

Case No: 2024-0165 Date of visit: 28/05/2024

Time spent on site: 3.5hrs Main Inspector: [Redacted]

Site No: FS0502 Site Name: Scotasay  
Business No: FB0169 Business Name: Bakkafrost Scotland

Case Types: 1 STI 2 DIA 3 [ ] 4 [ ] 5 [ ] 6 [ ]

Water Temp (°C): 10.5 Thermometer No: T308 FHI 045 completed N/A

Observations: Region: WI Water type: S CoGP MA: W-8

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:  
[Redacted]

**Additional Case Information:**

Wrasse - wild caught

Pen 6,7, 8 initially stocked at the start of cycle with wrasse but due to harvests and FW treatments no wrasse remain on site. No wrasse were seen during site inspection.

livehaul harvests

Stock origins of fish on site:

stofinfiskur- scottish sea farms (barcaldine)

stofinfiskur - applecross

native hebs - landcatch (ormsary)

Increased Mortality 2024:

Wk13 - 1.21%, 6578

wk15 - 1.21%, 6142

Wrasse mortality:

2023, Wk52, 1096, 44.4% (post treatment, freshwater/FLS)

2024, Wk1, 893, 65.09% (post treatment, freshwater/FLS)

Treatment-

last Slice treatment conducted 13/12/2023 - fish no longer in withdrawal

A statutory inspection was conducted following the confirmation of clinical BKD at a site within the 1 tidal excursion from Scotasay. An initial designation notice was placed on the site, and therefore this inspection aimed to determine whether clinical signs for BKD can be observed.

During the site inspection, all stocked pens were inspected with pen 8 and 2 noted as pens with elevated mortality compared to the rest of the site. Targeted harvests were planned for 28/05/2024 and 29/05/2024, with plans to empty pen 1 on 28/05/2024 and destock pen 8 from 29/05/2024 onwards, following submission of movement request on 28/05/2024. ~4-6 lethargic and moribund fish were observed per pen, and upon removal and inspection no clinical signs of BKD were observed. Due to furunculosis being highlighted as an health issue on site, and lesions were seen in some of the fish, two fish were sampled for diagnostic purposes.

Case No: **2024-0165** Site No: **FS0502**

Date of Visit: **28/05/2024** Inspector(s): **[REDACTED]**

**Registration/Authorisation Details**

1. Business/site details summary checked by site representative? **N**

2. Changes made to details? **N/A**

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

Total No facilities	<b>8</b>	Facilities stocked	<b>6</b>	No facilities inspected	<b>8</b>
Species	<b>SAL</b>				
Age group	<b>2023 S1</b>				
No Fish	<b>248,057</b>				
Mean Fish Wt	<b>3.4kg</b>				
Next Fallow Date (Site)	<b>End of June 2024</b>		Next Input Date (Site)	<b>Summer (Q2) 2025</b>	
Recent (last 4 wks) disease problems?			Any escapes (since last visit)?	<b>Y</b>	
If yes, detail:	<b>Furunculosis, Tenacibaculum</b>				

**Movement Records**

1. Movement records available for inspection? **Y**

2. Date of last inspection: **02/10/2023**

3. Are records complete and correctly entered? **Y**

4. Are movement records available for dead fish and waste? **Y**

5. Are records complete and correctly entered? **Y**

6. Are health certificates for introductions (outwith GB) available? **N/A**

**Transport Records**

1. Are any movements carried out by (or on behalf) of the business (not using a STB)? **[REDACTED]**

If yes, is there a system in place for maintenance of transportation records? **[REDACTED]**

**Mortality Records**

1. Mortality records available for inspection? **Y**

2. How are mortalities disposed of? **Other (detail)**

If other detail: **Into skips and then taken to Whiteshore Cockles**

3. Mortality records complete and correctly entered? **Y**

4. Recent mortality (last 4 wks): **2024: Wk 21, 1.55%, 4422; Wk20, 1.48%, 4787; Wk19, 0.94%, 3414; Wk18, 0.86%, 3382**

5. Evidence of recent increased/atypical mortalities? **Y**

If yes, facility nos/no mortality per facility/no stock per facility/reason: **pen 8 and pen 2- plans to harvest out pen 8 by 29/05/2024**

6. Any other peaks in mortality during period checked? **Y**

If yes, detail: **see additional info for wrasse mortality**

7. Have increased (unexplained) mortalities been reported to vet or FHI? **N/A**

If yes, detail action: **[REDACTED]**

8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet. **Y**

**Treatments and Medicines Records**

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

**Biosecurity Records**

1. Biosecurity records available for inspection?	<input type="checkbox"/>
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	<input type="checkbox"/>
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any <i>increased (unexplained)</i> mortality at the site been included?	<input type="checkbox"/>
4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and <i>how</i> and <i>when</i> that will be notified to Scottish Ministers?	<input type="checkbox"/>
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	<input type="checkbox"/>
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	<input type="checkbox"/>
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	<input type="checkbox"/>
8. Have the biosecurity procedures been adequately implemented on site?	<input type="checkbox"/>
If no, detail:	

**Results of Surveillance**

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	<input type="checkbox"/>	Y
2. If yes, are results available for inspection?	<input type="checkbox"/>	Y
3. Any significant results?	<input type="checkbox"/>	Y
If yes, detail (if not detailed under recent disease problems).		furunculosis and tenacibaculum - most recent fish health report 20/05/2024 confirms. Due to harvests, fish health surveillance has been increased to once a week.

