

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-45

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:

**Additional Case Information:**

Site inspection and paperwork conducted by [REDACTED], observed by [REDACTED] & UKAS auditors.

The site is stocked with 14 pens of 2023 Q1 SAL, stocked from Applecross (FS1336), Loch Langavat (FS0149), Hebridean Smolts (FS0394) and Ormsary Hatchery (FS0575). The site is also stocked with a mix of wild caught ballan wrasse (Scotland) and farmed wrasse from Otterferry (FS0001).

Pen numbers and stock origin : Applecross - 1, 10,11 & 14. Loch Langavat - 2,3,4,5 & 6. Hebridean smolt - 7,8 & 9. Ormsary - 12 & 13.

Cleanerfish mortality - Week 44 (150, 0.27%), Week 43 (167, 0.30%), Week 42 (42, 0.08%), Week 41 (633, 1.13%)

Cleanerfish peaks in mortality : Week 15 (1.75%), Week 17 (3.63%). Mortality events associated with failures post input.

A period of low level mortality occurred onsite between weeks 35 and 41 of 2023. The site reported mortality just above the 1% reporting level to the FHI in week 37,38 and 39.

Through routine fish health checks the site identified a mild bacterial infection throughout Q3 of 2023 which seems to be now resolving. The bacterial infections appear to be secondary to other insults, it is thought that low O2 in Loch Striven has resulted in a poor immune response in fish which has allowed a mixed bag of furunculosis and SRS to present in outlier fish. Last fish health report dated 25/10/2023.

The site was inspected in a calm sea state in overcast weather. Visibility allowed observation of the stocks to approximately 3 meters. The majority of the stock observed appeared healthy, the general population of fish observed across all cages could be seen shoaling well and responding positively hand feeding by the site operator, which was observed when capturing fish for VMD sampling.

Clinical signs of disease were observed during this visit and four fish were removed for diagnostic sampling. Across the site, evidence of bacterial infection was clear as many fish were observed with small, circular lesions. Of the 14 cages stocked, approximately 3 to 15 moribund and lethargic fish were observed in each pen. Pen 14 had the largest number of moribunds observed at approximately 15, 2 fish were observed hanging vertically, 6 fish were observed having a darkened body and exophthalmia. All moribund fish observed had small circular lesions present. Clinical signs of disease were similar in each cage across the site in varying degrees of severity.

Fish were removed for diagnostic sampling from pens 14, 3 and 2 which appeared to be the worst affected cages based on the visible clinical signs of disease observed during the inspection.

An additional 9 fish were removed for VMD sampling, 6 of these fish had a few small circular lesions although appeared to be otherwise healthy. No gross pathology was observed.

The site conducted a round of freshwater treatments in week 41. At the time of inspection the stock were in withdrawal of SLICE and Optomease.

Case No: **2023-0511** Site No: **FS1056**  
 Date of Visit: **03/11/2023** 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>14</b>	Facilities stocked	<b>14</b>	No facilities inspected	<b>14</b>
Species	<b>SAL</b>	<b>WRS</b>			
Age group	<b>2023 Q1</b>	<b>2023</b>			
No Fish	<b>972,558</b>	<b>54,901</b>			
Mean Fish Wt	<b>1517g</b>	<b>150g</b>			
Next Fallow Date (Site)	<b>07/2024</b>		Next Input Date (Site)	<b>01/2025</b>	
Recent (last 4 wks) disease problems?			Any escapes (since last visit)?	<b>Y</b>	
If yes, detail:	<b>Furunculosis, SRS, AGD</b>				

**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. 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)?            | <input type="checkbox"/> | Y |
| If yes, detail:                                | Optomease                |   |
| If other, detail:                              | SLICE                    |   |
| 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)?                  | Optomease                |   |
| If other, detail:                              | SLICE                    |   |
| 6. Are medicines stored appropriately?         | <input type="checkbox"/> | Y |

**Biosecurity Records**

- |  |                          |   |
|--|--------------------------|---|
| 1. Biosecurity records available for inspection?   | <input type="checkbox"/> | Y |
| 2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?   | <input type="checkbox"/> | Y |
| 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"/> | Y |
| 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"/> | Y |
| 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"/> | Y |
| 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"/> | Y |
| 7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?  | <input type="checkbox"/> | Y |
| 8. Have the biosecurity procedures been adequately implemented on site?  | <input type="checkbox"/> | Y |
| 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).                           |                          |   |

See additional information.

