

Fish Harvesting Site Inspection Form

Animal Health and Welfare (Scotland) Act 2006;

COUNCIL REGULATION (EC) No 1099/2009 on the protection of animals at the time of killing,

Work schedule number

Date of visit: 29/09/22

Address of head quarters: [REDACTED]

Address of Harvesting site: [REDACTED]
[REDACTED]

Location of farm site for fish being processed:

Species of fish: Salmon **Approximate number being harvested:** [REDACTED]

Type of visit: Routine

Background of complaint (if applicable): N/A

Name and contact details of company/private vet: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Present at visit: [REDACTED]

Assurance schemes: RSPCA

Harvesting

Well-boat outflow pipe:

Monitoring for: all of the below

Oxygen

PH

Temperature

Records kept: yes

Additional Comments (eg speed of fish being fed through): Speed adapted through radio communication between staff at harvesting site and well boat.

Description of process: Live fish are harvest by wellboat, transported to the site then pumped by a pipe system from the boat to the facility. No human handling ahead of the actual slaughter. Fish are transported on the wellboat then allowed to settle down for a period of time ahead of slaughter.

Fish travel via the pumping system (with sea water) to the percussive stunning system.

We were able to observe the fish coming through the pipes to the harvesting station proper (hatch that can be opened near the location where fish exit the pipes and enter the harvest station shoot system. Another observation point was at the end of the harvest station shoot system before fish are fed into the Baader stunning system.

Stunning process:

Types of stunning used: Percussive stunning

Set up of electrical stunning if applicable: n/a

Voltage

Time

Intensity

Effectiveness

Model of percussive stunner: Baader 101 stunning system

Set up of stunning process: The Baader 101 stunning system is used. Two modules of the Baader 101 are set up side by side (port/starboard) and 2 staff work on each of the modules. Each module has 8 lines leading to a percussion stunner each. The percussion stunners are adjusted for each batch of salmon, depending on the average weights recorded for the batch. Staff check that the stunner is working correctly at the start of each harvesting and record the number of ineffective stuns/ manual back-up stuns needed. If fish are not stunned effectively, the stunners are adjusted.

Fish are aligned with the machine by trained operators. During the inspection 2 people were on each line: 1 aligning the fish, 1 bleeding and 1 as a back-up in case stunning is not immediately effective.

Assessment of effectiveness of stunners: Operators assess effectiveness of stun by observation of the fish when handling/positioning for bleeding. Staff check for excessive movement on handling, rhythmic breathing and eye-roll by turning the fish prior to bleeding. During the inspection this was consistently done, and operators re-stunned immediately by hand-held priest if signs of consciousness were seen.

Bleeding procedure: Hand-held knife used by trained operators to sever the all the gill arches on one side

Length from stunning to bleeding: Immediate

Maintenance: Mal-functioning stunners are repaired by staff immediately. Where repairs are too complex, the stunner is not used until repaired by maintenance staff. The whole stunning system is disassembled each day and checked for wear and tear and repaired before the next day if necessary.

Backup (secondary) stunning process: Hand-held priest

Number of fish observed being stunned and number requiring backup stunning:

Approx [REDACTED] fish observed during the inspection. During the time spent in the harvesting station, approx [REDACTED] fish required re-stunning

Additional Comments (eg on handling, welfare actions):

All staff present on the day of inspection were noted to handle the fish with care and confidence when aligning for stunning and when assessing effectiveness of stun. Re-stuns were carried out immediately if required and were accurately positioned to ensure loss of consciousness.

Procedure for other fish species in the line (eg cleaner fish etc): The staff handling the salmon also handle the cleaner fish, which are fed into a shoot system to water bath with anaesthetic and are euthanised. During the inspection no cleaner fish were noted.

Staffing levels: [REDACTED] staff and site supervisors were observed during the harvesting process, additional staff on wellboat. Staff rotated positions to ensure max. attention and change in position to avoid repetitive stress injuries.

Staff training and records: Seen during previous inspection in 2021 in detail, not specifically requested for this inspection. Operators confirmed that supervisors receive external training and all staff on-house training. Supervisors are present during the entire process.

