

Case No:	<input type="text" value="2023-0528"/>	Date of visit:	<input type="text" value="28/11/2023"/>			
Time spent on site:	<input type="text" value="5.5hrs"/>	Main Inspector:	<input type="text" value=""/>			
Site No:	<input type="text" value="FS0209"/>	Site Name:	<input type="text" value="Scallastle"/>			
Business No:	<input type="text" value="FB0125"/>	Business Name:	<input type="text" value="Scottish Sea Farms Ltd"/>			
Case Types:	1 <input type="text" value="DIA"/>	2 <input type="text" value="REP"/>	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="T309"/>	FHI 045 completed	<input type="text" value=""/>	
Observations:	Region:	ST	Water type:	S	CoGP MA	M-35
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:

Additional Case Information:

Salmon came on from Barcaldine Smolt Unit (FS1328) and had been performing well this cycle with good appetite and growth recorded across all cages. However, in late October, Storm Babet passed through the site with a strong easterly wind for 3 consecutive days. A sharp decline in appetite was observed across the inshore cages (1-8). AGD, PGD, bacterial infections (SRS and Furunculosis) and PMCV had been detected on site. The upwell of sediment and debris during the storm agitated the gills and subsequently resulted in an increase in mortalities across the site in wks42 and 43.

Cage 5 underwent a peroxide treatment 2 weeks ago following the period of bad weather. The peroxide treatment, combined with the health issues on site and poor environmental conditions, a significant mortality event occurred the following week (wk45), with most of the mortalities on site originating from cage 5.

Cages 1-8 were FW treated last week (wk46) for 4hrs. Appetite is still below expected levels, but mortality has dropped significantly from the previous week, although remains above the reporting threshold.

A slice treatment was completed in June this year, but since then, only FW treatments and one peroxide treatment have been completed.

Wildcaught wrasse from Skye and Orkney are also stocked on site. Mortality for the wrasse since the last inspection was:
Wk42 2023: 1.61%, Wk43: 8.06%, wk44: 11.45%, wk45: 21.13%, wk46: 8.85%

Company vets last visited the site on 17/10/23. Swim bladders were pink in colour, consistent with furunculosis and external lesions consistent with SRS. Pale gills were observed on most fish. Full health checks will be completed tomorrow and will include bloods, gill swabs, kidney swabs, histology samples and samples for PCR. Site is currently feeding a Biomar skin assist diet.

A FW wellboat was on site during the inspection and was on the last cage. The entire site had been FW treated over the last 2 week period. The crowd was calm and controlled. An aerator was also present.

The general population of fish across the site appeared in good body condition but were lethargic. Several lethargic and moribund fish were observed near the surface in all cages, some with lesions and physical damage to varying extents. These fish were removed and humanely dispatched. Five of these fish were sampled for diagnostics.

It is worth noting that site staff had already been around the site in the morning to remove moribund fish.

Inspection and paperwork completed by [REDACTED], observed by [REDACTED]

Case No: **2023-0528** Site No: **FS0209**

Date of Visit: **28/11/2023** 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	16	Facilities stocked	15	No facilities inspected	16
Species	SAL	WRA			
Age group	23 Q1	Wildcaught			
No Fish	434,470	21,000			
Mean Fish Wt	2.6kg	145g			
Next Fallow Date (Site)	August 24		Next Input Date (Site)	January 25	
Recent (last 4 wks) disease problems?			<input checked="" type="checkbox"/>	Any escapes (since last visit)?	<input type="checkbox" value="N"/>
If yes, detail:	See additional information.				

Movement Records

- 1. Movement records available for inspection?
- 2. Date of last inspection: **19/04/2023**
- 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? **Biogas - Barkip**
- If other detail: **[REDACTED]**
- 3. Mortality records complete and correctly entered?
- 4. Recent mortality (last 4 wks): **WK43 2023: 25,960 (4%), WK44: 29,662 (5.6%), Wk45: 49,624 (9.9%), Wk46: 17,813 (3.9%) and wk47: 12,248 (2.8%).**
- 5. Evidence of recent increased/atypical mortalities?
- If yes, facility nos/no mortality per facility/no stock per facility/reason: **Attributed to a combination of health challenges on site: SRS, Furunculosis, AGD, PGD and PMCV**
- 6. Any other peaks in mortality during period checked?
- If yes, detail: **[REDACTED]**
- 7. Have increased (unexplained) mortalities been reported to vet or FHI?
- If yes, detail action: **[REDACTED]**
- 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)?	<input type="checkbox"/>	Y
If yes, detail: <input type="text" value="Optomease Peroxide"/>		
If other, detail: <input type="text"/>		
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"/>	N
5. If yes, what treatment(s)?	<input type="text"/>	
If other, detail: <input type="text"/>		
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: <input type="text"/>	

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). <input type="text" value="PMCV, Furunculosis and SRS detected on site."/>		

Report dated: .