Records checked between: 04/11/2021 - 03/11/2023

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	P1							
Fish nos	1	2	3	4	1-5							
Pool Group	P1	P1	P1	P1								
Species	SAL	SAL	SAL	SAL								
Average weight	1.5kg	1.5kg	1.5kg	1.5kg								
Sex	N/a	N/a	N/a	N/a								
Water Type	SW	SW	SW	SW								
Stock Details		Loch Langavat (FS1049)	Loch Langavat (FS1049)	Applecross (FS1336)	Applecross (FS1336)							
	Stock Origin											
Facility No	2	3	14	14								

11/2023 Additional Sample Information:

5 Total Tests assigned 4


Case no: 2023-0511

Site No: FS1056

Method of killing: Anaesthetic

Date of visit: 03/11/2023

Inspector(s):

Sheet Relevant: Y

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

Fish Number									
Time sampled after death (if > 45 minutes)		5	15	25	35				
<b>External Signs</b>									
Behaviour	Moribund	S	S	S	S				
	Lethargic	S	S	S	S				
	Hanging vertical			W	W				
	Spiralling								
	Flashing								
Loss of equilibrium									
Body	Dark	W		M	M				
	Distended abdomen				W				
	Anorexic								
	Scale Oedema								
Opercula	Shortened		W						
	Flared								
Haemorrhaging	Throat								
	Ventrum								
	Base of fins								
Eyes	Elsewhere								
	Exophthalmic				M				
	Enophthalmic (sunken)								
Gills	Cataract								
	Haemorrhagic								
	Pale								
Lesions	Necrotic								
	Flank	M	M	M	M				
	Elsewhere								
Vent	Inflamed								
	Trailing faeces								
Lice Load	Estimate numbers	0	0	0	0				
<b>Internal Signs</b>									
Ascites	Clear								
	Bloody								
Oedema	In tissues								
Heart	Pale/anaemic				M				
	Granulomas								
Liver	Deformed								
	Petechial haem								
	Gross haem								
	Tissue breakdown								
Pyloric caeca	Enlarged								
	Colour number(s)	4	5	4	4				
	Granulomas								
Spleen	Lesions								
	Petechial haem	W							
	Tubules mauve								
Gut	Lack of fat	W	W	W	W				
	Enlarged								
Kidney	Granulomas								
	No food present	W	W	W					
	Yellow pseudo-faeces				M				
	External haem								
Swim bladder	Internal haem								
	Haemorrhaging			M					
General	Fluid filled		W						
	Swollen								
	Grey								
General	Granular								
	Liquefied								
	Parasites present								
General	Anaemia								

Case no: 2023-0511

Date of visit: 03/11/2023

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

Fish Number														
Time sampled after death (if > 45 minutes)														
External Signs														
Behaviour	Moribund													
	Lethargic													
	Hanging vertical													
	Spiralling													
	Flashing													
	Loss of equilibrium													
Body	Dark													
	Distended abdomen													
	Anorexic													
	Scale Oedema													
Opercula	Shortened													
	Flared													
Haemorrhaging	Throat													
	Ventrum													
	Base of fins													
	Elsewhere													
Eyes	Exophthalmic													
	Enophthalmic (sunken)													
	Cataract													
	Haemorrhagic													
Gills	Pale													
	Zoned													
	Necrotic													
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													
	Gross haem													
	Tissue breakdown													
	Enlarged													
	Colour number(s)													
	Granulomas													
	Lesions													
Pyloric caeca	Petechial haem													
	Tubules mauve													
	Lack of fat													
Spleen	Enlarged													
	Granulomas													
Gut	No food present													
	Yellow pseudo-faeces													
	External haem													
	Internal haem													
Body wall	Haemorrhaging													
Swim bladder	Haemorrhaging													
	Fluid filled													
Kidney	Swollen													
	Grey													
	Granular													
	Liquefied													
General	Parasites present													
	Anaemia													



Additional comments:

Heart of F4 was abnormally brittle, bulbous came apart during removal from fish.

