MF77 Meads Creek
MF209 Stringers Cove

Therapeutant Residue Monitoring Program

FINAL REPORT

March 2026

Report to:
Tassal Operations Pty Ltd

Prepared by:
AQUENAL PTY LTD

AQUENAL

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Operational Summary

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Field work: Sediment, water, microbiology: Aquenal
Water and wild fish: Marine Solutions
Video survey: Tassal Operations and Fulcrum Robotics

Dates of fieldwork:

Surveys	Sampling Date(s)
Pre-treatment	5-7 Nov 2025, 13 Nov 2025
Mid-treatment	11 Nov 2025
Post-treatment	17-19 Nov 2025
	24-25 Nov 2025
	1-2 Dec 2025
	7-8 Dec 2025
	23-24 Dec 2025

Laboratory Analysis:
Analytical Services Tasmania
New Town Laboratory
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Environmental Monitoring Permit Details (NRE):
Aquenal Permit Number 25112 (valid until 16/10/2026)
Marine Solutions Number 25114 (valid until 28/10/2026)

1 Introduction

A Therapeutant Residue Monitoring Program was undertaken in the vicinity of MF77 Meads Creek (Environmental Licence 9898/4) and MF209 Stringers Cove (Environmental Licence 9911/4) marine farming leases, located in the D'Entrecasteaux Channel and Huon River Marine Farming Development Plan area. The Therapeutant Residue Monitoring Program was conducted in accordance with the specifications stipulated by the Tasmanian Environment Protection Authority (EPA) in the *Therapeutant Residue Monitoring Schedule – Marine Farming Lease No's 77 (Meads Creek) and 209 (Stringers Cove) – November 2025*. This monitoring schedule was developed to assess potential environmental impacts from the medication event and was based on the information provided in the Veterinary Authority (VA), the environment in which the lease is located, previous treatment history, and research into the active ingredient and its potential environmental fate.

The Therapeutant Residue Monitoring Program included the following components: sediment sampling, microbial sampling, infauna sampling, water sampling, wild fish sampling, and benthic video surveys. The treatment was carried out using the antibiotic Florfenicol over ten days from 7-16 November 2025 (see Appendix 1 for treatment details) and a suite of these monitoring components were sampled at an array of monitoring sites prior to treatment (i.e. baseline), mid-treatment, Day 1 post-treatment, Day 7 post-treatment, Day 14 post-treatment, Day 21 post-treatment, and Day 38 post-treatment. Samples were taken at monitoring sites inside the lease (internal sites) and outside the lease (compliance sites, transect sites, control sites, reference sites).

This report provides surveys details, treatment details and the methods and results for Therapeutant Residue Monitoring Program for MF77 Meads Creek and MF209 Stringers Cove. The report includes a summary of all monitoring results and relevant contextual information.

2 Survey Sites, Design Overview and Laboratory Analysis

The Therapeutant Residue Monitoring Schedule specified a range of sampling activities in the vicinity of the Meads Creek and Stringers Cove leases in the Port Esperance region (Figure 1, Figure 2, Table 2, Table 3, Table 4). The Roberts Point lease in the D'Entrecasteaux Channel was included as a control location (Figure 1). The sampling program incorporated six components (i.e. sediment, microbial communities, infauna, water quality, wild fish and benthic video) that were sampled across seven survey events (i.e. a pre-treatment baseline survey, a mid-treatment survey on Day 5 of the treatment period and post treatment surveys on Day 1, Day 7, Day 14, Day 21 and Day 38; Table 2, Table 3, Table 4, Table 5). The sampling sites, frequency of collection, methodology and results for the six survey components are documented iteratively in Sections 3-8. It should be noted that there were some differences between the sites surveyed in the pre-treatment, mid-treatment and post-treatment surveys. For some components (e.g. sediment, infauna), the survey design was also rationalised over the course of the program based on monitoring results from earlier surveys, following approval by EPA. In these circumstances the changes are described in the relevant report section.