Equipment maintenance: As noted above, records seen during previous inspection in 2021. Operators confirmed the same records are kept.

Are Standard operating procedures available for review: Yes

Outcome: Compliant

CCTV available: Yes

Assessment: Compliant

Any indicator of on farm issues: Very few fish seen with deformities (approx [REDACTED] of [REDACTED]) or skin/fin damage.

(Eg skin/fin damage, sea lice damage etc)

Any issues found: No issues found

Actions required: None

Recommendations: None

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Work schedule number: N/A

Date of visit: 29/08/2022

Address of headquarters:

[REDACTED]

Address of Harvesting site:

Location of farm site for fish being processed:

Species of fish: Atlantic salmon

Approximate number being harvested:

Type of visit: Routine inspection

Background of complaint (if applicable): N/A

Name and contact details of company/private vet:

Present at visit:

Assurance schemes: RSPCA, GlobalGAP, LRQA, NSF amongst others

Harvesting

Well-boat outflow pipe:

Monitoring for:

Oxygen – yes, monitoring is continuous

pH – yes, monitoring is continuous,

Temperature – yes, monitoring is continuous

Records kept: – yes and were viewed digitally. Indicate little fluctuation during a harvest, previous night indicated water temp of ~11C, pH ~7.4, O₂ consistently above 7mg/litre minimum at ~8.5mg-10mg/litre. A pre-transport record is also kept and was available to view. This records sea temperature at time of loading – to keep in line with the RSPCA welfare standard that water in well boat must be chilled at a maximum of 1.5C per hour down to minimum of 50% of ambient water temperature. Sea temperature at loading recorded as 14C.

Additional Comments (eg speed of fish being fed through): Advised that fish spend ~3-4 minutes in the well-boat outflow pipe. Personnel on the wellboat have CCTV access at all times to the harvest site and are in headset contact with manager on duty at the site. If fish are spending any greater than 5 minutes in the pipe, the pipe can be evacuated back to well

boat. Wellboat will vary speed depending on harvest site – they use the CCTV to monitor amount of fish arriving at stunners and can react immediately by slowing speed or evacuating pipe back in to well boat if required to prevent back up of fish in the pipe. At the end of the harvest the pipe is swept with sponge-balling technique that ensures no fish would remain in pipe.

Stunning process:

Types of stunning used: automatic mechanical stunning used for salmon; electrical stunning used for cleaner fish. Electrical stunning not yet used for salmon due to flesh quality issues, but research for this is ongoing.

Set up of electrical stunning if applicable: only used for cleaner fish

Voltage: ~ 400V supply, set up and certified by one of the [REDACTED] vets

Time: continuous

Intensity: not given

Effectiveness: only 1 cleaner fish was observed during this visit. Electrical stun appeared to be instantly effective with the fish rendered insensible and the stun maintained until the fish entered a mechanical macerator. There is a short conveyor belt on which the fish are stunned, and this goes directly into a mechanical macerator.

Model of percussive stunner: RV7s and BAADER1

Set up of stunning process: There are 8 x RV7s and 4 x BAADER1 stunners. The RV7s are manned, with [REDACTED] for [REDACTED] stunners – so [REDACTED] personnel manning these stunners at all times. The BAADER1 stunners are swim-through, a flow of water guides fish into the stunners rather than being guided by personnel. This process was observed and the fish in the water flow did not appear stressed – no flapping or fins above water, and no swimming against the flow. The flow guides fish into the stunner without force, and the mechanical stunning and bleeding is then automatic. The 2 bleed belts converge at the back-up stunners.

Assessment of effectiveness of stunners: At the start of each harvest, 10 fish are put through each machine without being automatically bled so that the effectiveness of stun can be monitored. This is recorded manually in fish stun check logs. These records were observed which showed for the previous 4 weeks in majority of cases all 10 stuns for each machine were effective. Where a stun was recorded as ineffective, the action taken is recorded – in records observed this was to reset the stunner and then re-assess. Stun effectiveness records were requested from previous weeks were requested and emailed to me by management. These indicate that stun effectiveness is consistently >99% which is inline with what was observed during the inspection.