Case Number:	2023-0511	Site No:	FS1056	Insp:		
Date of Visit	03/11/2023	No of movements/supp./dest.			Score	
<b>Live fish movements</b>		0	1-5	6-10	>10	
Movements on (from out with GB) of susceptible species	Frequency of movements on from equivalent MS	0	5	10	14	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	0
	Number of suppliers	0	5	10	14	0
Movements off	Frequency of movements off	0	3	6	10	6
	Number of destinations	0	3	6	10	3
<b>Exposure via water</b>	<b>Site contacts</b>	0	1-5	6-10		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		2
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
<b>Management practices</b>		None	Secure	Unsecure		
Water contacts with processors	Any processing plant discharging into adjacent waters	0	1	2		1
On farm processing within the rules of the directive	No on farm processing	0				0
	Processing own fish (re-cycling risk)	1				
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				
	Common processes with other farms	3				3
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
<b>Biosecurity</b>	<b>Number of sites</b>	1	2 or 3	≥ 4		
Contacts with other sites	Sites operating from single shorebase	0	1	2		1
	Sites sharing staff and equipment	0	1	2		1
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
<b>CoGP/Regulator</b>						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
<b>Total Rank</b>					<b>17</b>	<b>MEDIUM</b>

Case No: **2023-0511**

Site No: **FS1056**

**Sea Lice Inspection (Seawater Sites Only)**

- 1. Has the site experienced sea lice problems in the previous 4 years?
- 2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?
- 3. Does the site have access to a range of licenced in-feed and bath sea lice medications (including deltamethrin, azamethiphos and emamectin benzoate) as well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of time?
- 4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?
- 5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)
- 6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)
- 7. Are sea lice (*L. salmonis*) record levels below the suggested criteria for treatment in the CoGP during the period that records are inspected? (CoGP Annex 6)
- 8. Have average adult female sea lice (*L. salmonis*) numbers per fish been at a level of 3 or above (prior to w/b 10/6/19) or 2 or above (from w/b 10/6/19) during the period that records are inspected?
- If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.
- 9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)
- 10. Have therapeutic treatments been administered or other actions taken when *L. salmonis* levels have exceeded the suggested criteria for treatment or where *C. elongatus* is considered to have welfare implications? (CoGP 4.3.82, 5.3.51)
- 11. Has any other action been taken (where applicable)?
- 12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?
- 13. Are treatments, where conducted, carried out in cooperation between participating farms?
- 14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?
- 15. Is there a site specific written lice management procedure with waypoints describing set actions to deal with recognised scenarios during the escalation of a sea lice infestation?
- 16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.

**Containment Inspection**

- 1. Has the site experienced equipment damage due to predators in the current or previous production cycles?
- 2. Are measures in place to mitigate against the predation experienced on site? (Detail below)

**Seal pro nets, tops nets**

If other, detail below:

- 3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?
- If Yes proceed with questions 4 – 9. If No skip to question 10
- 4. Have these been reported to Scottish Ministers?
- 5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 7. Were methods (if any) used to recover escapees? If yes give detail
- 8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)
- 9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)
- 10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)

Case No: 2023-0511

Site No: FS1056

Date of Visit: 03/11/2023

Inspector: [REDACTED]

**Point of Compliance**

1. Is the farm under inspection located within a farm management area?

Y

If N, no further questions require completion.

