

Case No:  Date of visit:

Time spent on site:  Main Inspector:

Site No:  Site Name:   
 Business No:  Business Name:

Case Types: 1  2  3  4  5  6

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

Observations: Region: ST Water type: S CoGP MA: M-42

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

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

Case No: **2022-0488** Site No: **FS0683**  
 Date of Visit: **13/10/2022** Inspector(s): **[REDACTED]**

**Registration/Authorisation Details**

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

**Site Details (include cleaner fish for all sections)**

Total No facilities	<b>10</b>	Facilities stocked	<b>10</b>	No facilities inspected	<b>5</b>
Species	Salmon	Wrasse	Lump		
Age group	2021 Q3	2021 input August	2022 input March		
No Fish	265,388	495	436		
Mean Fish Wt	3 kg	40-200g	50-60g		
Next Fallow Date (Site)	<b>May / June 2023</b>		Next Input Date (Site)	<b>Sept 2023</b>	
Recent (last 4 wks) disease problems?				Y	Any escapes (since last visit)?
If yes, detail:	<b>Gill issues - AGD and anaemia, micro jellies as a precursor</b>				

**Movement Records**

1. Movement records available for inspection? **Y**  
 2. Date of last inspection: **30/03/2022**  
 3. Are records complete and correctly entered? **Y**  
 4. Are movement records available for dead fish and waste? **Y**  
 5. Are records complete and correctly entered? **Y**  
 6. Are health certificates for introductions (outwith GB) available? **N/A**

**Transport Records**

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

**Mortality Records**

1. Mortality records available for inspection? **Y**  
 2. How are mortalities disposed of? **Whole fish - Dundas Chemicals**  
 If other detail: **[REDACTED]**  
 3. Mortality records complete and correctly entered? **Y**  
 4. Recent mortality (last 4 wks): **3/10 - 6,303 (2.31%); 26/09 - 5,988 (2.15%); 19/09 - 5,709 (2.01%); 12/09 - [REDACTED]**  
 5. Evidence of recent increased/atypical mortalities? **Y**  
 If yes, facility nos/no mortality per facility/no stock per facility/reason:  
**Cages 1, 2, 8 and 10 have experienced higher mortality than other cages. Mainly associated with gill health and treatment losses. Up to 1,343 fish per week (4.9%) - 03/10/22**  
 6. Any other peaks in mortality during period checked? **Y**  
 If yes, detail: **Mortality rise since late July / early August - average of 2-3% for site per week. No other peaks. Lost 19% - 77,500 fish since last visit. Majority of mortality occurring since August.**  
 7. Have increased (unexplained) mortalities been reported to vet or FHI? **Y**  
 If yes, detail action: **sampling and visit where necessary**  
 8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet. **Y**

**Treatments and Medicines Records**

1. Recent treatments (see comment)?	<input type="checkbox"/>	Y
If yes, detail: T.M.S.		
If other, detail:		
2. Medicines records available for inspection?	<input type="checkbox"/>	Y
3. Are records complete and correctly entered?	<input type="checkbox"/>	Y
4. Are fish in a withdrawal period?	<input type="checkbox"/>	Y
5. If yes, what treatment(s)?	<input type="checkbox"/>	TMS
If other, detail:		
6. Are medicines stored appropriately?	<input type="checkbox"/>	Y

**Biosecurity Records**

1. Biosecurity records available for inspection?	<input type="checkbox"/>
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	<input type="checkbox"/>
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any <i>increased (unexplained)</i> mortality at the site been included?	<input type="checkbox"/>
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 <i>how</i> and <i>when</i> that will be notified to Scottish Ministers?	<input type="checkbox"/>
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	<input type="checkbox"/>
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.)?	<input type="checkbox"/>
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	<input type="checkbox"/>
8. Have the biosecurity procedures been adequately implemented on site?	<input type="checkbox"/>
If no, detail:	

**Results of Surveillance**

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

SAV PCR positive by blood serum; IPN, PD / SAV, CGD, HSMI, Moritella viscosa through histology ; PRV, IPN, AGD, SAV, Tenacibaculum maritimum - PCR.

