

Case No: 2024-0173 Date of visit: 28/05/2024

Time spent on site: 4.5hrs Main Inspector: [REDACTED]

Site No: FS1291 Site Name: Caolas A Deas

Business No: FB0119 Business Name: Mowi Scotland Ltd

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

Water Temp (°C): 10.55 Thermometer No: T308 FHI 045 completed N/A

Observations: Region: WI Water type: S CoGP MA: W-5

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:**

Fish input from Trilleachan Mor on 09/04/2024 (wk15). Site fallowed out previous crop on 04/04/2024. Risk assessment inspected 06/06/2024.

Stock Origin: pen 5, Lochailort, Fanad; rest of the pens, Inchmore, Aquagen

Harvests deadhaul and livehaul- to Blar Mhor.

Statutory inspection conducted following report from the business that clinical signs of Bacterial Kidney Disease (BKD) have been observed on 23/05/2024. The detailed sampling of fish by the business commenced on site following the observation of clinical signs at Seaforth (FS1042) and subsequent CDN placement. The stock origin of fish currently at Caolas a deas is noted as Trilleachan Mor (FS1118). Fish previously transferred to Trilleachan Mor originated from Seaforth (same batch of fish).

During the site inspection, all stocked pens were inspected and 5-10 lethargic fish were observed in the majority of the pens. The majority of these fish were found to be deformed. From the ten fish that were removed, 4 were sampled following the observation of clinical sign relating on BKD.

The 4 fish sampled showed signs of swollen, grey, granular kidney, bloody ascites, swollen spleen with granules and yellow pseudofaeces.

Pen 5 on site was noted as the pen with increased mortality compared to the rest of the site; this is also the pen that originally during routine health surveillance from the business, clinical signs of BKD were observed.

On the day of inspection, pen 1 was receiving a passive grade/targeted harvest - permission to move dead fish off site was given by FHI on 27/05/2024.

Health team visit every 3 weeks.

A few wrasse were observed on site during site inspection. No records relating to cleanerfish because site did not think that there were cleanerfish on site. Site mentioned that cleanerfish may have been transferred from Trilleachan Mhor - ~5% remaining on site.

Case No:  Site No:

Date of Visit:  Inspector(s):

**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	<input type="text" value="8"/>	Facilities stocked	<input type="text" value="6"/>	No facilities inspected	
Species	<input type="text" value="SAL"/>				
Age group	<input type="text" value="2023 Q2"/>				
No Fish	<input type="text" value="233,004"/>				
Mean Fish Wt	<input type="text" value="5.1kg"/>				
Next Fallow Date (Site)	<input type="text" value="July 2024"/>	Next Input Date (Site)	<input type="text" value="Q4 2024"/>		
Recent (last 4 wks) disease problems?	<input type="text" value="N"/>		Any escapes (since last visit)?		
If yes, detail:	<input type="text" value=""/>				

**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)?

If yes, detail: T.M.S

If other, detail:

2. Medicines records available for inspection?

3. Are records complete and correctly entered?

4. Are fish in a withdrawal period?

5. If yes, what treatment(s)? T.M.S

If other, detail:

6. Are medicines stored appropriately?

**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?

23/05/2024- samples taken following BKD of  
Seaforth and detailed sampling conducted  
Report received on 29/05/2024 showed sam  
for PRV, PMCV and BKD. Report seen and  
health report of detailed sampling conducte  
team of the business.

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

Records checked between:

06/02/2024-28/05/2024

8
N
Y
Y
Y
Y
Y
N/A
Y
Y
544, 0.22%
N
N
N/A
N/A

Y
Y
Y
Y
Y
Y
Y
Y
confirmed at on site. amples positive also initial d by health

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								
Fish nos	1	2	3	4								
Pool Group												
Species	SAL	SAL	SAL	SAL								
Average weight	5.1kg	5.1kg	5.1kg	5.1kg								
Sex	N/A	N/A	N/A	N/A								
Water Type	SW	SW	SW	SW								
Stock Details	Stock Origin	Trilleachan Mor (FS1118)	Trilleachan Mor (FS1118)	Trilleachan Mor (FS1118)	Trilleachan Mor (FS1118)							
	Facility No	1	4	5	5							