**Points of Compliance for Both Farm Management Agreements and Statements**

2. Has a current farm management agreement or statement (FMAg/S) been prepared?

Y

3. Is the current FMAg/S available for inspection?

Y

4. Does the FMAg/S identify the relevant farm management area?

Y

5. Does the FMAg/S identify the fish farm site(s) to which it applies?

Y

6. Does the FMAg/S identify the date of commencement of the agreement or statement?

Y

7. Does the FMAg/S identify the date of review?

Y

**Arrangements for Fish Health Management**

8. Does the FMAg/S identify the minimum health standards for the stocks to be introduced to the area or farm?

Y

9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?

Y

10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?

Y

11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?

Y

12. Does the FMAg/S identify the arrangements for the storage and disposal of any dead fish from any fish farm in the area or the individual farm?

Y

**Arrangements for The Management of Sea Lice**

13. Does the FMAg/S identify arrangements for the sharing of data on sea lice numbers and treatments?

Y

14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?

Y

15. Does the FMAg/S identify any requirements for the sensitivity testing of available treatments for sea lice on farms in the area or individual farms?

Y

16. Does the FMAg/S identify the circumstances under which biological controls and cleaner fish are to be used on farms in the area or individual farms?

Y

17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?

Y

**Live Fish Movements**

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?

Y

19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?

Y

**Harvesting**

20. Does the FMAg/S identify acceptable harvest practices on farms in the area or individual farms?

**Fallowing**

21. Does the FMAg/S identify the dates by which the area or individual farm will be fallow and the earliest date when a farm or area may be restocked?

22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?

23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?

**Point of Compliance for Farm Management Agreements Only**

24. Does the farm management agreement include arrangements for persons to become, or cease to be, parties to the agreement?

**Management and operation**

25. Is the fish farm being managed and operated in accordance with the agreement or statement?

26. What is the version no/date of issue of the FMAg/S?

Site No: FS1056
Case No: 2023-0511
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



Case No: 2023-0511

Date of visit: 03/11/2023

Site No: FS1056

Inspector: [REDACTED]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 <sup>nd</sup> Insp
ISA	1/4	07/11/2023		07/11/2023		07/12/2023		
ASAL	1/4	15/11/2023		28/11/2023		07/12/2023		
AGDQ	2/3	15/11/2023		28/11/2023		07/12/2023		
IPNM	2/4	15/11/2023		28/11/2023		07/12/2023		
IHNP	0/4	15/11/2023		28/11/2023		07/12/2023		
PNST	3/3	15/11/2023		28/11/2023		07/12/2023		
VSPE (A)	2/4	15/11/2023		28/11/2023		07/12/2023		
VSPE (B)	2/4	15/11/2023		28/11/2023		07/12/2023		
YRUK	4/4	15/11/2023		28/11/2023		07/12/2023		
PMVP	0/4	15/11/2023		28/11/2023		07/12/2023		
SALP	0/4	15/11/2023		28/11/2023		07/12/2023		
VHSP	0/4	15/11/2023		28/11/2023		07/12/2023		
PISM	2/2	15/11/2023		28/11/2023		07/12/2023		
AERH	1/4	15/11/2023		28/11/2023		07/12/2023		
GPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
HPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
LPAT	3/4	15/11/2023		28/11/2023		07/12/2023		
KPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
SPAT	4/4	15/11/2023		28/11/2023		07/12/2023		
PISH	1/4	15/11/2023		28/11/2023		07/12/2023		

Report Summary			
Case Type	Date	Insp	2 <sup>nd</sup> Insp
ECI, SLI, CNI, VMD	07/11/2023		
DIA	29/11/2023		

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0169	<b>DATE OF VISIT</b>	03/11/2023
<b>SITE No</b>	FS1056	<b>SITE NAME</b>	Strone
<b>CASE No</b>	20230511	<b>INSPECTOR</b>	[REDACTED]

### Section 1: Summary

During a routine fish health inspection of the site, fish were observed displaying clinical signs of disease. Four fish were removed for diagnostic sampling.

