

Case No:	2024-0398	Date of visit:	09/10/2024			
Time spent on site:	4 Hours	Main Inspector:				
Site No:	FS0805	Site Name:	Bagh Dail Nan Cean			
Business No:	FB0119	Business Name:	Mowi Scotland Ltd			
Case Types:	1 REP	2 DIA	3	4	5	6
Water Temp (°C):	13.6	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:

**Additional Case Information:**

Site inspected at short notice as inspector was in the area following a report of increased mortality at the site.

The site reported mortality of 1.8% for week 39 and 1.27% for week 40, these are the first notifications of mortality exceeding the required reporting threshold for this generation of fish. Mortality has been attributed to SRS and treatment loss in these recent weeks.

Mortality was reported highest in cages 10, 9 and 1 with 667 (cage 10), 480 (cage 9) and 416 (cage 1) fish being removed from the site on the date of inspection.

The site recently completed a round of 3 hour freshwater bath treatments which finished on Saturday 28th September.

The site was inspected in rough weather and due to time constraints only 4 cages were physically inspected. Pens with the highest counts of mortality were targeted for the inspection and 5 fish were removed for diagnostic sampling.

Visibility of the stock was limited given the poor weather conditions on site at the time of inspection, although several moribund and lethargic fish were observed in each of the pens inspected. The stock was also observed using the site's feeding cameras, the vast majority of the population in each pen was observed shoaling well and appeared to be in good condition.

The site is currently stocked with approximately 46,000 wrasse of both farmed and wild-caught origin. The site is planning on stocking lumpfish towards the end of November 2024.

Cleanerfish mortality : Wrasse - Week 40 (646, 1.37%), Week 39 (8,628, 15.45%), Week 38 (1,878, 3.25%), Week 37 (3,673, 5.98%) Mortality in weeks 37 - 39 was mainly attributed to treatment loss / handling.

Case No: 2024-0398 Site No: FS0805

Date of Visit: 09/10/2024

Inspector(s):

**Registration/Authorisation Details**

1. Business/site details summary checked by site representative?  
 2. Changes made to details?

Y
N

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

Total No facilities	12	Facilities stocked	12	No facilities inspected	4
Species	SAL	Wrasse			
Age group	2024 Q2	2024			
No Fish	1,330,482	46,191			
Mean Fish Wt	897g	120g			
Next Fallow Date (Site)	08/2025	Next Input Date (Site)	12/2025		
Recent (last 4 wks) disease problems?		Y	Any escapes (since last visit)?		N
If yes, detail:	SRS				

**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?

Y
11/10/2023
Y
Y
Y
N/A

**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:

Other (detail)

Whole fish waste collected by Billy Bowie

Week 40 (17,177 1.27%), Week 39 (24,709, 1.80%), Week 38 (15,822, 1.14%), Week 37 (8,153, 0.58%) See additional info for wrasse.

See additional information.

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.

Y

Y

Y

Y

Y

Y

Y

Y

Y

N

N/A

N/A

Y

**Treatments and Medicines Records**

1. Recent treatments (see comment)?

Y

If yes, detail:

T.M.S

If other, detail:

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)?

T.M.S

If other, detail:

6. Are medicines stored appropriately?

Y

**Biosecurity Records**

1. Biosecurity records available for inspection?

2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?

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?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?

5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?

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.)?

7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?

8. Have the biosecurity procedures been adequately implemented on site?

If no, detail:

**Results of Surveillance**

1. Has any animal health surveillance been carried out by, or on behalf of, the business?

2. If yes, are results available for inspection?

3. Any significant results?

If yes, detail (if not detailed under recent disease problems).

Records checked between:

11/10/2023 - 09/10/2024

Case no: 2024-0398Site No: FS0805Date of visit/ Sampling: 09/10/202409/

Priority samples: VI BA PA MG HI

Time sampling starts/ends: 16:00:0017:02:00Inspector: VMD No. 0

Environmental conditions: 1 Indoors2345

Summary samples HIST Y BA Y MG Y VI PA Total Samples

Add Fish/ Pools - click

Pool/ Fish No	F1	F2	F3	F4	F5							
Fish nos	1	2	3	4	5							
Pool Group												
Species	SAL	SAL	SAL	SAL	SAL							
Average weight	750g	750g	750g	750g	750g							
Sex	N/A	N/A	N/A	N/A	N/A							
Water Type	SW	SW	SW	SW	SW							
Stock Details		Inchmore (FS0226)	Inchmore (FS0226)	Inchmore (FS0226)	Inchmore (FS0226)	Inchmore (FS0226)						
	Stock Origin											
	Facility No	10	9	1	10	1						

