Case No:	2023-0201	Date of visit:	17/05/2023
Time spent on site:	5h	Main Inspector:	[redacted]
Site No:	FS1262	Site Name:	Sgeir Dughall
Business No:	FB0169	Business Name:	Bakkafrost Scotland

Case Types: 1 ECI 2 CNI 3 SLI 4 VMD 5 DIA 6

Water Temp (°C):	8.5	Thermometer No:	T173	FHI 045 completed	

Observations: Region: HI Water type: S CoGP MA: M-17

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:

peaks in mortality 22021 wk 19 6625 (2.83%), wk 20 5376 (2.57%), wk 21 4110 (2.02%), wk 22 2905 (1.53%) wk 23 1854 (1.12%) all CMS related.

Main treatments have been FW, lice numbers have been low and gills health has been good throughout the current cycle.

FW treatment boat equipped with a flushing system (FLS system) to remove weakened sea lice post treatment, less pressure is required to remove lice. Clearance of lice is reported to be excellent. All water is filtered through drum filter four times to remove lice prior to discharge.

Recent mortalities slightly increased, on inspection of the site lethargic fish were observed in all cages, some bilateral exophthalmia also noted. Furunclosis like lesions were also observed. Three fish were removed for diagnostic sampling

Case No:	2023-0201	Site No:	FS1262
Date of Visit:	17/05/2023	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	14	Facilities stocked	14	No facilities inspected	14		
Species	SAL						
Age group	2022 Q1						
No Fish	337,113						
Mean Fish Wt	4.9kg						
Next Fallow Date (Site)	June 2023	Next Input Date (Site)	End of November				
Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	N				
If yes, detail:	CMS (background at the moment)						

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	06/05/2021
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)?	N
If yes, is there a system in place for maintenance of transportation records?	

Mortality Records

1. Mortality records available for inspection?	Y
2. How are mortalities disposed of?	Biogas - Barkip
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	8053/site last four weeks post treatments mortality
5. Evidence of recent increased/atypical mortalities?	N
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
6. Any other peaks in mortality during period checked?	Y
If yes, detail:	see additional information
7. Have increased (unexplained) mortalities been reported to vet or FHI?	Y
If yes, detail action:	site inspection and sampling
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)?	Y
If yes, detail:	
If other, detail:	FW Optomease
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)?	Optomease
If other, detail:	
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	y
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?	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 *how* and *when* that will be notified to Scottish Ministers?	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)?	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.)?	y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	y
8. Have the biosecurity procedures been adequately implemented on site?	y
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).	

Routine site visits from company biologists, general screening. Some lesions noted but reported as not significant low AGD scores.

Records checked between:	6/5/2021 to 17/5/2023

Case no:	2023-0201	Site No:	FS1262	Date of visit/ Sampling:	17/05/2023	17/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	13:30:00	15:00:00	Inspector:		VMD No.	14							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	P1								
	Fish nos	1	2	3	1-3	4	5						
	Pool Group	P1	P1	P1									
Stock Details	Species	sal	SAL	SAL	SAL	SAL	SAL						
	Average weight	4.9kg	4.9kg	4.9kg	4.9kg	4.9kg	4.9kg						
	Sex	N/A	N/A	N/A	N/A	N/A	N/A						
	Water Type	SW	SW	SW	SW	SW	SW						
	Stock Origin	Kinlochmoidart	Kinlochmoidart	Applecross	Kinlochmoidart	Applecross	Applecross						
	Facility No	7	7	3	7	3	2						

05/2023	Additional Sample Information:
	Additional lesion plates taken ands additional histo lesion skin sample taken for f2 and 3 only. Spilt plate used for FMM

4 Total Tests assigned 5

Case no: 2023-0201 Site No: FS1262 Method of killing: Percussive

Date of visit: 17/05/2023 Inspector(s): [redacted] 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)				~1.30							
External Signs											
Behaviour	Moribund	S	S	S							
	Lethargic	S	S	S							
	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	M									
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale										
	Zoned		m	m							
	Necrotic										
Lesions	Flank		m	s							
	Elsewhere										
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers	0	0	0							
Internal Signs											
Ascites	Clear										
	Bloody	s	m								
Oedema	In tissues										
Heart	Pale/anaemic	m	m	m							
	Granulomas										
	Deformed			s							
Liver	Petechial haem	S	w	m							
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	1 to 2	1 to 2	1 to 2							
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve	s	w								
	Lack of fat	m	w								
Spleen	Enlarged	s	s	w							
	Granulomas	w	w	w							
Gut	No food present										
	Yellow pseudo-faeces			m							
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging			m							
	Fluid filled										
Kidney	Swollen										
	Grey	s	s	s							
	Granular	s	s	s							
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2023-0201

