

Case No:	<input type="text" value="2023-0525"/>	Date of visit:	<input type="text" value="16/11/2023"/>			
Time spent on site:	<input type="text" value="3h"/>	Main Inspector:	<input type="text" value=""/>			
Site No:	<input type="text" value="FS0858"/>	Site Name:	<input type="text" value="Fada"/>			
Business No:	<input type="text" value="FB0125"/>	Business Name:	<input type="text" value="Scottish Sea Farms Ltd"/>			
Case Types:	1 <input type="text" value="REP"/>	2 <input type="text" value="DIA"/>	3 <input type="text" value=""/>	4 <input type="text" value=""/>	5 <input type="text" value=""/>	6 <input type="text" value=""/>
Water Temp (°C):	<input type="text" value="11.3"/>	Thermometer No:	<input type="text" value="T173"/>	FHI 045 completed	<input type="text" value=""/>	
Observations:	Region:	HI	Water type:	S	CoGP MA:	M-10
Dead/weak/abnormally behaving fish present?	<input type="text" value="y"/>	If yes, see additional information/clinical score sheet.				
Clinical signs of disease observed?	<input type="text" value="y"/>	If yes, see additional information/clinical score sheet.				
Gross pathology observed?	<input type="text" value="y"/>	If yes, see additional information/clinical score sheet.				
Diagnostic samples taken?	<input type="text" value="y"/>					
UNI/REG only - if unable to carry out intended visit detail reason below:						
<input type="text" value=""/>						

**Additional Case Information:**

Peroxide treatments in October (tarp), September (tarp), August (wellboat) and July (tarp). A further treatment is scheduled for 19/11/2023

One moribund and one runt removed for diagnostic sampling. A number of lethargic fish were observed in all cages but displayed a good startle response so could not be caught.

AGD scores increased in July mortalities started increasing in week 34 peaking in week 38 (3,317 (1.92%)) and 39 (3,756 (2.19%)). Mortality numbers rapidly increased in week 41 peaking in week 43 (26,479 (14.48%)) and week 44 27943 (17.80%) before reducing in week 45 (2,079 (1.56%)) however this week numbers are increasing with 4,921 (3.68%) recorded to date 16/11/2023.

Wrasse mortalities last four weeks: wk 46 8 (0.12%), wk 45 16 (0.31%), wk 44 23 (0.45%), wk 43 5 (0.10%).

Case No: **2023-0525** Site No: **FS0858**  
 Date of Visit: **16/11/2023** Inspector(s): **[REDACTED]**

**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	<b>7</b>	Facilities stocked	<b>6</b>	No facilities inspected	<b>6</b>
Species	<b>SAL</b>	<b>WRS</b>			
Age group	<b>2023 q2</b>	<b>wild</b>			
No Fish	<b>86,516</b>	<b>6,000</b>			
Mean Fish Wt	<b>1.5kg</b>	<b>N/A</b>			
Next Fallow Date (Site)	<b>May 2024</b>		Next Input Date (Site)	<b>unsure</b>	
Recent (last 4 wks) disease problems?		<b>Y</b>	Any escapes (since last visit)?		<b>N</b>
If yes, detail:	<b>AGD</b>				

**Movement Records**

- 1. Movement records available for inspection?
- 2. Date of last inspection: **26/04/2022**
- 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? **Whole fish - Dundas Chemicals**
- If other detail:
- 3. Mortality records complete and correctly entered?
- 4. Recent mortality (last 4 wks): **see additional information**
- 5. Evidence of recent increased/atypical mortalities?
- If yes, facility nos/no mortality per facility/no stock per facility/reason: **see additional information**
- 6. Any other peaks in mortality during period checked?
- If yes, detail: **see additional information**
- 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)?  Y  
 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?  Y  
 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?  Y  
 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										
	Fish nos	1	2										
	Pool Group	P1	P1										
Stock Details	Species	SAL	SAL										
	Average weight	1.4kg	300g										
	Sex	N/A	N/A										
	Water Type	SW	SW										
		Barcaldine smolt unit	Barcaldine smolt unit										
	Stock Origin												
	Facility No	2	1										

11/2023 Additional Sample Information:

Duplicate RNA later sample taken for f1 due to observed clinical signs

2

Total Tests assigned

3


Case no: 2023-0525

Site No: FS0858

Method of killing: Percussive

Date of visit: 16/11/2023

Inspector(s):