05/2024 Additional Sample Information:

Total Tests assigned




Case no: 2024-0173

Site No: FS1291

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	3	4				
Time sampled after death (if > 45 minutes)									
External Signs									
Behaviour	Moribund	M	M	M	M				
	Lethargic								
	Hanging vertical								
	Spiralling								
	Flashing								
	Loss of equilibrium								
Body	Dark		S	M					
	Distended abdomen								
	Anorexic								
	Scale Oedema								
Opercula	Shortened								
	Flared								
Haemorrhaging	Throat								
	Ventrum	M							
	Base of fins	W	W						
	Elsewhere								
Eyes	Exophthalmic	S							
	Enophthalmic (sunken)								
	Cataract								
	Haemorrhagic								
Gills	Pale			W					
	Zoned								
	Necrotic								
Lesions	Flank								
	Elsewhere								
Vent	Inflamed	W	M	M	M				
	Trailing faeces								
Lice Load	Estimate numbers		3	4	3	3			
Internal Signs									
Ascites	Clear								
	Bloody	M	M	S	S				
Oedema	In tissues								
Heart	Pale/anaemic								
	Granulomas								
	Deformed								
Liver	Petechial haem								
	Gross haem								
	Tissue breakdown								
	Enlarged								
	Colour number(s)		6	2	3	2			
	Granulomas		M	W	W				
	Lesions								
Pyloric caeca	Petechial haem								
	Tubules mauve								
	Lack of fat								
Spleen	Enlarged	S	S	S	S				
	Granulomas		W	W	W				
Gut	No food present								
	Yellow pseudo-faeces	S	S	S	S				
	External haem								
	Internal haem								
Body wall	Haemorrhaging								
Swim bladder	Haemorrhaging				M				
	Fluid filled								
Kidney	Swollen	M	S	S	S				
	Grey		S	S	S				
	Granular		S	S	S				
	Liquefied								
General	Parasites present								
	Anaemia								

Case no: 2024-0173

Date of visit: 28/05/2024

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:

Site No: FS1291
Case No: 2024-0173
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



Case No: **2024-0173** Date of visit: **28/05/2024**  
 Site No: **FS1291** Inspector: **[REDACTED]**

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 <sup>nd</sup> Insp
AGDQ	0/4	31/05/2024		31/05/2024		18/06/2024		
VHSP	0/4	31/05/2024		31/05/2024		18/06/2024		
BKDP	3/4	31/05/2024		31/05/2024		18/06/2024		
PNST	4/4	31/05/2024		31/05/2024		18/06/2024		
SPVP	0/4	31/05/2024		31/05/2024		18/06/2024		
SALP	0/4	31/05/2024		31/05/2024		18/06/2024		
IPNM	0/4	31/05/2024		31/05/2024		18/06/2024		
ISAQ	0/4	31/05/2024		31/05/2024		18/06/2024		
PMVP	3/4	31/05/2024		31/05/2024		18/06/2024		
RSBA	4/4	18/06/2024		18/06/2024		18/06/2024		
CMPS	2/4	18/06/2024		18/06/2024		18/06/2024		
GPAT	2/4	18/06/2024		18/06/2024		18/06/2024		
HPAT	2/4	18/06/2024		18/06/2024		18/06/2024		
SPAT	3/4	18/06/2024		18/06/2024		18/06/2024		
LPAT	4/4	18/06/2024		18/06/2024		18/06/2024		
IHNP	0/4	21/06/2024		31/05/2024		18/06/2024		

Report Summary			
Case Type	Date	Insp	2 <sup>nd</sup> Insp
STI, REP	12/06/2024		
DIAG	18/06/2024		
Case completion	19/06/2024		

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	28/05/2024
<b>SITE No</b>	FS1291	<b>SITE NAME</b>	Caolas A Deas
<b>CASE No</b>	20240173	<b>INSPECTOR</b>	██████████

### Section 1: Summary

The site was inspected following notification from a third party of the suspected presence of bacterial kidney disease (BKD). Four fish were selected for diagnostic sampling.