Records checked between:	02/10/2023-28/05/2024
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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	P2										
Stock Details	Species	SAL	SAL										
	Average weight	3.4kg	3.4kg										
	Sex	N/A	N/A										
	Water Type	SW	SW										
	Stock Origin	Ormsary Smolt Unit (FS0575)	Barcaldine Smolt Unit (FS1328)										
	Facility No	6	8										



Case no: 2024-0165

Site No: FS0502

Method of killing: Percussive

Date of visit: 28/05/2024

Inspector(s):

Sheet Relevant: Y

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

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

Case no:

Date of visit:

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>																			
	<b>Lethargic</b>																			
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	<b>Granular</b>																			
	<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>	FB0169	<b>DATE OF VISIT</b>	28/05/2024
<b>SITE No</b>	FS0502	<b>SITE NAME</b>	Scotasay
<b>CASE No</b>	20240165	<b>INSPECTOR</b>	██████████

### Section 1: Summary

A statutory inspection was conducted following the confirmation of clinical bacterial kidney disease (BKD) at a site within the one tidal excursion from Scotasay. An initial designation notice was placed on the site, and therefore this inspection aimed to determine whether clinical signs for BKD could be observed. Clinical signs consistent with BKD were not observed, however, due to the number of moribund fish, two fish were removed for diagnostic sampling.

Histopathology examination revealed pathology consistent with cardiomyopathy syndrome (CMS). Moderate hepatic necrosis was also observed. The two sampled fish tested positive for piscine reovirus and piscine myocarditis virus by qPCR.

One fish tested positive for Salmon gill poxvirus and *Paranucleospora theridion* by qPCR.

*Moritella viscosa* was identified on plates taken from skin lesion material. The level and purity of growth of *Moritella viscosa* would suggest that this bacterium would be implicated as the primary source of this lesion.

As no clinical BKD was observed during the inspection the initial designation notice covering the site has been withdrawn.

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 the site inspection, all stocked pens were inspected with pens 8 and 2 noted with elevated mortality compared to the rest of the site. The site was stocked with 2023 S1 fish. Whilst on site, approximately four to six lethargic and moribund fish were observed per pen, and upon removal and inspection no clinical signs consistent with BKD were observed. Due to furunculosis being highlighted as a health issue on site, and lesions were seen in some of the fish, two fish were sampled for diagnostic purposes.

Externally, both fish were dark and moribund. In addition, F1 was observed to have slight haemorrhaging at the base of fins. Gills of F2 were marginally zoned in colour and a lesion on the skin was observed on the underside of the chin of F2. Both fish possessed inflamed vents.

Internally, bloody ascites were observed in the cavity of both fish with the quantity being greater in F1. Weak petechial haemorrhaging was noted on the pyloric caeca and body wall in F1. In addition, both fish were seen to possess haemorrhaging on the swim bladders. The spleens of F1 and F2 were both enlarged.

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## Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	6	Atlantic salmon	2023 S1, 3.4Kg	Ormsary Smolt Unit (FS0575)
F2	8	Atlantic salmon	2023 S1, 3.4Kg	Barcaldine Smolt Unit (FS1328)

## Results

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

The following bacteria were isolated from fish F1-F2:

- *Moritella viscosa*: F2 (Lesion)
- *Pseudomonas* sp.: F1 (Kidney) and F2 (Kidney)
- *Vibrio* sp.: F1 (Gill) and F2 (Gill)

The level and purity of growth of *Pseudomonas* sp. and *Vibrio* sp. would not suggest this bacterium would be implicated as the a primary pathogen in this case.

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

Infectious pancreatic necrosis virus (IPNV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	15.31	30.00	30.17	29.88	POSITIVE
F2	-	-	-	-	Negative

Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	15.31	24.89	24.93	25.00	POSITIVE
F2	15.03	11.58	11.70	11.26	POSITIVE

Piscine reovirus (PRV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	15.31	34.32	34.13	33.76	POSITIVE
F2	15.03	35.62	34.89	34.74	POSITIVE

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### Salmon gill poxvirus

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F2	21.25	27.78	27.85	27.86	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), 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)
F2	21.25	27.69	27.74	27.68	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 two fish. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Some lamellar adhesions and few lamellae displayed necrosis (F2). F2 also displayed plankton-like structures among gill filaments. Aneurysmal dilation/telangiectasia with multifocal thrombosis.

Skin & Muscle: Within the normal range.

Heart: F1 and F2 displayed marked, diffuse, necrotising endocarditis and mild pericarditis.

Gut and pyloric caeca: Within normal range.

Pancreas: Within normal range.

Liver: Hepatic necrosis with haemorrhage, moderate, ranging from multifocal to coalescence (F1).

Kidney: Some interstitial necrosis, mild, multifocal (F2).

Spleen: Mild necrosis(F1) and some cuffing (F2).

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

Signed:



Date: 12/06/2024

Fish Health Inspector

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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/)

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UKAS Accredited Inspection Body - Type C No. 0269  
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB  
Tel - 0131 244 3498      Email - [ms.fishhealth@gov.scot](mailto:ms.fishhealth@gov.scot)  
Website - <https://www.gov.scot/policies/fish-health-inspectorate/>

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

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<b>SITE No</b>	FS0502	<b>SITE NAME</b>	Scotasay
<b>CASE No</b>	20240165	<b>INSPECTOR</b>	

### Statutory Inspection

All epidemiological units were inspected. No clinical signs associated with BKD were observed. The movement restrictions have been revoked and a revocation notice will be issued separately.

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

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

Signed:



Date: 11/06/2024

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



Diagnostic Sampling: 20240165 photos



*Figure 1 Overview of F1. Inserted picture outline in red shows the petechial haemorrhaging on the base of fins and inflamed vent.*



*Figure 2 Internal view of F1.*





*Figure 2 View of lesion on F2.*



*Figure 3 External view of F2*



Figure 4 Internal view of F2