Sheet Relevant: Y

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

<b>Fish Number</b>														
<b>Time sampled after death (if &gt; 45 minutes)</b>														
<b>External Signs</b>														
<b>Behaviour</b>	<b>Moribund</b>	S	S											
	<b>Lethargic</b>													
	<b>Hanging vertical</b>	S												
	<b>Spiralling</b>													
	<b>Flashing</b>													
	<b>Loss of equilibrium</b>													
<b>Body</b>	<b>Dark</b>	m	s											
	<b>Distended abdomen</b>													
	<b>Anorexic</b>													
	<b>Scale Oedema</b>													
<b>Opercula</b>	<b>Shortened</b>													
	<b>Flared</b>													
<b>Haemorrhaging</b>	<b>Throat</b>													
	<b>Ventrum</b>													
	<b>Base of fins</b>													
	<b>Elsewhere</b>													
<b>Eyes</b>	<b>Exophthalmic</b>													
	<b>Enophthalmic (sunken)</b>													
	<b>Cataract</b>													
	<b>Haemorrhagic</b>													
<b>Gills</b>	<b>Pale</b>													
	<b>Zoned</b>	m	m											
	<b>Necrotic</b>													
<b>Lesions</b>	<b>Flank</b>													
	<b>Elsewhere</b>													
<b>Vent</b>	<b>Inflamed</b>													
	<b>Trailing faeces</b>													
<b>Lice Load</b>	<b>Estimate numbers</b>													
<b>Internal Signs</b>														
<b>Ascites</b>	<b>Clear</b>													
	<b>Bloody</b>													
<b>Oedema</b>	<b>In tissues</b>													
<b>Heart</b>	<b>Pale/anaemic</b>													
	<b>Granulomas</b>													
	<b>Deformed</b>	m	m											
<b>Liver</b>	<b>Petechial haem</b>													
	<b>Gross haem</b>													
	<b>Tissue breakdown</b>													
	<b>Enlarged</b>													
	<b>Colour number(s)</b>		8	5										
	<b>Granulomas</b>													
	<b>Lesions</b>													
<b>Pyloric caeca</b>	<b>Petechial haem</b>													
	<b>Tubules mauve</b>													
	<b>Lack of fat</b>													
<b>Spleen</b>	<b>Enlarged</b>	m	m											
	<b>Granulomas</b>													
<b>Gut</b>	<b>No food present</b>													
	<b>Yellow pseudo-faeces</b>													
	<b>External haem</b>													
	<b>Internal haem</b>													
<b>Body wall</b>	<b>Haemorrhaging</b>													
<b>Swim bladder</b>	<b>Haemorrhaging</b>													
	<b>Fluid filled</b>													
<b>Kidney</b>	<b>Swollen</b>													
	<b>Grey</b>													
	<b>Granular</b>													
	<b>Liquefied</b>													
<b>General</b>	<b>Parasites present</b>													
	<b>Anaemia</b>													

Case no: 2023-0525

Date of visit: 16/11/2023

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<b>Kidney</b>	<b>Swollen</b>													
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	<b>Liquefied</b>													
<b>General</b>	<b>Parasites present</b>													
	<b>Anaemia</b>													



Additional comments:





# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0125	<b>DATE OF VISIT</b>	16/11/2023
<b>SITE No</b>	FS0858	<b>SITE NAME</b>	Fada
<b>CASE No</b>	20230525	<b>INSPECTOR</b>	██████████

### Section 1: Summary

The site was inspected following reports of increased mortalities occurring. On inspection of stocks lethargic fish were observed in all pens but these could not be caught by hand net, two moribunds were observed and removed for further examination and subsequent diagnostic sampling.

Histopathological examination revealed features consistent with mild to moderate, multifocal, hyperplastic branchitis, amoebic gill disease (AGD) (confirmed by qPCR). Hepatocellular necrosis and minor myocarditis also observed.

Gill samples tested positive for the gill related pathogens: *Paranucleospora theridion* and salmon gill poxvirus (SGPV).

*Yersinia ruckeri* was identified on plates taken from kidney material, the level and purity of growth would not suggest it would be implicated as a primary source of morbidity.

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

The site was inspected following reports of increased mortality occurring on site, attributed to AGD. A peak of 17.80% (27943) was recorded in week 44 before reducing in the following weeks however numbers remained elevated.

On inspection of the stocks there were lethargic fish noted in all pens however these could not be caught as they displayed a good startle response. Two moribund fish were observed and removed for diagnostic sampling.

F1 was hanging vertically in the pen, both fish had darkened bodies and zoned gills.

Internally both fish had deformed hearts with splenomegaly evident. The liver of F1 was dark in appearance.

#### Samples

Samples were collected from F1-2 according to the table below:

R09

Fish number	Facility number	Species	Stage	Origin
1	2	Atlantic salmon	1.4kg 2023 Q2	Barcaldine Smolt Unit
2	1	Atlantic salmon	300g 2023 Q2	Barcaldine Smolt Unit

## Results

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

The following bacteria were isolated:

- *Yersinia ruckeri* (kidney F1)

**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	19.36	34.48	34.49	34.97	POSITIVE
F2	-	-	-	-	Negative

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 septicaemia 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).

### *Paranucleospora theridion*

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.36	25.75	26.05	25.83	POSITIVE
F2	18.85	29.54	29.32	29.63	POSITIVE

### *Neoparamoeba perurans* (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.36	22.74	22.72	22.76	POSITIVE
F2	18.85	27.83	27.73	27.49	POSITIVE

**Histology:** Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney taken from F1 and 2. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplastic branchitis, ranging from mild to moderate, multifocal (F1-F2) with areas of cellular necrosis (F1). Presence of several amoeboid cells resembling *Neoparamoeba perurans* observed in F1 and few basophilic epithelial inclusions (likely epitheliocystis) F1 and F2. Some cell debris among gill filaments.

Skin & Muscle: Within normal range.

Heart: Minor to mild, multifocal, myocarditis (F1, F2). Mild epicarditis (F1).

Gut and pyloric caeca: Reduced abdominal adipose tissue (F2).

Pancreas: Within normal range.

Liver: Hepatocellular necrosis, mild, multifocal (F1) with focal sinusoidal congestion and haemorrhage (F1), hepatocellular vacuolation (macrovesicles), mild, diffuse (F2).

Kidney: Interstitial cell (haemopoietic) necrosis, mild, multifocal with circulating inflammatory cells (F1) and increase numbers of melanomacrophages (F2).

Spleen: Focal area of necrosis and some cuffing (F1), slightly congested (F2).

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

Signed:



Date: 12/12/2023

Fish Health Inspector

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 \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)



F1-2



F1-2



F1



F2



F1





F2