Histopathology examination revealed marked granulomatous inflammation consistent with BKD, and confirmed by qPCR. Two fish also displayed features consistent with cardiomyopathy syndrome (CMS), also confirmed by qPCR, and mild hyperplastic proliferative gill pathology.

*Paranucleospora theridion* was detected by qPCR.

Following the positive PCR result for *Renibacterium salmoninarium* and the observed clinical signs of BKD the initial designation notice covering the site has been replaced with a confirmed designation notice.

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

A statutory inspection was conducted at Caolas a Deas following a report from the business that clinical signs of BKD had been observed on 23/05/2024. The stock origin of fish currently at Caolas a Deas was noted as Trilleachan Mor (FS1118). Fish previously transferred to Trilleachan Mor originated from Seaforth (FS1042). At the time of the inspection, the site was stocked with 233,004 (2023 Q2) Atlantic salmon. All pens were inspected and moribund fish were observed across the site displaying clinical signs of disease. Four fish were removed from pens 1,4 and 5 for diagnostic sampling.

Pen 5 on site was noted with increased mortality compared to the rest of the site; this is also the pen that clinical signs of BKD were observed in during routine health surveillance from the business.

Externally, all four fish were moribund, with two being dark in colour. All fish had inflamed vents. Haemorrhaging was noted on the base of fins of F1 and F2, with the ventrum of F1 also displaying haemorrhaging. F1 exhibited exophthalmia in the eyes. The gills of F3 were pale. Lice loads on the fish ranged between 3-4, mainly consisting of *Lepeophtheirus salmonis* at all stages of development.

Internally, bloody ascites was observed in the body cavity of all fish. The livers of F2-F4 had granulomas present, with the liver of F1 being really pale in colour. The spleens of all four fish were enlarged with granulomas being present in F2-F4. Pseudo-faeces were present in the guts

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of F1-F4. Haemorrhaging was present on the swim bladder of F4. Lastly, the kidneys of all fish were swollen. The kidneys of F2-F4 were grey in colour and strongly granular.

### Samples

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

Fish number	Facility number	Species	Stage	Origin
F1	1	Atlantic salmon	2023 Q4 5.1Kg	Trilleachan Mor (FS1118)
F2	4			
F3-F4	5			

### Results

**Bacteriology:** Kidney and gill material from F1-F4 were inoculated onto appropriate media for the isolation of bacteria.

No significant bacteria were isolated.

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

#### *Renibacterium salmoninarum* (BKD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	21.98	27.27	27.27	27.51	POSITIVE
F3	21.91	29.58	29.76	29.74	POSITIVE
F4	21.14	22.63	22.71	23.06	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 myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	Negative
F2	14.31	20.77	20.89	20.77	POSITIVE
F3	14.32	18.88	18.93	18.78	POSITIVE
F4	14.61	17.98	18.01	18.14	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 salmon gill poxvirus (SGPV).

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**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	22.21	38.92	<40	38.76	POSITIVE
F2	21.98	38.43	<40	38.16	POSITIVE
F3	21.91	32.96	32.99	32.82	POSITIVE
F4	21.14	37.47	36.78	36.77	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-F4. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Some isolate lamellar epithelial thickness (F1). Lamellar hyperplasia and fusion, some, multifocal (F2, F3) and F3 also displayed areas of necrosis. Several aneurysmal dilation/telangiectasia (F2, F4).

Skin & Muscle: Small area of inflammation observed in skeletal red muscle (F3, F4).

Heart: Small foci of muscular necrosis (F1). Endomyocarditis, multifocal, ranging from multifocal to diffuse (F3, F4). F4 also displayed some granulomatous inflammation with very few scattered Gram-positive bacteria observed. F2 exhibited some thrombi. Epicarditis, mild (F2, F4).

Gut and pyloric caeca: Some peritonitis (F2).

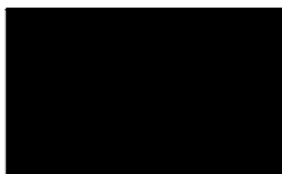
Pancreas: Within the normal range.

Liver: Small area of granulomatous inflammation with necrosis (F1-F4). Capsulitis (F1). Hepatocellular necrosis, mild, multifocal (F2). Some cuffing (F1).