Date of visit: 17/05/2023

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:

furuncle like lesions on F2 and 3

Case Number:	2023-0201		Site No:	FS1262	Insp:	
Date of Visit	17/05/2023					

		No of movements/supp./dest.				Score
Live fish movements		**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	10
	Number of destinations	0	3	6	10	3
Exposure via water	**Site contacts**	**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		
Management practices		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				
Biosecurity	**Number of sites**	**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		
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
CoGP/Regulator						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				

Total	**20**
Rank	**MEDIUM**

Case No: 2023-0201 Site No: FS1262

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	N
2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?	Y
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?	Y
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?	Y
5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)	Y
6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)	Y
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)	N
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?	Y
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.	Y
9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)	N
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)	Y
11. Has any other action been taken (where applicable)?	N/A
12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?	Y
13. Are treatments, where conducted, carried out in cooperation between participating farms?	N
14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?	Y
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?	Y
16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.	Y

Containment Inspection

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

Seal pro tensioned nets Top nets seal blinds

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?	N
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)	Y

Case No: 2023-0201 Site No: FS1262

Date of Visit: 17/05/2023 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?	y

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?	y
22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?	y
23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?	y

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?	N/A

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?	y
26. What is the version no/date of issue of the FMAg/S?	12/11/2021

Case No: 2023-0201 Date of visit: 17/05/2023

Site No: FS1262 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
AGD (Neoparamoeba perurans) (PCR) - AGDQ	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
IHN (PCR) - IHNP	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
IPN (PCR) - IPNM	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
ISA (real time qPCR - heart & kidney) - ISAQ	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Paranucleospora theridion (PCR) - PNST	3/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Piscine myocarditis virus (CMS) (PCR) - PMVP	2/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Salmon gill poxvirus (PCR) - SPVP	1/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Salmonid alphavirus (SAV) (PCR) - SALP	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
VHS (PCR) - VHSP	0/3	24/05/2023	[redacted]	24/03/2023	[redacted]	15/06/2023	[redacted]	[redacted]
No significant bacteria (culture) - NSIG	2/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Aeromonas salmonicida (Furunculosis) - ASAL	2/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Gill pathology - GPAT	3/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Complex gill issues (histology) - CGDH	3/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Heart pathology - HPAT	3/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Cardiomyopathy syndrome (histology) - CMPS	3/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Liver pathology - LPAT	3/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Aeromonas (histology) - AERH	2/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Spleen pathology - SPAT	2/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Skin pathology - SKIN	1/3	31/05/2023	[redacted]	31/05/2023	[redacted]	15/06/2023	[redacted]	[redacted]
Mucor sp	2/3	01/06/2023	[redacted]	01/06/2023	[redacted]	15/06/2023	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI,CNI,SLI,VMD	24/05/2023	[redacted]	[redacted]
DIA	15/06/2023	[redacted]	[redacted]
		[redacted]	[redacted]

		[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	17/05/2023
SITE NO	FS1262	**SITE NAME**	Sgeir Dughall
CASE NO	20230201	**INSPECTOR**	[redacted]

Section 1: Summary

During a routine site inspection, a number of lethargic and moribund Atlantic salmon were observed in most pens, three were removed for further examination and subsequent diagnostic sampling.

Histopathological examination revealed features consistent with *Aeromonas salmonicida* (furunculosis) and cardiomyopathy syndrome (CMS). One fish also displayed myocardial degeneration on the compact layer. Hepatocellular necrosis and necrotising splenitis were also observed.

Aeromonas salmonicida was identified on plates taken from kidney (1/3) and lesion (2/3) material. The level and purity of growth would suggest this bacterium would be implicated as a primary source of morbidity in F3 and as a primary pathogen in F2. As a primary fish pathogen this bacterium would be a risk to fish health.