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	F5							
	Fish nos	1	2	3	4	5							
	Pool Group	P1	P2	P3	P4	P5							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	2.6kg	2.6kg	2.6kg	2.6kg	2.6kg							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328	Barcaldine Smolt Unit FS1328							
	Facility No	6	1	2	3	7							

Case no: 2023-0528

Site No: FS0209

Method of killing: Percussive

Date of visit: 28/11/2023

Inspector(s):

Sheet Relevant: Y

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

Fish Number		45mins	60mins	75mins	90mins	105min				
Time sampled after death (if > 45 minutes)		45mins	60mins	75mins	90mins	105min				
External Signs										
Behaviour	Moribund	S	S	S	S	S				
	Lethargic	S	S	S	S	S				
	Hanging vertical									
	Spiralling									
	Flashing									
	Loss of equilibrium									
Body	Dark									
	Distended abdomen									
	Anorexic									
	Scale Oedema									
Opercula	Shortened									
	Flared									
Haemorrhaging	Throat	W		W	W	W				
	Ventrum	W	W	W	W					
	Base of fins									
	Elsewhere	W				W				
Eyes	Exophthalmic									
	Enophthalmic (sunken)									
	Cataract									
	Haemorrhagic									
Gills	Pale	S	S	S	S	S				
	Zoned									
	Necrotic	W	M		M	W				
Lesions	Flank				S					
	Elsewhere					M				
Vent	Inflamed	W		W	M	W				
	Trailing faeces									
Lice Load	Estimate numbers		0	0	0	0	0			
Internal Signs										
Ascites	Clear									
	Bloody									
Oedema	In tissues									
Heart	Pale/anaemic	S	S	S	S	S				
	Granulomas									
	Deformed									
Liver	Petechial haem									
	Gross haem									
	Tissue breakdown									
	Enlarged			W	M	W				
	Colour number(s)		3	5	4	3	2			
	Granulomas									
	Lesions									
Pyloric caeca	Petechial haem				M					
	Tubules mauve									
	Lack of fat									
Spleen	Enlarged	M		W	W	M				
	Granulomas									
Gut	No food present			W						
	Yellow pseudo-faeces	M	M		W	W				
	External haem									
	Internal haem									
Body wall	Haemorrhaging	W		W						
Swim bladder	Haemorrhaging	W		M						
	Fluid filled									
Kidney	Swollen									
	Grey	W	W	W	W	W				
	Granular									
	Liquefied					W				
General	Parasites present									
	Anaemia	S	S	S	S	S				

Additional comments:

F4 - fluid filled sac attached to the heart. The left eye had popped and the right eye was completely absent.

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0125	DATE OF VISIT	28/11/2023
SITE No	FS0209	SITE NAME	Scallastle
CASE No	20230528	INSPECTOR	

Section 1: Summary

The site was inspected due to recent mortality reports above the reporting threshold, all attributed to poor gill health, cardiomyopathy syndrome (CMS) and bacterial infections (*Piscirickettsia salmonis* (salmon rickettsial syndrome (SRS)) and *Aeromonas salmonicida* (furunculosis)). Five fish were selected for diagnostic sampling.

Samples were screened for infectious salmon anaemia virus (ISAV) by QPCR as part of the surveillance program for the control of listed diseases. The samples tested positive for infectious salmon anaemia virus (ISAV) by QPCR (Cp levels 38-40) and the sequence data confirmed the presence of ISAV HPR0, the non-pathogenic form of the virus. In relation to the ISAV HPR0 result obtained, along with the observations made on site, no further statutory action is required to be taken in this case, ISAV HPR0 not being a disease listed in The Aquatic Animal Health (Scotland) Regulations 2009.

Histopathology examination revealed multifocal splenitis, nephritis potentially associated with Gram-negative bacterial infection (likely *Aeromonas* sp.) and mild myocarditis which could be related to the presence of piscine myocarditis virus (PMCV), confirmed by qPCR. Mild, multifocal, amoebic gill disease was observed. *Neoparamoeba perurans*, *Paranucleospora theridion* and Salmon gill poxvirus (SGPV) were all confirmed by qPCR.

