

Case No: 2023-0465 Date of visit: 11/10/2023

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

Site No: FS0805 Site Name: Bagh Dail Nan Cean
Business No: FB0119 Business Name: Mowi Scotland Ltd

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

Water Temp (°C): 13.38 Thermometer No: T309 FHI 045 completed N/A

Observations: Region: ST Water type: S CoGP MA: M-40

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:

Current fish on site moved on from Maclean's Nose: wk33. Previous cycle fish were harvested and site was fallowed out in wk 31. 13/08/2023

Stock origin of fish: Loch Lochy, Ireland. Transferred to site from Maclean's Nose.

Cleanerfish mortality 2023 (recent 4 weeks):

Wrasse; Wk39, 4.96%, 2275; Wk38, 2.61%,1230; Wk37, 2.49%,1205;Wk36, 1.30%, 488 (attributed to furunculosis)

Lumpfish culled following harvest of fish from previous cycle in Wk31.

2/08/2023 - culled out the lumpfish.

Health visits: more swabs taken on 05/10/2023, AGD, 2/10 positive. Health checks conducted every 2 weeks.

Movement of fish from MacLean's Nose: first two deliveries fish exhibited AGD. Pen 2 and 3 were experiencing higher levels of AGD. Gentle peroxide treatment in the well but stopped immediately as temperature was too high. Mortality in wk 33 corresponds to this treatment loss. Risk assessment in place (dated 11/08/2023) for transfer of fish from 13/08/2023 - inspected.

Site inspected on 11/10/2023 (7/8 stocked pens inspected) and two moribund fish removed for diagnostic sampling. F1 was observed to have many small, almost circular lesions on its flanks and operculum. F2 presented with very pale, grey gills. Due to weather, one pen was not inspected.

Pen 1 harvested out 11/10/2023. Plans to harvest pen 10 12/10/2023.

movement records inspected: some harvests conducted via deadhaul. Either shipped to Larne or Blar Mhor from Oban pier.

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Registration/Authorisation Details

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

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

Site Details (include cleaner fish for all sections)

Total No facilities	12	Facilities stocked	8	No facilities inspected	7
Species	SAL WRS				
Age group	2022 Q4	wild caught			
No Fish	250,000	43,500			
Mean Fish Wt	3.5kg	mix			
Next Fallow Date (Site)	End of November		Next Input Date (Site)	Start April 2024	
Recent (last 4 wks) disease problems?			Any escapes (since last visit)?	Y	
If yes, detail:	PRV-1, SRS, AGD				

Movement Records

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

2. Date of last inspection: **15/03/2023**

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)? **N**

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: **Taken to Kames Pier, ensiled and then taken to Barkip Biogas**

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

4. Recent mortality (last 4 wks): **2023: Wk39, 1.78%,5764; Wk38, 1.43%,5490; Wk37,1.13%,4371; Wk36, 1.20%,4699 (mortalities attributed to HSMI and anaemia) ; cleanerfish mortality: see additional information**

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

If yes, facility nos/no mortality per facility/no stock per facility/reason: **pen 1, 2 and 10 and 11 (anaemia and HSMI).**

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

If yes, detail: **Wk33, 10.28%, 17382 (medicinal loss, paramove, pen 2 and 3); Wk31, 1.77%, 414; Wk30, 3.79%,3493; Wk29, 2.05%, 4274; Wk28, 1.95%, 4135; Wk27, 1.85%, 4165 (attributed to PD)**

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)?	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).	PRV-1, <i>Piscirickettsia salmonis</i> (4/7) 19.09.2023; CMS seen in larger fish.	

Records checked between:	15/03/2023-11/10/2023
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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	3									
Pool Group	P1	P2										
Species	SAL	SAL	SAL									
Average weight	3.5kg	3.5kg	3.5kg									
Sex	N/A	N/A	N/A									
Water Type	SW	SW	SW									
Stock Details	MacLean's Nose (FS0599)	MacLean's Nose (FS0599)	MacLean's Nose (FS0599)									
	Stock Origin											
Facility No	10	11	10									