One fish tested positive for infectious salmon anaemia (ISAV) by qPCR. Further tests were run to determine the HPR subtype, however no results could be obtained from sequencing as only a poor quality product was collected due to a high Cp value. Following this outcome, the site was scheduled for a 150 fish statutory sample for ISA. These samples determined the subtype as HPR0, please refer to the reports for case 2023-0524 for more detailed information.

Histopathology examination revealed complex pathology. There was pathology consistent with salmonid rickettsial septicaemia (SRS), which was confirmed by qPCR, and one fish also displayed an *Aeromonas*-like infection.

*Yersinia ruckeri* was identified, however the level and purity of growth would not suggest it would be the primary source of morbidity in this case. *Aeromonas salmonicida* was identified in one fish, the level and purity of growth would suggest it would be the primary pathogen in this fish.

F1-F3 tested positive for *Paranucleospora theridion* and salmon gill poxvirus (SGPV). One fish tested positive for *Neoparamoeba perurans* (AGD) and two fish tested positive for infectious pancreatic necrosis virus (IPNV) by qPCR.

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

During a routine fish health inspection of the site, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, clinical signs of disease were observed upon inspection of the stocks. Across the site moribund and lethargic fish were observed in each epidemiological unit. Pen 14 had the largest number of moribund and lethargic fish visible at approximately 15, of the fish observed, two fish in this pen were hanging vertically, six fish had exophthalmia and were dark to the body. All moribund fish had small circular lesions to the flanks. Clinical signs of disease were similar and apparent in every stocked pen in varying degrees of severity. Four fish were removed for diagnostic sampling, taken from cages 2, 3 and 14.

The fish removed for diagnostic sampling all displayed moribund and lethargic behaviour prior to removal for sampling. F3 and F4 were also observed hanging vertically prior to removal. F4 was dark to the body and its eyes were exophthalmic. All fish had small circular lesions present to the flanks.

R09



Internally, all fish had a lack of fat to the pyloric caeca and no food present in the gut. F4 had a pale and anaemic heart. Haemorrhaging to the swim bladder was observed in F3 and the swim bladder of F2 was fluid filled.

### Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	2	Atlantic Salmon	2023 Q1 1.5Kg	Loch Langavat (FS1049)
F2	3	Atlantic Salmon	2023 Q1 1.5Kg	Loch Langavat (FS1049)
F3 – F4	14	Atlantic Salmon	2023 Q1 1.5Kg	Applecross (FS1336)

### Results

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

The following bacteria were isolated:

- *Yersinia ruckeri* : F3 & F4 (Kidney), F1, F2 & F4 (Lesion)
- *Aeromonas salmonicida* : F1 (Kidney)
- *Vibrio* spp: F1, F2 & F3 (Lesion), F2 (Kidney)

*Yersinia ruckeri* is a primary fish pathogen, however the level and purity of growth overall would not suggest it would be the primary source of morbidity in this case, but it would be implicated as a secondary pathogen in individual fish and may pose a risk to the health of the population. The level and purity of growth of *Aeromonas salmonicida* found in F1 would suggest that it would be the primary pathogen in this fish. The level and purity of *Vibrio* spp. identified would not be implicated in morbidity and are likely to be of environmental origin.

Tissue samples of F2 and F3 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)
F2	23.51	25.76	25.68	25.76	POSITIVE
F3	21.95	32.81	32.81	32.79	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).

Infectious salmon anaemia (ISAV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	16.71	>40	>40	>40	POSITIVE
F4	-	-	-	-	Negative

Infectious pancreatic necrosis virus (IPNV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	-	-	-	-	Negative
F3	16.71	34.75	34.69	34.25	POSITIVE
F4	17.26	38.06	37.43	37.81	POSITIVE

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.85	33.09	33.91	33.63	POSITIVE
F2	23.17	28.75	28.70	28.69	POSITIVE
F3	21.66	37.04	37.36	39.17	POSITIVE

F1 – F3 tested for salmon gill poxvirus(SGPV)