Yersinia ruckeri, *Moritella viscosa* and two species of *Vibrio* were identified. The level and purity of growth would suggest that these primary fish pathogens were implicated in 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

Scallastle was inspected due to recent, consecutive mortality reports above the reporting criteria, all attributed to poor gill health, CMS and bacterial infections, which resulted in the loss of 135,307 fish in the 5-week period prior to the inspection. At the time of inspection, the site was stocked with 434,470 Q1 Atlantic salmon at an average weight of 2.6kg originating from the Barcaldine Smolt Unit (FS1328). All cages were inspected and the general population of fish across the site appeared in good body condition but were lethargic. Several lethargic and moribund fish were observed near the surface in all cages, some with skin lesions and physical damage to varying extents. These fish were removed and humanely dispatched. Five of these fish were sampled for diagnostics.

Externally, haemorrhaging was observed along the throat of F1, F3-5, along the ventrum of F1-4 and elsewhere on F1 and F5. The left eye of F4 had burst and the right eye was completely absent. The gills of all five fish were pale/anaemic and necrosis of the gills was noted in F1-2 and F4-5. Skin and muscle lesions were observed on the flank of F4 and elsewhere on F5.

R09

Inflammation of the vent was observed on F1 and F3-5. No sea lice were observed on any of the five fish. Internally, the hearts of all five fish were pale/anaemic and the liver was enlarged in F3-5. Petechial haemorrhaging was observed on the pyloric caeca of F4 and the spleen was also enlarged in F1 and F3-5. Yellow pseudo-faeces were present in the guts of F1-2 and F4-5. Haemorrhaging was observed in the body wall and in the swim bladder of F1 and F3. The kidney was slightly grey in colour in all five fish and was mildly liquefied in F5.

Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	6	Atlantic salmon (<i>Salmo salar</i>)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F2	1	Atlantic salmon (<i>Salmo salar</i>)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F3	2	Atlantic salmon (<i>Salmo salar</i>)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F4	3	Atlantic salmon (<i>Salmo salar</i>)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)
F5	7	Atlantic salmon (<i>Salmo salar</i>)	2023 Q1 2.6kg	Barcaldine Smolt Unit (FS1328)

Results

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

The following bacteria were isolated:

- *Yersinia ruckeri* (Kidney & Gill: F1, F3)
- *Moritella viscosa* (Kidney: F5)
- *Vibrio* sp. (Kidney and Lesion: F4)
- *Vibrio* sp. (Lesion: F4 and F5)

From the tests conducted, we do not have evidence of resistance to oxytetracycline, sulphamethoxazole/trimethoprim or florfenicol. However, from the tests conducted, we have evidence which may indicate some resistance to amoxicillin.

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 salmon anaemia virus (ISAV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	-	-	-	-	Negative
F4	-	-	-	-	Negative
F5	17.82	38.89	40.00	38.14	POSITIVE

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Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	14.72	19.24	19.46	19.24	POSITIVE
F4	14.84	20.07	20.10	20.17	POSITIVE
F5	-	-	-	-	Negative

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.92	28.86	28.84	28.81	POSITIVE
F2	19.39	24.76	24.77	24.76	POSITIVE
F3	19.78	29.14	29.10	28.96	POSITIVE
F4	20.01	25.44	25.60	25.61	POSITIVE
F5	19.30	27.49	27.46	27.44	POSITIVE

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

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	19.92	31.66	31.85	31.68	POSITIVE
F2	19.39	27.05	27.24	27.35	POSITIVE
F3	19.78	29.34	29.45	29.35	POSITIVE
F4	20.01	28.92	28.58	28.64	POSITIVE
F5	19.30	31.46	31.35	31.85	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.92	28.33	28.42	28.98	POSITIVE
F2	19.39	27.71	27.59	27.47	POSITIVE
F3	19.78	26.39	26.32	26.38	POSITIVE
F4	22.10	30.37	30.31	30.66	POSITIVE
F5	19.30	26.03	26.04	26.21	POSITIVE

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

Histopathological examination revealed the following:

Gill: Lamellar hyperplasia and fusion, mild, multifocal (F1-F4) with some vascular disturbances (F1) and small foci of cellular necrosis (F2), ranging from few to several amoeboid cells resembling *Neoparamoeba perurans* (F1, F2, F4). Some aneurysmal dilation/telangiectasia (F4). Some autolytic artefacts observed in F1.

Skin & Muscle: Absence of epidermal layer (F3) and dermal outer layer with Gram-negative bacteria associated.

Heart: Myocarditis, multifocal, mild (F1, F3) and minor foci of cell infiltration (F2, F3) and with Gram-negative bacteria (F3). Areas of light H&E stain observed in the compact layer of the ventricle chamber (F1).

Gut and pyloric caeca: Within the normal range.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, ranging from minor to mild, multifocal (F1) and vessels filled with circulating cell with Gram-negative bacteria (F1). F4 displayed some healing features. Congested vessels observed in F2. Some hepatocellular vacuolation (macrovesicles).