Kidney: Interstitial granulomatous inflammation with necrosis, ranging from moderate to marked, multifocal (F2-F4) with very few scattered Gram-positive bacteria observed (F2, F4).

Spleen: Granulomatous inflammation, mild, multifocal with necrosis (F2-F4). Congested (F1).

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



Signed:

Date: 18/06/2024

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## 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/)

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	28/05/2024
<b>SITE No</b>	FS1291	<b>SITE NAME</b>	Caolas A Deas
<b>CASE No</b>	20240173	<b>INSPECTOR</b>	

### Statutory Inspection

All epidemiological units were inspected. Clinical signs associated with BKD were observed.

The movement restrictions will remain in place and permission must continue to be sought for movements of live and dead fish from the site. You will have receive a separate written confirmation of the decision regarding the request to transfer fish.

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

The following points were raised with the site representative during the inspection:

- Cleaner fish movements from Trilleachan Mhor not recorded. Mortality and stock details relating to cleaner fish not available for inspection. Business reminded that records relating to all aquaculture animals on site, as required by authorisation conditions, should be maintained.

These must be addressed to ensure the conditions of authorisation for your Aquaculture Production Business (APB) are being met. Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below) within 30 days of the date this report was issued.

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

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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# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0119	<b>DATE OF VISIT</b>	28/05/2024
<b>SITE No</b>	FS1291	<b>SITE NAME</b>	Caolas A Deas
<b>CASE No</b>	20240173	<b>INSPECTOR</b>	

### Case completion report

Recommendations in relation to the above case were made for implementation by 19<sup>th</sup> July 2024. Following submission of the required documentation, evidence has now been provided to the Fish Health Inspectorate to demonstrate that the recommendations have been implemented.

This case will now be closed. This site may be subject to further audit and recommendations in the future.

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

Signed:



Date: 19/06/2024

Fish Health Inspector

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**Diagnostic sampling: 20240173 photos**