Case no: 2023-0465

Site No: FS0805

Method of killing: Percussive

Date of visit: 11/10/2023

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)		74mins	80mins										
External Signs													
Behaviour	Moribund	M	M										
	Lethargic	M	M										
	Hanging vertical												
	Spiralling												
	Flashing												
Body	Loss of equilibrium												
	Dark												
	Distended abdomen												
	Anorexic												
Opercula	Scale Oedema												
	Shortened												
Haemorrhaging	Flared												
	Throat												
	Ventrum	W	W										
Eyes	Base of fins												
	Elsewhere												
	Exophthalmic												
Gills	Enophthalmic (sunken)												
	Cataract												
	Haemorrhagic												
Lesions	Pale		S										
	Zoned	W	S										
	Necrotic		M										
Ventrals	Flank	S											
	Elsewhere												
Lice Load	Inflamed												
	Trailing faeces												
Internal Signs	Estimate numbers		30										
	Ascites												
	Bloody		W										
Oedema	In tissues												
	Heart												
Liver	Pale/anaemic												
	Granulomas												
Spleen	Deformed	W											
	Petechial haem												
	Gross haem												
Gut	Tissue breakdown												
	Enlarged												
	Colour number(s)	4	3										
Pyloric caeca	Granulomas												
	Lesions												
	Petechial haem												
Spleen	Tubules mauve												
	Lack of fat												
	Enlarged												
Gut	Granulomas												
	No food present	S	S										
	Yellow pseudo-faeces	S	S										
Body wall	External haem												
	Internal haem												
Swim bladder	Haemorrhaging												
	Fluid filled												
Kidney	Haemorrhaging												
	Swollen												
	Grey												
	Granular												
General	Liquefied												
	Parasites present												
	Anaemia												

Additional comments:

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Case No: 2023-0465
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



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:

- *Pseudomonas fluorescens*: F2 (Gill)
- *Vibrio* sp.: F1 (Lesion)

Tissue samples 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)
F1	20.14	35.12	34.84	34.98	POSITIVE
F2	20.52	>40	>40	>40	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).

Piscine Reovirus (PRV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	17.55	35.63	35.13	36.75	POSITIVE
F2	17.71	35.65	34.74	35.72	POSITIVE

Salmon Gill Poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	20.78	34.12	33.64	33.73	POSITIVE
F2	21.49	33.92	34.36	33.96	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicaemia virus (VHSV) and piscine myocarditis virus (PMCV).

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

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	20.78	27.87	27.93	27.86	POSITIVE
F2	21.49	31.58	31.18	31.53	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	20.78	30.11	30.07	30.33	POSITIVE
F2	21.49	37.64	36.10	35.50	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from two fish.

Histopathological examination revealed the following:

Gill: lamellar hyperplastic branchitis mild, multifocal (F1 & F2), F1 slightly more severe and chronic and F2 mainly at the gill filament tips. Lamellar telangiectasia with multifocal thrombosis and free blood among gill filaments (F1 & F2).

Skin & Muscle: Dermatitis with few intracellular round blue structures resembling bacteria (likely *Piscirickettsia* sp.), moderate, multifocal, observed in F1.

Heart: Small foci of cellular degeneration (F1) and inflammatory cells (F1). Few thrombi (F2).

Gut and pyloric caeca: Within the normal range.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, random, mild, multifocal (F2). F1 displayed hepatocellular vacuolation (macrovesicles), mild, diffuse.

Kidney: Few renal tubules displaying hyaline droplets (F1).

Spleen: Within the normal range.

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

Signed:



Fish Health Inspector

Date: 07/11/2023

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/Topics/marine/science)



FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0119	DATE OF VISIT	11/10/2023
SITE No	FS0805	SITE NAME	Bagh Dail Nan Cean
CASE No	20230465	INSPECTOR	[REDACTED]

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

The above site was visited in accordance with the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015.

Samples were taken to be analysed for veterinary residues.

In addition, samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

Medicine records were inspected and found to be adequately maintained.

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.

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

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R20

Diagnostic case photos: 2023-0465



Figure 1 Overview photo of a) fish 1 and b) fish 2.