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

**Parasitology:** Tissue samples from F1 – F3 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	22.85	25.78	25.89	25.92	POSITIVE
F2	23.17	28.86	28.42	28.40	POSITIVE
F3	21.66	32.10	32.23	32.16	POSITIVE

*Neoparamoeba perurans* (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	23.17	34.92	34.92	35.25	POSITIVE
F2	-	-	-	-	Negative
F3	21.66	32.53	32.78	32.92	POSITIVE

R09

**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:** Focal area of filament necrosis with of few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F3). Several aggregates of Gram-negative bacteria with no evident necrosis associated (F1). F4 also displayed some vascular disturbance and adhesions. Lamellar telangiectasia with multifocal thrombosis (F1, F2, F3, F3) and free blood among gill filaments.

**Skin & Muscle:** Small area of necrotising myositis with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1). F2 displayed minor myositis.

**Heart:** Mild, multifocal myocarditis (F1, F4). Moderate, epicarditis with round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1). F3 displayed focal epicarditis and some basophilic cellularity in the compact layer. Patches of light H&E stain observed in the compact layer (F1). F4 displayed some granulomatous reaction with some structures showed centrally splendore-hoeppli reaction (homogeneous eosinophilic material).

**Gut and pyloric caeca:** Peritonitis, mild, multifocal (F1, F2, F3, F4) and a presence of a range of quantity of round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2).

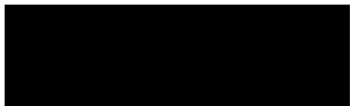
**Pancreas:** Within the normal range.

**Liver:** Capsulitis (F1, F2) with rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2). Hepatocellular necrosis, minimal, focal with few rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and F2 with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.). F4 displayed some cuffing.

**Kidney:** Interstitial cell (haemopoietic) necrosis (F1, F2, F3) with rod-shaped bacteria (resembling *Aeromonas* sp.) (F1) and few intracellular round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2). F1 also displayed haemorrhage. Some renal tubules display some hyaline droplets (F2). F3 displayed on renal tubule with evidence of mineralization. F4 displayed some granulomatous reaction with some structures showed centrally splendore-hoeppli reaction (homogeneous eosinophilic material) and evidence of erythrophagocytosis.

**Spleen:** Necrotising capsulitis (F1) with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1) and presence of few rod-shaped bacteria (resembling *Aeromonas* sp.) observed in the parenchyma (F1). F2 displayed with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) and F3 exhibited

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

Signed: 

Date: 06/12/2023

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

R09



# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0169	<b>DATE OF VISIT</b>	03/11/2023
<b>SITE No</b>	FS1056	<b>SITE NAME</b>	Strone
<b>CASE No</b>	20230511	<b>INSPECTOR</b>	[REDACTED]

### Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected in accordance with the Aquatic Animal Health (Scotland) Regulations 2009.

Samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

#### Records

The surveillance frequency category of the site was assessed as medium. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every second year. The category of the site will be reassessed on a routine basis and updated as required.

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:

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

Records in relation to aquaculture animals transported by the business were inspected and found to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Mortality levels had exceeded the reporting criteria since the last inspection and had been reported to the Fish Health Inspectorate as required.

Reports detailing the results of animal health surveillance carried out by or on behalf of the business and/or Marine Directorate were available for inspection.

The biosecurity measures plan for the site was inspected and found to be adequately maintained and implemented.

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

Medicine records were inspected and found to be adequately maintained.

Samples were taken to be analysed for veterinary residues.

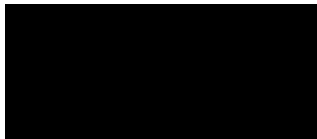
## **Inspection under the Aquaculture and Fisheries (Scotland) Act 2007**

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice), section 4A regarding fish farm management agreements and statements and section 5 regarding containment and escapes.

On this occasion the site was found to be satisfactory with regards to parasites, fish farm management agreements and statements and containment and escapes.