Bleeding procedure:

Length from stunning to bleeding: SOP states <10 seconds. In reality the length of time observed was ~1 second as the process is automated. I did not observe any fish that had not been bled by the automated stunners. If a secondary stun is required, the gills are cut straight away again by the secondary stunners.

Maintenance: usually [redacted] maintenance officers on each harvest, would on occasion operate with minimum of [redacted].

Back-up (secondary) stunning process: There are [redacted] back-up stunners located at the end of the bleed belt and each one is manned. There are therefore [redacted] individuals whose job it is to monitor effectiveness of stun. The [redacted] back up stunners are MT6 model, and gills are cut again manually to ensure bleed. The time taken for fish to go from first stun and bleed to where the back-up stunners are located was observed to be between 5 and 7 seconds.

Number of fish observed being stunned and number requiring backup stunning: I observed the harvest floor for ~30 minutes and during this time saw ~7 fish require a secondary stun, out of ~750 fish observed. These fish were noticed in the bleed belt within a few seconds of entering due to the continuous flow and I did not observe any fish ineffectively stunned that were not immediately picked up by the back-up stunners. SOP for assessment of humane slaughter was available to view. Stun effectiveness records requested indicated that the harvest on the night I visited 0.3% required a secondary stun. Records were provided for each harvest for the last 6 months, and percentage of fish requiring a secondary stun is consistently <0.5%.

Additional Comments (eg on handling, welfare actions): If any fish were for some reason to overshoot the stunners and go on to floor, a manual priest stunner is available for use and fish are manually bled, they are then washed before being returned to bleed belt. I did not observe any fish ending up on the floor during the visit. If this were to occur it would be in the location of where the manned stunners are so personnel should observe this occurring immediately. Priest stunner was observed.

Procedure for other fish species in the line (eg cleaner fish etc): these fish are separated from the salmon based on size and fall through slatted bars at the de-waterer down chute straight on to belt where they are electronically stunned with continuous current, before going through a chute directly to a mechanical macerator. The process is such that they do not regain consciousness before immediately being killed.

Staffing levels: Minimum of [redacted] staff on floor during harvest, usually [redacted]. Minimum of [redacted] with fish welfare officer certification required for harvest.

Staff training and records: Individual staff training records are kept digitally. I viewed these for staff members working the night of my visit. Welfare training consists of the 2-day fish welfare course from UHI, RSPCA assurance awareness training and in-house training through [redacted] welfare scheme. Records appeared to be up to date with the most recent log of July 2022. Many other training modules related to the harvest process were present in the training records though not all yet completed.

Equipment maintenance: usually [redacted] maintenance officers on shift for each harvest. All equipment appeared to be working as expected during the harvest.

Are Standard operating procedures available for review:

Outcome: yes, hard copies are kept in a folder on site and were reviewed for assessment of humane slaughter and slaughter of cleaner fish.

CCTV available: yes, the harvest process was observed by CCTV prior to entering the harvest site during the visit and runs continuously during harvest.

Assessment: Whole harvest process can be visualised via CCTV, including the back-up stunners. Good quality and CCTV is kept for 90 days.

Any indicator of on farm issues (Eg skin/fin damage, sea lice damage etc): none noted on night of visit. A harvest report is completed after each harvest and sent to [REDACTED] vets. Records any comments regarding lesions and also records number of dead fish arriving at harvest. If this number is >50 this is out-with their HACCP and is escalated.

Any issues found: No issues identified during harvest process. Good level of record keeping and management open and keen to discuss how they operate.

Actions required: None at present.

Recommendations: Continue to research use of electro-stunning for salmon. Although no over-crowding or stress behaviour was observed in fish arriving at stunners, observations from other plants are that electro-stunning prior to mechanical can smooth process even further.

