INSPECTOR	[REDACTED]

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

The above site was visited in accordance with the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015.

Samples were taken to be analysed for veterinary residues.

In addition, samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

Medicine records were inspected and found to be adequately maintained.

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:

Date: 30/11/2023

Fish Health Inspector

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