*Figure 1 Overview of F1. Insert picture shows exophthalmia,*



*Figure 2 Internal view of F1.*



*Figure 3 Overview of F2*





*Figure 4 Gill of F2*



*Figure 5 Internal view of F2*



*Figure 6 Gill of F3*





Figure 7 Overview of F3

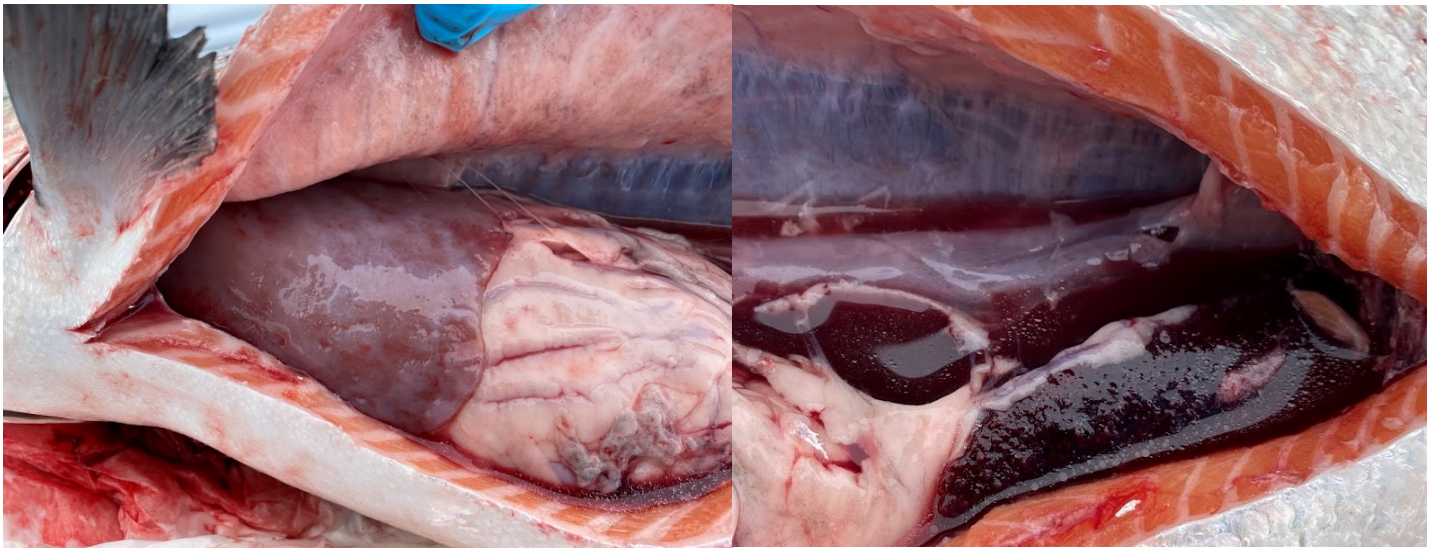


Figure 8 A) Picture of liver of F3. B) picture of spleen of F3



Figure 9 picture of haemorrhaging on swim bladder of F3





Figure 10 Gills of F4

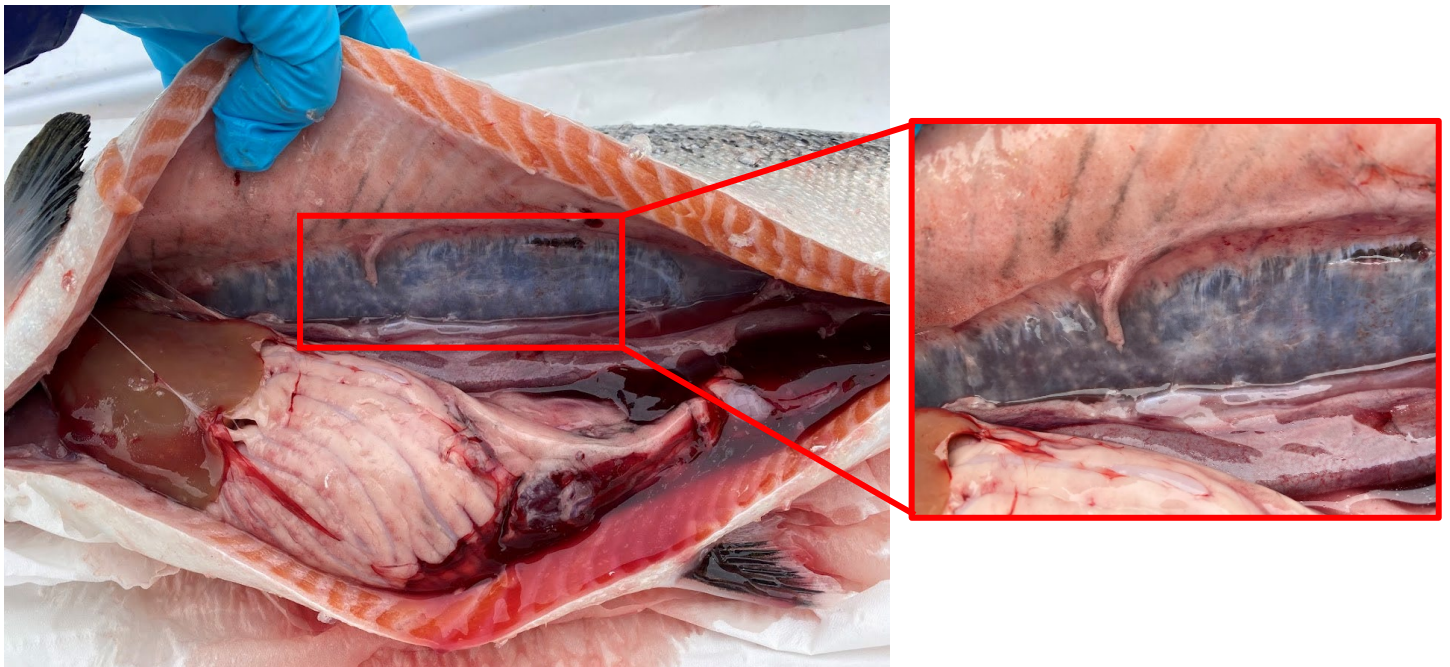


Figure 11 Internal view of F4. Insert shows close up of kidney depicting granulomas.