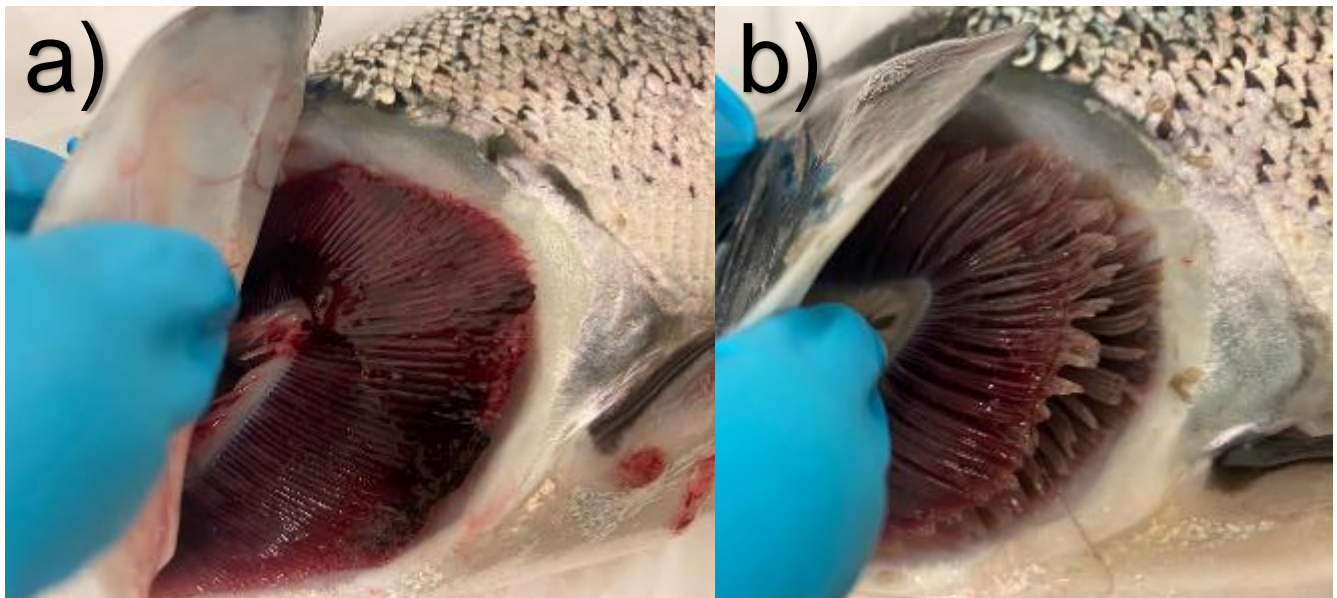


Figure 2 Photos of gills on a) fish 1 and b) fish 2.

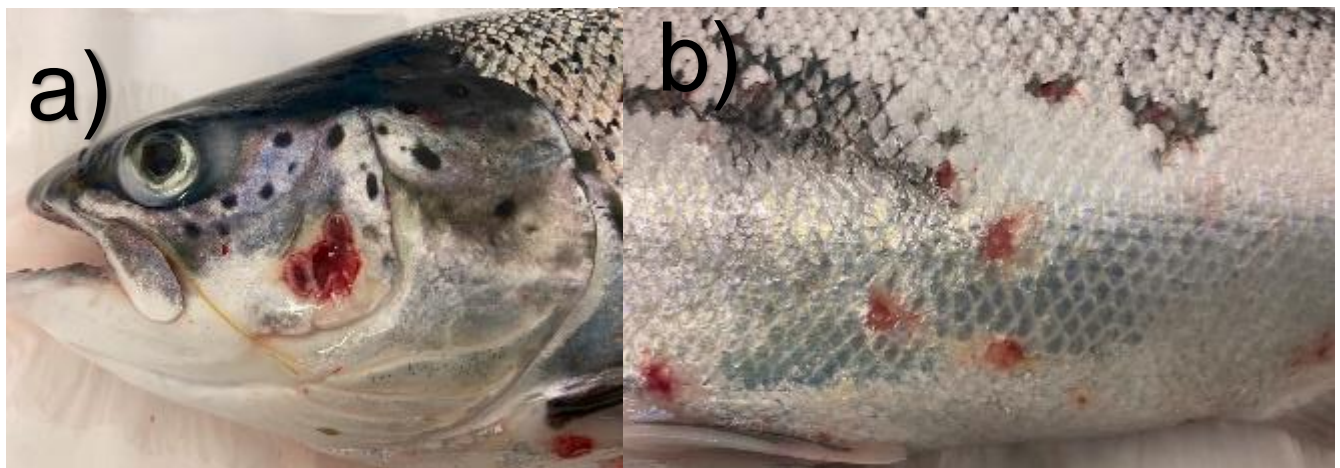


Figure 3 Picture of lesions observed on fish 1; a) lesion on head/operculum of fish 1 and b) small-rounded lesions on flanks of fish 1



Figure 4 Internal view of fish 1



Figure 5 Internal view of fish 2