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

Signed:



Date: 07/11/2023

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/)

AFH-2023-0511 Strone, Bakkafrost Scotland (4 fish Diagnostic)

F1





F2





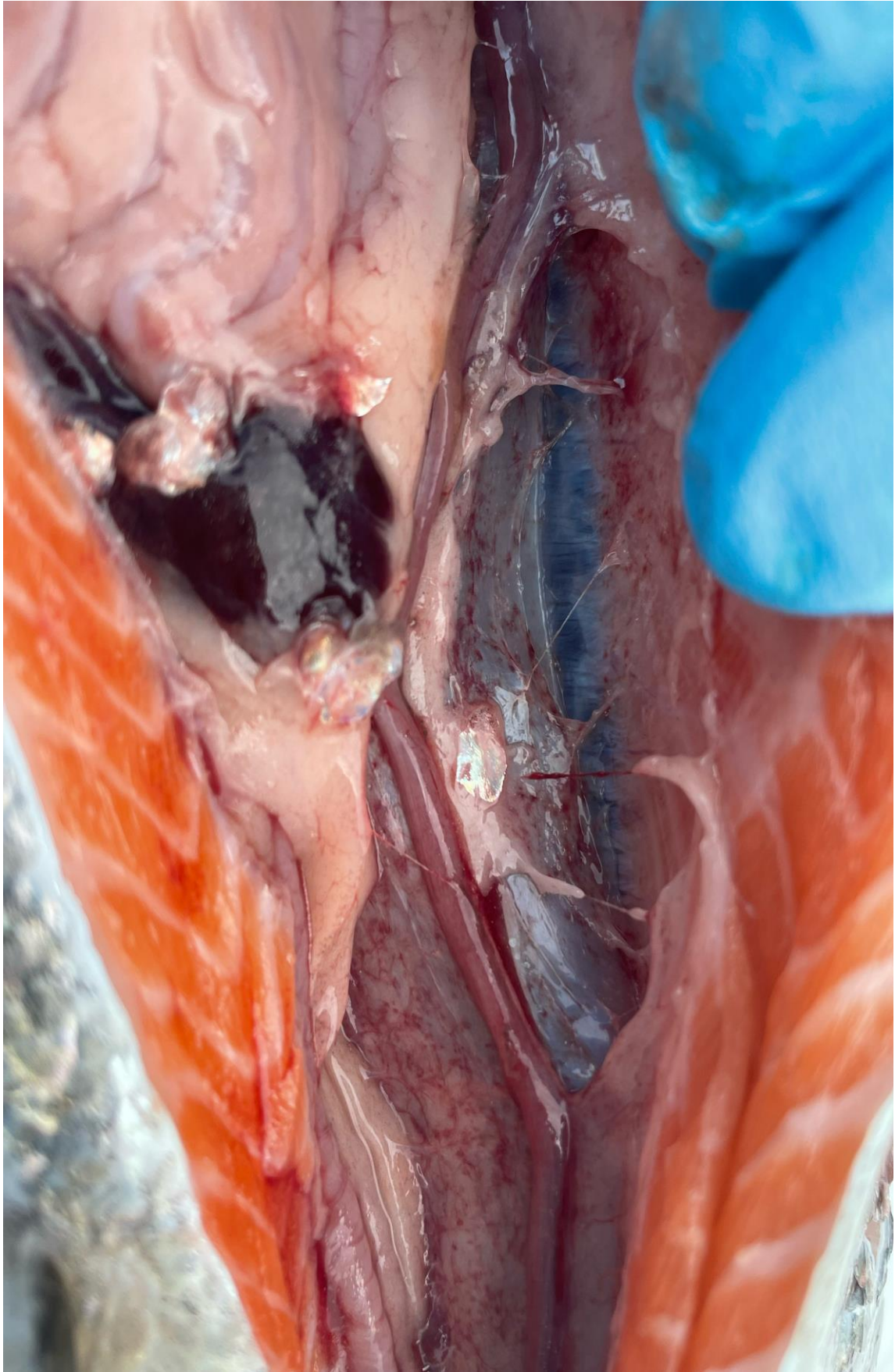




F3







F4