Records checked between: 30/03/22 and 13/10/22

**Additional Case Information:**

Inspected cages 1, 2, 8, 9 and 10, based upon the higher recent mortality experienced on site.

Few lethargic were observed. Recent higher mortality now falling to lower levels. Recent freshwater treatments undertaken by the Ronja Star.

Few cleaner fish reported on site. Black losses accounting for this. Cleaner fish populations reported to be performing poorly for this cycle. Some losses also attributed to environmental cause and gill issues.

Recent FW treatments and hydolicer. No other treatments since last inspection. Last Slice in December 2021.

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								
	Fish nos	1	2	3								
	Pool Group											
Stock Details	Species	SAL	SAL	SAL								
	Average weight	3.0000	3.0000	3.0000								
	Sex	N/A	N/A	N/A								
	Water Type	SW	SW	SW								
	Stock Origin	Landcatch	Landcatch	Landcatch								
	Facility No	8	8	10								



Case no: 2022-0488

Site No: FS0683

Method of killing: Percussive

Date of visit: 13/10/2022

Inspector(s):

Sheet Relevant: Y

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

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





Additional comments:

Adhesions observed internally.

Site No: FS0683
Case No: 2022-0488
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology





# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0169	<b>DATE OF VISIT</b>	13/10/2022
<b>SITE No</b>	FS0683	<b>SITE NAME</b>	Gob a Bharra
<b>CASE No</b>	20220488	<b>INSPECTOR</b>	██████████

### Section 1: Summary

Following a report of increased mortality, an inspection of the site was conducted and diagnostic sampling undertaken. Increased mortality of over 8% had been experienced for the four weeks preceding the visit and had been attributed to amoebic gill disease and anaemia. Diagnostic samples were taken from 3 fish.

From the case description and information provided by the site and in conjunction with the clinical signs and gross pathology observed, the pathogens identified and histopathological observations from the fish sampled, it is most likely that complex gill disease is the significant factor responsible for the condition of the fish and the mortality being experienced on site.

Histopathology examination revealed multifocal, mild, chronic branchitis associated with complex gill issues. Epitheliocystis (likely *Ca. Branchiomonas cysticola*.) were observed. Mild, multifocal hepatic necrosis myocarditis, mild necrotizing nephritis and splenitis and minimal, multifocal myocarditis.

Molecular genetic testing revealed positive results for infectious pancreatic necrosis virus, Salmonid alphavirus, salmon gill poxvirus and *Paranucleospora theridion*.

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

An inspection was conducted in response to increased mortality experienced on site, although mortality was reported to be falling to lower levels following a number of freshwater treatments. A few lethargic fish were observed across the site during the visit and three of these were removed for further examination and diagnostic sampling. All three fish appeared lethargic, dark in terms of body colour and with respect to fish 1 and 3 anorexic. The gills of fish 2 appeared pale, zoned in fish 1 and necrotic in both fish 2 and fish 3. Internal observations revealed petechial haemorrhaging across the liver of fish 1 and fish 3. No food was present within the gut of all three fish with evidence of yellow faecal casts in fish 1 and 2.

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## Samples

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

Fish number	Facility number	Species	Stage	Origin
1	8	Atlantic salmon	3 kg / 2021 Q3	Landcatch
2	8	Atlantic salmon	3 kg / 2021 Q3	Landcatch
3	10	Atlantic salmon	3 kg / 2021 Q3	Landcatch

## Results

**Bacteriology:** Kidney and gill material from all three fish was inoculated onto appropriate media for the isolation of bacteria.

No significant bacteria were isolated.