Samples tested positive for Piscine myocarditis virus (2/3), the causative agent of CMS and also the gill related pathogens *Paranucleospora theridion* (3/3) and salmon gill poxvirus (SGPV) (1/3).

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 site inspection, a number of lethargic and moribund Atlantic salmon were observed in most pens, bilateral exophthalmia and furunculosis like lesions were also noted. Three were removed for further examination and subsequent diagnostic sampling.

At the time of the inspection the site was stocked with 337,113 Atlantic salmon at an average weight of 4.9 kg. Mortalities were slightly elevated and were recorded as post treatment.

All three fish were moribund and lethargic with bilateral exophthalmia present on F1. The gills of F2 and F3 were zoned with lesions noted on the flank. No lice were present.

Internally there was bloody ascites in F1 and F2. The hearts of all three fish were pale and anaemic with petechial haemorrhaging present on the liver. The pyloric caeca of F1 and F2 was mauve in appearance and also lacked fat. All three fish displayed splenomegaly with granulomas also noted.

UKAS accredited testing laboratory No. 1964
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

F3 had yellow pseudo faeces in the gut and haemorrhaging on the swim bladder. The kidneys of all fish were grey and granular.

Samples

Samples were collected from F1 - F3 fish according to the table below:

Fish number	Facility number	Species	Stage	Origin
F1 and F2	7	A salmon	2022 Q1	Kinlochmoidart
F3	3	A salmon	2022 Q1	Applecross

Results

Bacteriology: Kidney and gill, material from F1 - F3 and lesion material from F2 and F3 was inoculated onto appropriate media for the isolation of bacteria.

The following bacteria was isolated:

- *Aeromonas salmonicida* (kidney F3 and lesion F2 and F3)

From the tests conducted, we have evidence which may indicate some resistance to amoxycillin, but no resistance to oxytetracycline, sulphamethoxazole/trimethoprim or florfenicol.

An aseptate branching fungus was observed on plates taken from kidney material of F1 and F2 and lesion material of F2 and identified as *Mucor* sp. by sequencing. It is likely this is an environmental contaminant.

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

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.47	36.65	37.20	37.75	POSITIVE
F2	20.89	-	-	-	negative
F3	20.85	-	-	-	negative

Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	16.31	13.77	13.90	13.86	POSITIVE
F2	16.40	29.98	29.86	29.93	POSITIVE
F3	16.76	-	-	-	negative

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), 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).

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.47	31.55	30.01	31.55	POSITIVE
F2	20.89	36.56	36.58	37.39	POSITIVE
F3	20.85	36.63	38.36	37.15	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 F1 - F3. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Very mild, multifocal lamellar hyperplasia (F3). Some lamellar clubbing (F1-F3). Some aneurysmal dilation/telangiectasia and cell debris with rod-shaped Gram-negative bacteria among gill filaments (F2-F3).

Skin & Muscle: Lesion F3: Dermatitis with rod-shape Gram-negative bacteria, mild.

Heart: Severe necrotising myocarditis and a blood clot observed in atrium, some foci of myocardial degeneration observed on the compact layer F1. F2 and F3 displayed a myocarditis, very mild, multifocal. Epicarditis (F1-F3).

Gut and pyloric caeca: Marked cell sloughing (potentially associated with post-mortem artefact) observed in all fish.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, mild, multifocal (F1-F3), some mild, diffuse hepatocellular vacuolation (macroveicules) (F1- F2).

Kidney: Foci of interstitial cell (haemopoietic) necrosis with few to several dense aggregates of Gram-negative rod-shaped bacteria F2-F3.

Spleen: Necrotising splenitis (F2 & F3) with rod-shape Gram-negative bacteria, multifocal, mild (F3).

Signed: [redacted] Date: 15/06/2023

Fish Health Inspector

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/

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	17/05/2023
SITE NO	FS1262	**SITE NAME**	Sgeir Dughall
CASE NO	20230201	**INSPECTOR**	[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.

All epidemiological units were inspected. 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.

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 Scotland 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: [redacted] Date: 24/05/2023

Fish Health Inspector

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F1-3

F1

F1

F2

F2

F2

F2