Analysis of Florfenicol and Florfenicol amine in environmental samples was carried out by Analytical Services Tasmania (AST). Florfenicol is the antibiotic used to treat *Piscirickettsia salmonis*. Florfenicol amine is the primary, non-antibiotic metabolite and the principal breakdown product of florfenicol in the surrounding environment. When measuring Florfenicol in fish, the fish samples are reported as the "sum of Florfenicol and its metabolites measured as Florfenicol amine", which is due to the method required to extract Florfenicol from the fish tissues. The Limit of Reporting (LoR) that is referred to throughout this report is the lowest concentration of a substance that the laboratory can reliably and consistently measured (Table 1). Further information regarding the analytical methods for measuring Florfenicol can be found on the AST website[1].

Table 1: AST Limits of Reporting

Analyte	Sample Type		
	Water (µg/L*)	Sediment (mg/Kg#)	Fish Tissue (mg/Kg#)
Florfenicol	0.1	0.005	-
Florfenicol amine	0.1	0.01	-
Sum of Florfenicol and its metabolites measured as Florfenicol amine	-	-	0.01

* 1 µg/L is equal to 1 part per billion (ppb).
# 1 mg/kg is equal to 1 part per million (ppm).

[1] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://analyticalservices.tas.gov.au/Documents/Florfenicol%20testing%20at%20AST.pdf