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

Infectious pancreatic necrosis virus (IPNV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	15.72	34.24	35.26	34.19	POSITIVE
F3	-	-	-	-	Negative

Salmonid alphavirus (SAV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	16.01	35.05	35.16	34.43	POSITIVE

Salmonid gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	23.76	26.20	26.22	26.03	POSITIVE
F2	22.85	25.76	25.80	25.54	POSITIVE
F3	22.99	28.84	28.95	28.75	POSITIVE

The results were negative for infectious haematopoietic necrosis virus (IHNV), infectious salmon anaemia virus (ISAV), piscine myocarditis virus (PMCV) and viral haemorrhagic septicemia virus (VHSV).

R09

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

*Paranucleospora theridion*

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	23.76	29.08	29.09	29.02	POSITIVE
F2	22.85	27.91	27.99	28.14	POSITIVE
F3	22.99	25.02	24.81	25.25	POSITIVE

The samples tested negative for *Neoparamoeba perurans* (AGD).

**Histology:** Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from all three fish. The tissue samples were fixed in 10% neutral buffered formalin prior to examination by light microscopy. The following histopathological changes were observed:

Gill: Lamellar hyperplasia, multifocal, mild in all fish. Filament branchitis, moderate, chronic, multifocal, and mild haemorrhage (F1 & F3). Lamellar telangiectasia with multifocal thrombosis in all fish. A structure resembling plankton-like was observed associate with the epithelium in F2. Free blood among gill filament in all fish.

Skin & Muscle: Within the normal range.

Heart: Minimal, multifocal myocarditis (F1, F2).

Gut and pyloric caeca: Within the normal range.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, minor to mild and multifocal (F1, F2), sinusoidal congestion in F1, some mild, diffuse hepatocellular vacuolation (macrovisicules) (F1- F3).

Kidney: Some renal tubular dilation, some shrunken glomeruli and interstitial cell (haemopoietic) necrosis (F1).

Spleen: Foci of cellular necrosis, mild, multifocal (F2), minor cuffing (F1).

Signed:



Fish Health Inspector

Date: 8 December 2022

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at <https://www.gov.scot/publications/fish-health-inspectorate-service-charter/>