Fish Harvesting Site Inspection Form**Animal Health and Welfare (Scotland) Act 2006;****COUNCIL REGULATION (EC) No 1099/2009 on the protection of animals at the time of killing,**

1. **Work schedule number:** Not known
2. **Date of visit:** 31/08/2022 **Start:** 6:45am **End:** 9:50am
3. **Address of head-quarters:** [REDACTED]
4. **Address of Harvesting site:** [REDACTED]
5. **Location of farm site for fish being processed:** [REDACTED]
6. **Species of fish:** Salmon
7. **Approximate number being harvested:** [REDACTED]
8. **Type of visit:** routine inspection
9. **Background of complaint (if applicable):** N/A
10. **Name and contact details of company/private vet:** Point of contact was [REDACTED]
[REDACTED]
11. **Present at visit:** [REDACTED] (Site technical lead)
12. **Assurance schemes:** Numerous – RSPCA, BRC (British Retail Consortium), ASC (Aquaculture Stewardship Council), Tesco.
13. **Harvesting**
 - a. **Well-boat outflow pipe:**

Monitoring for:**Oxygen** – (10,58) yes**PH** – (6,8) yes (working at the time of the visit, issue found in the last visit was solved months ago)**Temperature** – (13'4 degrees sea water) yes**Records kept** – yes and checked at the time of the visit (live records on the system).

Additional Comments: Team leader at processing side has constant communication via headset to well-boat to coordinate process live. Fish must only be out of water <15s before entering percussive stunner. Whilst observing was mostly <3s out of water. Monitoring cannot be said to be continuous at the moment due to difficulties with equipment. Continuous monitoring is carried out, but they don't believe readings are true. It is manually done twice per well currently and results are compared to continuous as they try to improve the reliability of the continuous monitoring. This is required under RSPCA assurance scheme and was flagged at previous RSPCA visit. **31/08/22** This issue is still in progress to be improved but daily checks are complying with the <15s out of water.

- b. **Description of process:** Monitoring equipment is at beginning and end of pipe. Wellboat can alter the oxygen and temp of water, can't alter this once in pipe but is continuous flow. If oxygen or pH are more than 20% different between wellboat readings and pipe readings, this suggests a potential issue in the pipe and SOP states would be reported immediately to processing manager and site technical lead. Have not had any issues with this. **31/08/22 No changes.**

14. Stunning process:

- a. **Types of stunning used:** Mechanical, percussive
- b. **Set up of electrical stunning if applicable: 31/08/22** it is currently used as the numbers of engineers increased from the last inspection, they were able to solve issues with flesh quality. Although they are not experiencing issues with flesh quality following electro-stun in bigger fish, they are still having quality issue when fish are smaller and, in those cases, the electrical stunning is still not used.

Voltage -N/A

Time – N/A

Intensity – N/A

Effectiveness – N/A

- c. **Model of percussive stunner:** SI7
- d. **Set up of stunning process:** There are 4 SI7 percussive stunners each separately manned. Fish are directed in to stunner manually. Fish are mechanically percussively stunned and bled immediately by SI7 mechanical process. **31/08/22 No changes.**

Assessment of effectiveness of stunners:

- e. **Bleeding procedure:**
 - i. **Length from stunning to bleeding:** SOP states time from stun to bleed must not exceed 10s. Observing this, the time is much shorter as the stunner bleeder SI7s are automated. Welfare officer was assessing effectiveness of bleed whilst I was observing the process. Any concern is raised with supervisor immediately and would stop using that particular machine. Engineer available on site during every harvest to attend machines if necessary. **31/08/22 No changes**, SOP were checked.
- f. **Maintenance:** engineer available on site during every harvest. **31/08/22** Weekly maintenance done on Saturday as the site is running from Sunday to Friday. Records kept updated.
- g. **Backup (secondary) stunning process:** Dedicated person for secondary stun during each harvest. Another percussive stunner SI7 is used for this, it is located next to the bleed belt the fish go on to once they have been stunned/bled. Secondary stunner will scan for any signs of non-effective stun and will put through the secondary SI7 if required. If any fish fall on to floor prior to stunning, they are immediately picked up and manually percussed with a nylon 'priest' stunner and are bled using a knife to cut across below gills. The mechanical stunner is not used as this poses a cross-contamination risk if they have been on the floor. After bleeding these fish are placed in a separate chill tank to the main harvest. **31/08/22 No changes**, SOP checked.
- h. **Number of fish observed being stunned and number requiring backup stunning:** 31/08/22 Observed stunning process directly for ~25 minutes, est. approx. 200 fish observed being stunned (they just came back from break). Only one required backup stunning whilst I was observing. Effective stun rate for the harvest I observed overall was 98.5% whilst culling harvesting was still ongoing. As per SOP, any fish not effectively stunned receive a secondary stun using the SI7 located at the end of the bleed belt. This