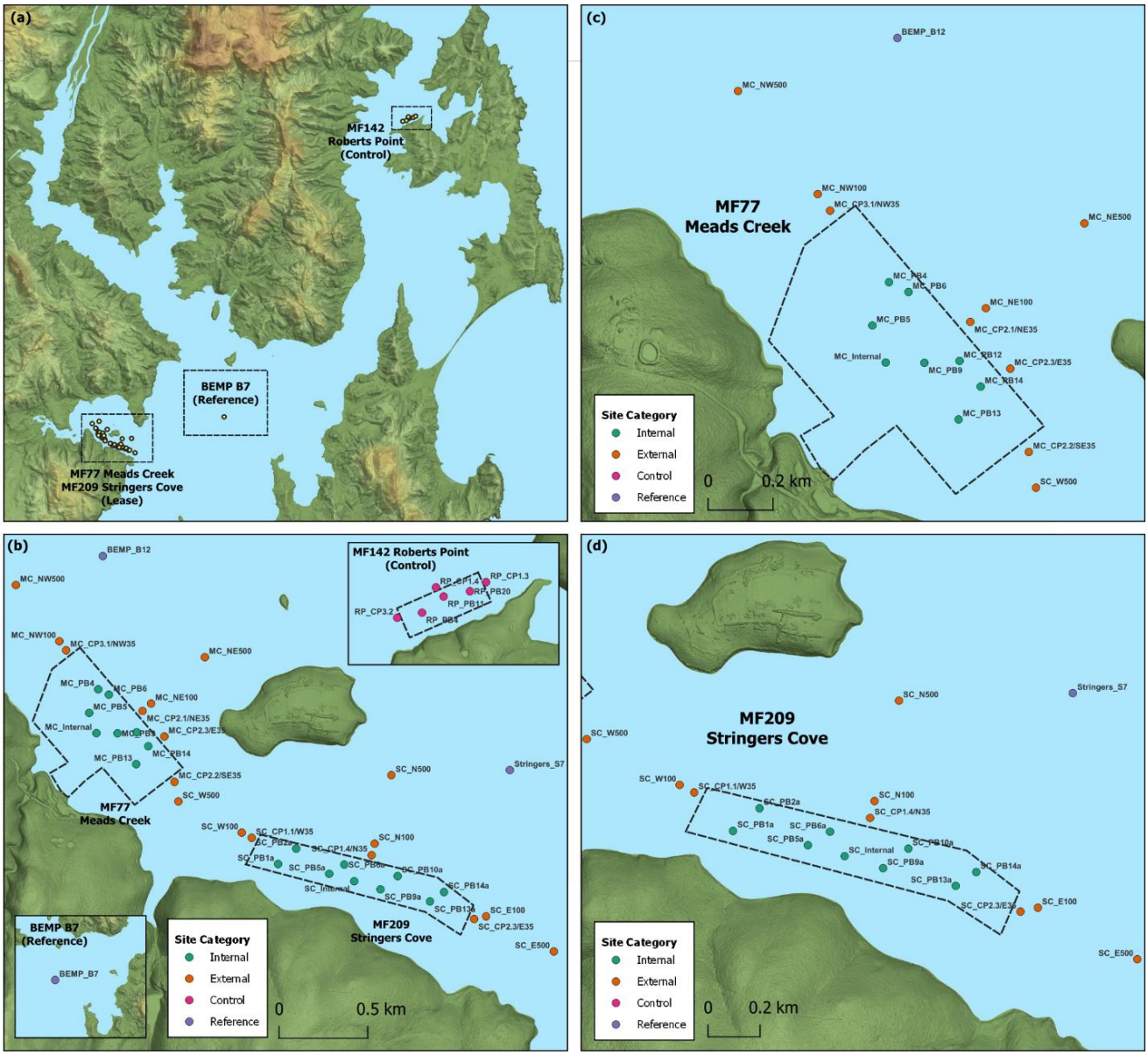

Figure 1: (a) Overview of survey area in the D'Entrecasteaux Channel/Port Esperance region. (b) Location of sites in Port Esperance, Roberts Point (inset) and the D'Entrecasteaux Channel (inset), including internal, external, control and reference sites, (c) sites in and around MF77 Meads Creek lease (d) sites in and around MF209 Stringers Cove lease. Survey sites relate to water quality, sediment, infauna, microbial communities and video surveys. Mapped coordinates are from the baseline survey and post-treatment Day 1 survey (see Appendix 2).

Table 2: Sampling schedule for sediment and water quality surveys associated with the MF77 Meads Creek (MC) and MF209 Stringers Cove (SC) leases in the D'Entrecasteaux Channel/Port Esperance region. Pre = Pre-treatment; Mid = Mid-treatment; Post = Post-treatment; BLS = Baseline. Blue shaded cells = no sample required in EPA schedule. Blue shaded cells with '*D*' = scheduled sampling at these sites discontinued as part of survey design rationalisation following review of Day 1 and Day 7 results, as approved by EPA.