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Gob a Bharra - 20220488







F1 Gills – slightly zoned

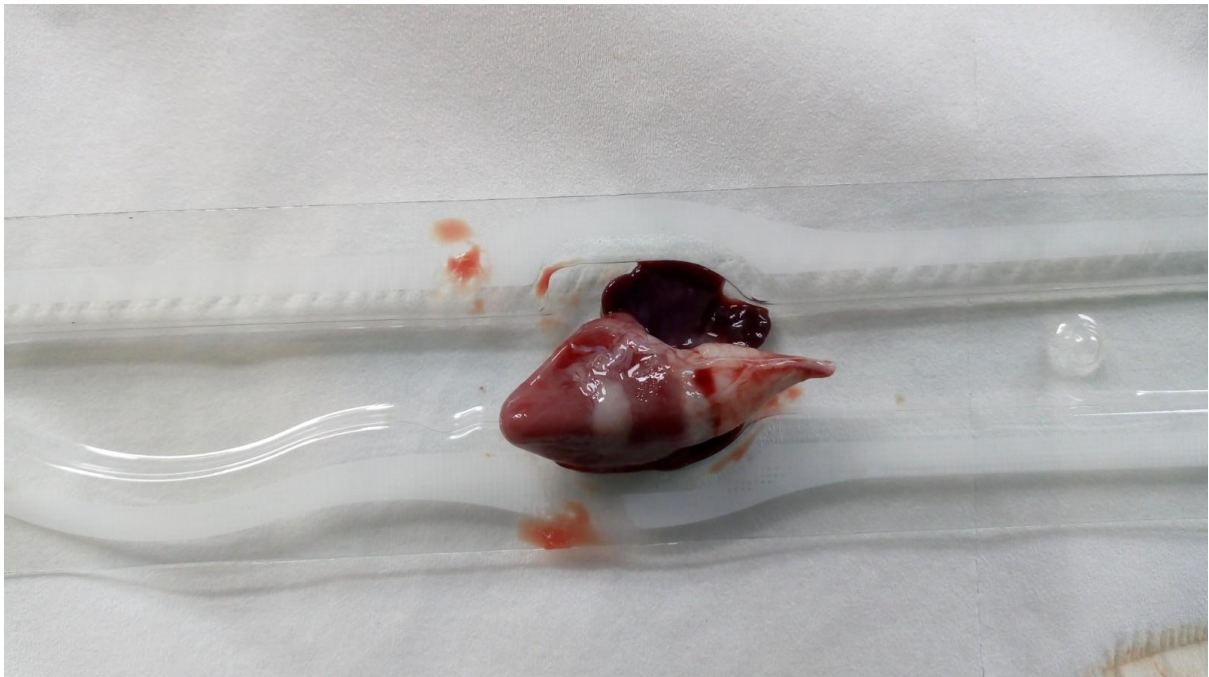


F2 Gills – pale and necrotic

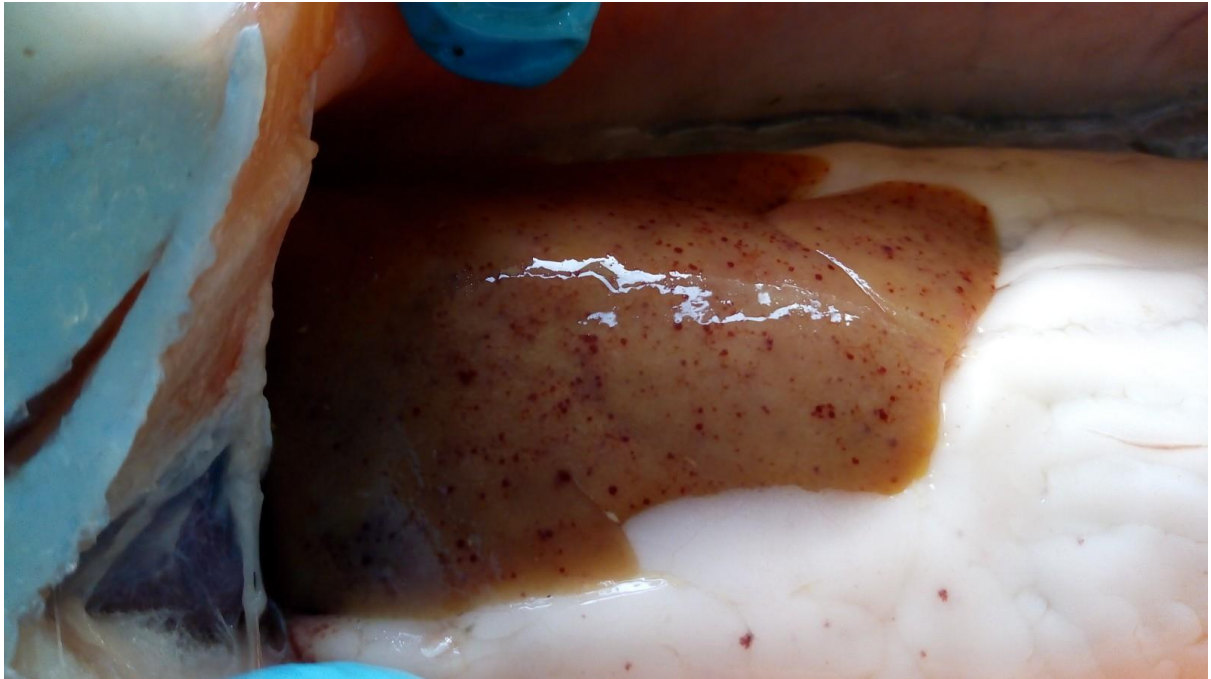




F3 Gills - necrotic



Heart from one of the fish sampled with white area over tissue



F1 Liver – Petechial haemorrhaging