is given by the dedicated secondary stunner, who is constantly scanning the belt for any signs of non-effective stun. On 31/08/22 digital records were checked from harvests over the last month and effective stun rate are consistently >99%.

- i. **Additional Comments (eg on handling, welfare actions):** welfare officer monitors effectiveness of stun and bleed. Also routinely monitors pH and temp of fish flesh, taking random sample of 10 fish once an hour. Also count lice per fish during this check. These are recorded in a dedicated 'Daily harvest check' sheet. Also recorded in this is first stun effectiveness for each stunner and the % of fish arriving at the stunner that are 'lively, lethargic or dead'. 'Daily harvest check sheets' were inspected from random dates and confirmed comprehensive records are being kept for each harvest. These showed very little to no fluctuation in temperature (5.3C-5.6C) or pH (7.3-7.45) and that 100% of fish at intake check were 'lively', with effective stun rates >99%. The welfare officer will also monitor the chill tank at least hourly to monitor for any signs of movement. If any movement is detected there is a net to remove the fish and they will be put through secondary stunner. Movement in chill tank is also recorded in the daily harvest check sheets. The outside bycatch bin is also monitored at least hourly. 31/08/22 no changes.

Updated 31/08/22: Although site is still having the rubber mat at entrance of the chute to slow down the flow into reception area in case, they have issues and it is required, it was not in place at the time of the visit. ██████ explained to me that they found the right flow after several trials, due to the new involvement of engineers on site. They also improved the communication system between the well-boat and the reception so as soon as they notice any change in the reception and action to correct the right flow is taken. No issues were found during the visit, flow was constant in balance with the number of stunners operating.

- j. **Procedure for other fish species in the line (eg cleaner fish etc):** These are described as bycatch in the company SOPs. They fall through the slatted reception chute that the fish fall on to after they exit the pipe. From here they drop down in to a pipe where they are electro-stunned before falling in to a bin containing tricaine for euthanasia. A flashing light next to the input chute indicates to the team that the bycatch stunner is operating. There were no cleaner fish in the harvest I observed but the various parts were pointed out and a copy of the SOP for bycatch stunning was given to me. There is a larger chute for any bycatch fish that wouldn't fall through slats in the reception chute, which larger fish would have to be manually placed in. 31/08/22 No changes

15. **Staffing levels:** ██████ staff on processing floor during my visit: Site lead advised the minimum they would operate with would be ██████ (█████ stunners operating, ██████ welfare officer and ██████ secondary stunner). 31/08/22 No changes
16. **Staff training and records:** All staff involved in harvesting process must have done the UHI fish welfare course and this must be redone every 3 years. 31/08/22 No changes, training records were check and found updated.
17. **Equipment maintenance:** 31/08/22 On site engineer for every harvest and full maintained programme follow and done on Saturdays when it is not working. Engineer team is bigger due to the plant in ██████ was temporally close and their engineers are now working at ██████.
18. **Are Standard operating procedures available for review:**

Outcome: Yes – copies were checked of SOP for:

- Fish showing signs of life post stun
- Harvesting site operations
- Bycatch stun

19. CCTV available:

Assessment: Yes - kept for 90 days. Camera is focused on stunners and a second camera on secondary stunner at end of bleed belt. **31/08/22 No changes**, some random checks were done for the last 3 weeks

20. Any indicator of on farm issues: none observed

21. Any issues found: **31/08/22** No issues found at the time of the visit.

22. Actions required: None

23. Recommendations: **31/08/22** Only keep improving the monitoring for fish out of water <15s before entering percussive stunner.