Lease	Site	Site Category	Sediments					Water			
			Pre	Post				Pre	Mid	Post	
			BLS	Day 1	Day 7	Day 14	Day 21	BLS		Day 1	Day 7
MF77	MC_PB4	Internal	Y	Y	Y	*D*	*D*			Y	Y
	MC_PB5		Y								
	MC_PB6		Y	Y	Y	Y	Y			Y	Y
	MC_PB9		Y	Y	Y	*D*	*D*			Y	Y
	MC_PB12		Y								
	MC_PB13		Y								
	MC_PB14		Y	Y	Y	Y	Y			Y	Y
	MC_Internal							Y	Y	Y	Y
	MC_CP2.1/NE35	External	Y	Y	Y	Y	Y	Y	Y	Y	Y
	MC_CP2.2/SE35			Y	Y	Y	Y				
	MC_CP2.3/E35		Y				Y	Y	Y	Y	Y
	MC_CP3.1/NW35		Y	Y	Y	Y	Y	Y	Y	Y	Y
	MC_NW100			Y	Y	*D*	*D*				
	MC_NW500			Y	Y	*D*	*D*				
	MC_NE100			Y	Y	*D*	*D*				
	MC_NE500			Y	Y	*D*	*D*				
MF209	SC_PB1a	Internal	Y								
	SC_PB2a		Y	Y	Y	*D*	*D*			Y	Y
	SC_PB5a		Y	Y	Y	Y	Y			Y	Y
	SC_PB6a		Y								
	SC_PB9a		Y								
	SC_PB10a		Y	Y	Y	*D*	*D*			Y	Y
	SC_PB13a		Y								
	SC_PB14a		Y	Y	Y	Y	Y			Y	Y
	SC_Internal							Y	Y	Y	Y
	SC_CP1.1/W35	External	Y	Y	Y	Y	Y	Y	Y	Y	Y
	SC_CP1.4/N35		Y	Y	Y	Y	Y	Y	Y	Y	Y
	SC_CP2.3/E35		Y	Y	Y	Y	Y	Y	Y	Y	Y
	SC_W100			Y	Y	*D*	*D*				
	SC_W500			Y	Y	*D*	*D*				
	SC_N100			Y	Y	*D*	*D*				
	SC_N500			Y	Y	*D*	*D*				
	SC_E100			Y	Y	*D*	*D*				
	SC_E500			Y	Y	*D*	*D*				
BEMP	BEMP_B12	Reference	Y	Y	Y	Y	Y	Y	Y	Y	Y
	BEMP_B7		Y	Y	Y	*D*	*D*	Y	Y	Y	Y
	Stringers_S7		Y	Y	Y	*D*	*D*	Y	Y	Y	Y
MF142	RP_PB4	Control	Y	Y	Y	*D*	*D*				
	RP_PB11		Y	Y	Y	Y	Y				
	RP_PB20		Y	Y	Y	Y	Y				
	RP_CP1.3		Y	Y	Y	Y	Y				
	RP_CP1.4		Y	Y	Y	Y	Y				
	RP_CP3.2		Y	Y	Y	Y	Y				

Table 3: Sampling schedule for infauna, microbial and benthic video surveys associated with the MF77 Meads Creek (MC) and MF209 Stringers Cove (SC) leases in the D'Entrecasteaux Channel/Port Esperance region. Pre = Pre-treatment; Mid = Mid-treatment; Post = Post-treatment; BLS = Baseline. Blue shaded cells = no sample required in EPA schedule. Blue shaded cells with '*D*' = scheduled sampling at these sites discontinued as part of survey design rationalisation following review of Day 1 and Day 7 sediment results, as approved by EPA

Lease	Site Name	Site Category	Infauna*	Microbial					Benthic Video		
			Pre	Pre	Post				Pre	Mid	Post
			BLS	BLS	Day 1	Day 7	Day 14	Day 21	BLS		Day 1
MF77	MC_PB4	Internal	Y	Y	Y	Y	*D*	*D*		Y	Y
	MC_PB5		Y	Y					Y	Y	Y
	MC_PB6		Y	Y	Y	Y	Y	Y	Y	Y	Y
	MC_PB9		Y	Y	Y	Y	*D*	*D*	Y	Y	Y
	MC_PB12		Y	Y					Y	Y	Y
	MC_PB13		Y	Y					Y	Y	Y
	MC_PB14		Y	Y	Y	Y	Y	Y	Y	Y	Y
	MC_Internal										
	MC_CP2.1/NE35	External	Y	Y	Y	Y	Y	Y			
	MC_CP2.2/SE35										
	MC_CP2.3/E35		Y	Y	Y	Y	Y	Y			
	MC_CP3.1/NW35		Y	Y	Y	Y	Y	Y			
	MC_NW100										
	MC_NW500										
	MC_NE100										
	MC_NE500										
MF209	SC_PB1a	Internal	Y	Y					Y	Y	Y
	SC_PB2a		Y	Y	Y	Y	*D*	*D*	Y	Y	Y
	SC_PB5a		Y	Y	Y	Y	Y	Y	Y	Y	Y
	SC_PB6a		Y	Y					Y	Y	Y
	SC_PB9a		Y	Y					Y	Y	Y
	SC_PB10a		Y	Y	Y	Y	*D*	*D*	Y	Y	Y
	SC_PB13a		Y	Y					Y	Y	Y
	SC_PB14a		Y	Y	Y	Y	Y	Y	Y	Y	Y
	SC_Internal										
	SC_CP1.1/W35	External	Y	Y	Y	Y	Y	Y			
	SC_CP1.4/N35		Y	Y	Y	Y	Y	Y			
	SC_CP2.3/E35		Y	Y	Y	Y	Y	Y			
	SC_W100										
	SC_W500										
	SC_N100										
	SC_N500										
	SC_E100										
	SC_E500										
BEMP	BEMP_B12	Reference	Y	Y	Y	Y	Y	Y			
	BEMP_B7		Y	Y	Y	Y	Y	Y			
	Stringers_S7		Y	Y	Y	Y	Y	Y			
MF142	RP_PB4	Control	Y	Y	Y	Y	*D*	*D*			
	RP_PB11		Y	Y	Y	Y	Y	Y			
	RP_PB20		Y	Y	Y	Y	Y	Y			
	RP_CP1.3		Y	Y	Y	Y	Y	Y			
	RP_CP1.4		Y	Y	Y	Y	Y	Y			
	RP_CP3.2		Y	Y	Y	Y	Y	Y			