10/2024 Additional Sample Information:

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5

Total Tests assigned

4

[illegible]

Case no:	2024-0398	Site No:	FS0805	Method of killing:	Percussive
Date of visit:	09/10/2024	Inspector(s):		Sheet Relevant:	Y

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

Fish Number		F1	F2	F3	F4	F5					
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic		M	W	W						
	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	M	W	W							
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	4	3	5	5	5					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem	W									
	Tubules mauve										
	Lack of fat	W	W	W	W						
Spleen	Enlarged	W	W	W	W	W					
	Granulomas										
Gut	No food present										
	Yellow pseudo-faeces	W									
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2024-0398

Date of visit: 09/10/2024

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



Additional comments:

Case No:

2024-0398

Date of visit:

09/10/2024

Site No:

FS0805

Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 <sup>nd</sup> Insp
MG_SAV	0/5	16/10/2024		16/10/2024		05/11/2024		
MG_ISA	0/5	16/10/2024		16/10/2024		05/11/2024		
MG_PMCV	0/5	16/10/2024		16/10/2024		05/11/2024		
MG_VHS	0/5	16/10/2024		16/10/2024		05/11/2024		
MG_AGDQ	5/5	16/10/2024		16/10/2024		05/11/2024		
MG_IHNQ	0/5	16/10/2024		16/10/2024		05/11/2024		
MG_PARA_THER_Q	5/5	16/10/2024		16/10/2024		05/11/2024		
MG_PISCI	3/3	16/10/2024		16/10/2024		05/11/2024		
MG_SAL_POX	5/5	16/10/2024		16/10/2024		05/11/2024		
VSPE	4/5	28/10/2024		24/10/2024		05/11/2024		
CGDH	4/5	28/10/2024		24/10/2024		05/11/2024		
GPAT	4/5	28/10/2024		24/10/2024		05/11/2024		
EPIT	1/5	28/10/2024		24/10/2024		05/11/2024		
AMGD	3/5	28/10/2024		24/10/2024		05/11/2024		
HPAT	5/5	28/10/2024		24/10/2024		05/11/2024		
LPAT	4/5	28/10/2024		24/10/2024		05/11/2024		
KPAT	5/5	28/10/2024		24/10/2024		05/11/2024		
SPAT	3/5	28/10/2024		24/10/2024		05/11/2024		
PISH	4/5	28/10/2024		24/10/2024		05/11/2024		
MG- IPN	0/5	01/11/2024				05/11/2024		

Report Summary			
Case Type	Date	Insp	2 <sup>nd</sup> Insp
REP, DIA	05/11/2024		



# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	09/10/2024
<b>SITE No</b>	FS0805	<b>SITE NAME</b>	Bagh Dail Nan Cean
<b>CASE No</b>	20240398	<b>INSPECTOR</b>	

### Section 1: Summary

The site was inspected following reports of increased mortality. The increased mortality has been attributed to salmonid rickettsial septicaemia (SRS) and treatment losses. During the inspection a limited number of pens were inspected due to inclement weather conditions. In the pens that were inspected a number of moribund and lethargic fish were observed and five fish were removed for diagnostic sampling.

Histopathology examination revealed moderate complex gill issues with amoebic gill disease and pathology consistent with salmonid rickettsial septicaemia, which were both confirmed by qPCR.

Samples were also screened and tested positive by qPCR for *Paranucleospora theridion*, and salmon gill poxvirus (SGPV).

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

The site was inspected following reports of increased mortality attributed to SRS and treatment losses. Mortality was reported at 1.8% for week 39 and 1.27% for week 40, these were the first notifications of mortality exceeding the required reporting threshold for this generation of fish. The highest mortality had been observed in pens 10, 9 and 1. The site recently completed a round of 3 hour freshwater bath treatments, which finished on Saturday 28th September.

During the inspection a limited number of pens were inspected due to inclement weather conditions. In the pens that were inspected a number of moribund and lethargic fish were observed. Stocks were also observed using the sites feeding cameras, the vast majority of the population in each pen were shoaling well and appeared to be in good condition. All fish that were sampled were lethargic and moribund. F2, F3 and F4 were observed to be anorexic.