Kidney: Interstitial necrosis, mild, multifocal (F1, F3, F4, F5) with occasional rod-shaped Gram-negative bacteria (F1, F3, F4) also observed within the glomeruli (F1).

Spleen: Necrotising splenitis (F1, F3, F5) with rod-shaped Gram-negative bacteria (F1, F3, F4 F5). Some cuffing (F4).

Section 3: Issues Raised

During the inspection under the Aquatic Animal Health (Scotland) Regulations 2009, the information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated. The following records were also inspected to ensure that the conditions of authorisation for your Aquaculture Production Business (APB) are being met:

- Incorrect mortality data provided during inspection. Cross referenced with mortality reporting and satisfied that accurate data is being recorded and reported. No further action is required.

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

Signed:



Date: 23/01/2024

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](http://www.gov.scot) (www.gov.scot)

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F1 -

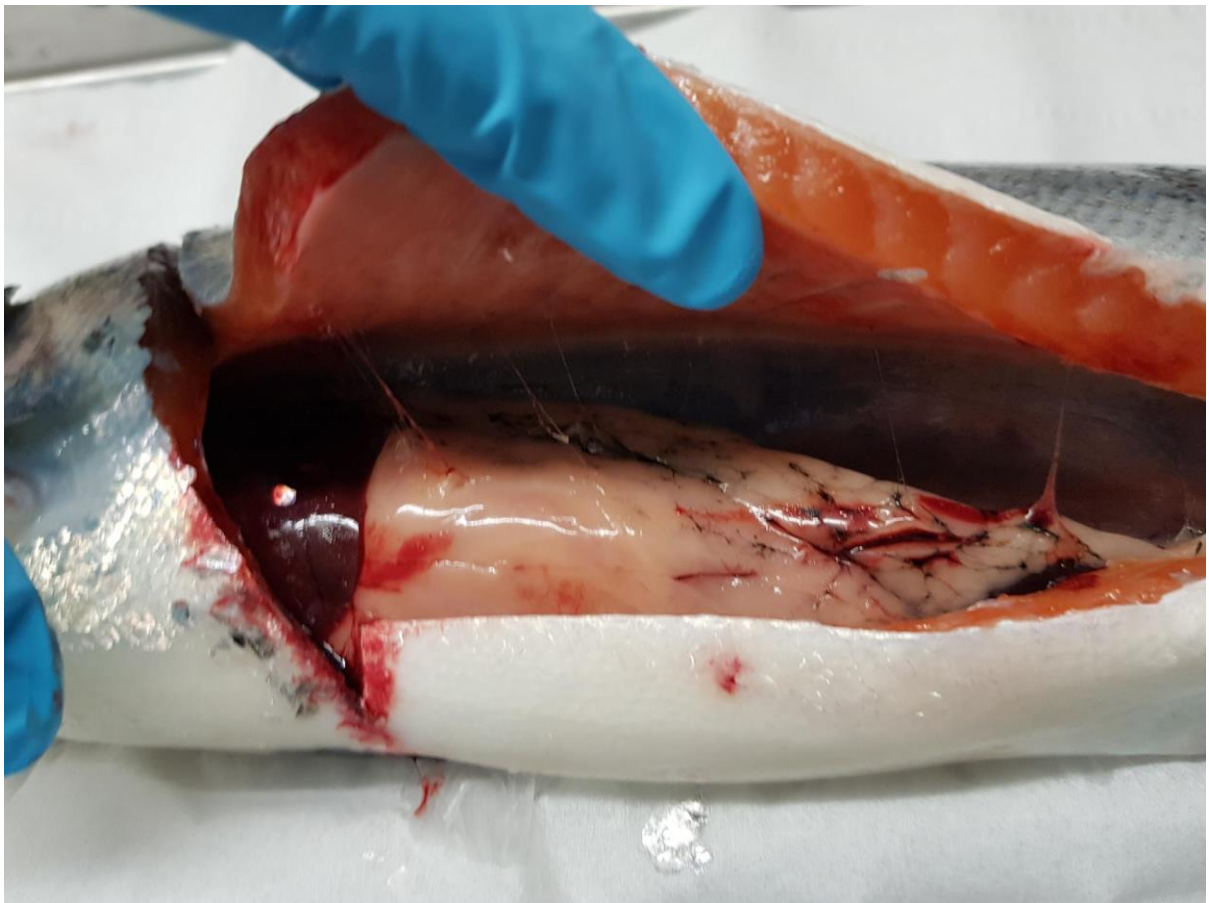






F2 -





F3 -







F4 -







F5 -