Internally, F1 to F3 had bloody ascites. There was a lack of fat around the pyloric caeca in F1 to F4. F1 had yellow pseudo faeces in the gut. All fish had enlarged spleens.

## Samples

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

Fish number	Facility number	Species	Stage	Origin
F1, F4	10	Atlantic salmon	2024 Q2, 750g	Inchmore (FS0226)
F2	9	Atlantic salmon	2024 Q2, 750g	Inchmore (FS0226)
F3, F5	1	Atlantic salmon	2024 Q2, 750g	Inchmore (FS0226)

## Results

**Bacteriology:** Kidney and gill from F1 to F5 inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

- *Vibrio* sp.: Kidney (F1, F2, F4 and F5)

The level and purity of growth would suggest this bacterium would be implicated as a primary pathogen in F4 and F5, as a secondary pathogen in F2 and is only lightly present in F1.

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

### *Piscirickettsia salmonis* (SRS)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	21.57	24.59	24.48	24.56	POSITIVE
F2	21.81	23.69	23.67	23.88	POSITIVE
F3	20.91	30.36	30.80	30.68	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).

### Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.40	26.24	26.26	26.21	POSITIVE
F2	20.76	23.74	23.88	24.56	POSITIVE



<b>F3</b>	19.21	28.35	28.36	28.25	<b>POSITIVE</b>
<b>F4</b>	20.03	27.36	27.44	27.32	<b>POSITIVE</b>
<b>F5</b>	19.08	26.09	26.00	26.01	<b>POSITIVE</b>

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)

<b>Fish Number</b>	<b>Endogenous control Cp value</b>	<b>Cp Values</b>			<b>Reported Result (PCR)</b>
<b>F1</b>	19.40	29.52	29.47	29.32	<b>POSITIVE</b>
<b>F2</b>	20.76	29.36	29.50	29.49	<b>POSITIVE</b>
<b>F3</b>	19.21	28.03	28.02	27.84	<b>POSITIVE</b>
<b>F4</b>	20.03	30.01	29.81	29.69	<b>POSITIVE</b>
<b>F5</b>	19.08	30.57	30.58	30.68	<b>POSITIVE</b>

*Paranucleospora theridion*

<b>Fish Number</b>	<b>Endogenous control Cp value</b>	<b>Cp Values</b>			<b>Reported Result (PCR)</b>
<b>F1</b>	19.40	23.34	23.45	23.41	<b>POSITIVE</b>
<b>F2</b>	20.76	20.52	20.38	20.48	<b>POSITIVE</b>
<b>F3</b>	19.21	21.60	21.60	21.57	<b>POSITIVE</b>
<b>F4</b>	20.03	20.87	20.86	20.61	<b>POSITIVE</b>
<b>F5</b>	19.08	18.32	18.23	18.04	<b>POSITIVE</b>

**Histology:** Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1 to F5.

Histopathological examination revealed the following:

Gill: Filament hyperplasia and lamellar fusion moderate, multifocal (F1, F3, F4) with lamellar epithelial necrosis (F3, F4) and several amoeboid cells resembling *Neoparamoeba perurans* (F1, F2, F3) and several basophilic epithelial inclusions (likely epitheliocystis) (F1). Lamellar telangiectasia, mainly at the gill tips (F2), marked. F2 also displayed area of necrosis with few

R09



round blue structures resembling bacteria that Gram-negative (likely *Piscirickettsia* sp.). F2 also displayed some apoptotic cells shedding off and some chloride cell displacement (resembling salmon poxvirus). Some post-mortem artefacts also observed (F1, F2, F4, F5) and free blood among gill filaments (F2).

Skin & Muscle: Within the normal range.

Heart: Mild myocarditis (F1). Occasional fibre degeneration observed on the compact layer (F3). Epicarditis (F1, F2, F3, F4, F5), mild with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F4).

Gut and pyloric caeca: Peritonitis, marked, multifocal (F1, F2, F3, F4, F5) with few round blue structures resembling bacteria (likely *Piscirickettsia* sp.) (F1, F2, F4).

Pancreas: Within the normal range.

Liver: Some capsulitis (F1, F3, F4) with few intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.), some perivascularitis (F2). Hepatocellular necrosis, minor, multifocal (F3), hepatocellular vacuolation (macrovesicles), some (F3).

Kidney: Mild-up-to-moderate, multifocal, necrosis interstitial cell (haemopoietic) (F1-F5) with few intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.) (F1, F4 & F5). F5 also displayed haemorrhage.

Spleen: Necrosis (F1, F4), multifocal, mild and few intracellular round blue structures resembling bacteria that stained Gram-negative (likely *Piscirickettsia* sp.) (F4, F5). F1, F4 displayed some erythrophagocytosis.

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

Signed:

Date: 05/11/2024

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](https://www.gov.scot/policies/fish-health-inspectorate/) ([www.gov.scot](https://www.gov.scot))



2024-0398

Gills

F1





F2





F3





F4





F5



F1







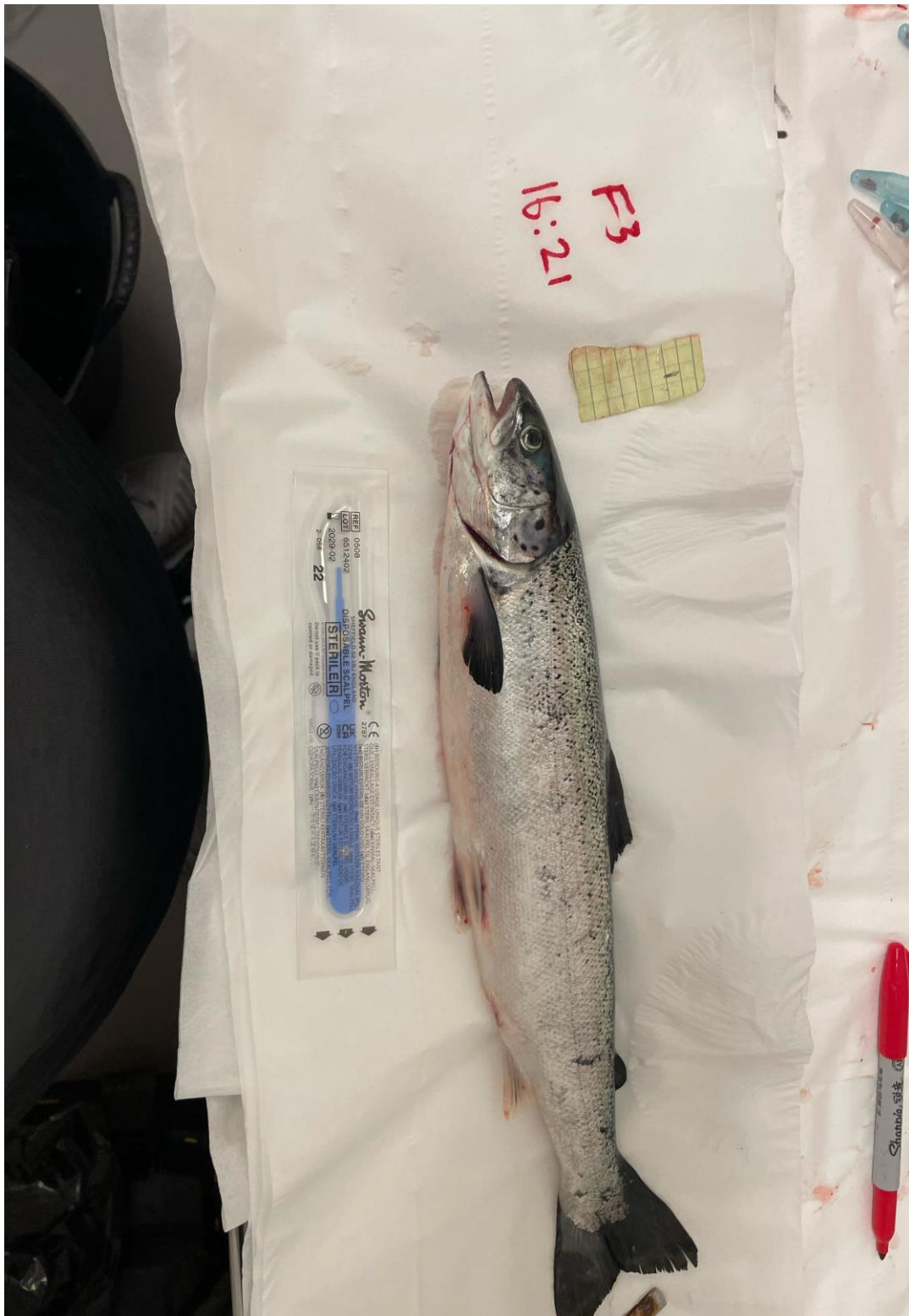
F2







F3







F4







F5