*Infauna sampling for Day 21 post-treatment was specified in the EPA schedule, but was not required for sampling, as approved by EPA.

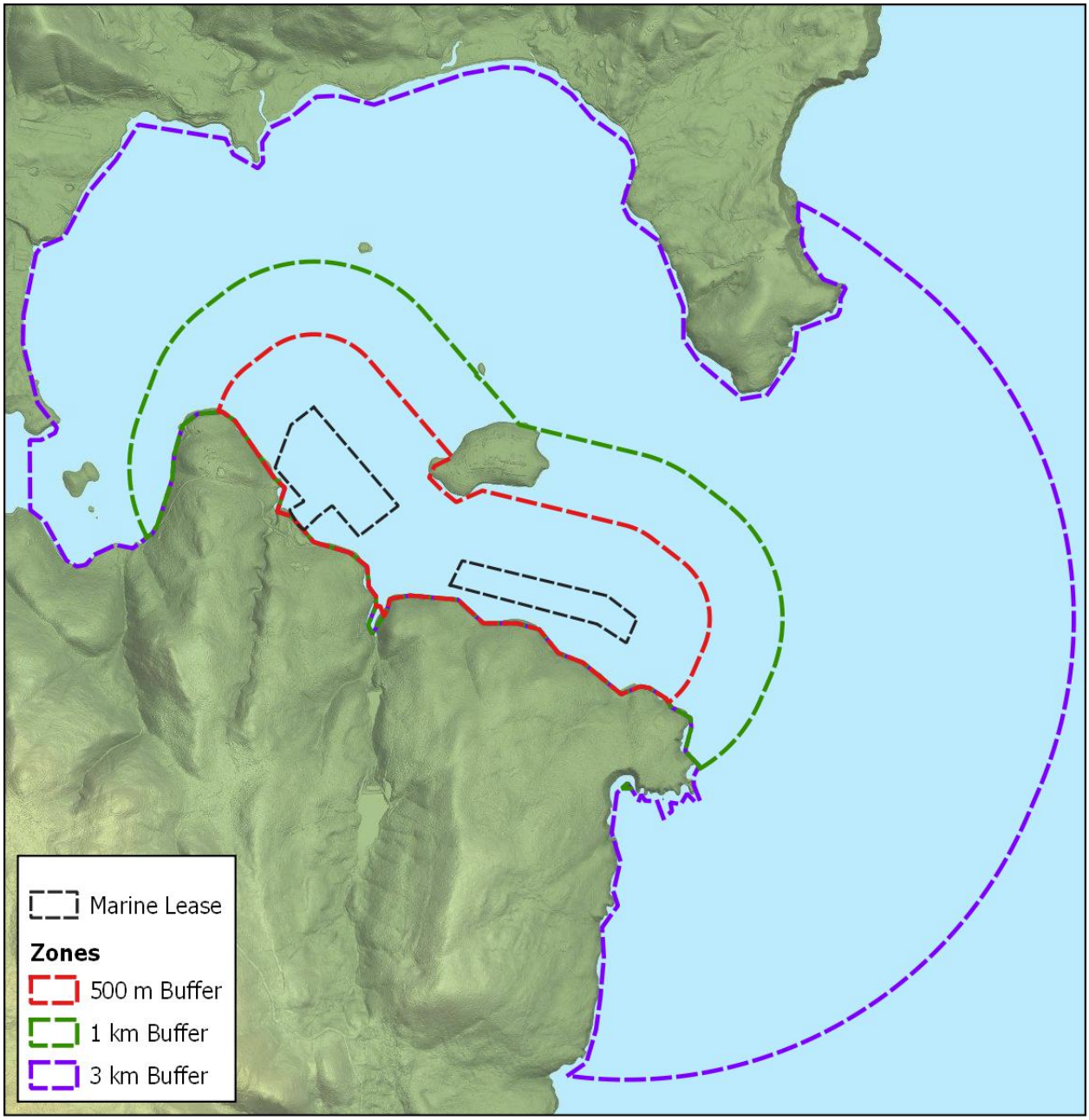

Figure 2: Survey zones for wild fish sampling including 0 - 500 m, 500 m - 1 km and 1 – 3 km. Note that the 0-500 m zone included the area inside the leases.

Table 4: Number of wild fish pooled samples within four zones associated with the MF77 Meads Creek and MF209 Stringers Cove leases in the D'Entrecasteaux Channel/Port Esperance region. For each zone and sampling event, pooled samples of three individual fish were collected.

Zone	Mid-treatment*	Post-treatment			
		Day 1	Day 7	Day 21	Day 38
0 - 500 m	4	8	8	8	8
500 m - 1 km	4	6	6	6	6
1 - 3 km - Inside Port Esperance	3	4	4	4	4
1 - 3 km - Outside Port Esperance	1	4	4	4	4

*Note that there was a misinterpretation regarding the mid-treatment sampling requirements. This was communicated to the EPA and rectified in the next sampling event.

Table 5: Overview of the Residue Monitoring Program sampling events, including planned surveys and dates fieldwork was undertaken for corresponding surveys. Weather conditions for each sampling day are provided in Appendix 3. The medication event spanned 10 days from 7th November to 16th November 2025.

Survey Category	Sampling Event	Sampling Date(s)	Days since treatment completed
Pre-treatment	**Baseline#**	5-7 Nov 2025, 13 Nov 2025	
Mid-treatment	**Mid-treatment**	11 Nov 2025	
Post-treatment	**Day 1**	17-19 Nov 2025	1-3
	Day 7	24-25 Nov 2025	8-9
	Day 14	1-2 Dec 2025	15-16
	Day 21	7-8 Dec 2025	21-22
	Day 38 (500 degree day)	23-24 Dec 2025	37-38

Baseline sampling at MF77 Meads Creek and MF209 Stringers Cove was undertaken from 5-7 November 2025, while sampling at control lease MF142 Roberts Point took place on 13 Nov 2025.

3 Sediment Sampling

3.1 Survey sites

Sediment samples were collected in accordance with the EPA Schedule at the following sites (see Figure 1 and Table 2 for sampling frequency):

- Internal (pen bay) sites: During the baseline survey samples were taken at seven pen bay sites at MF77, and eight pen bay sites at MF209. In subsequent post-treatment surveys, two to four pen bays were surveyed at each lease (see Table 2). Samples were taken at the edge of the treated pen, and the position was recorded at the time of collection.
- External sites: Samples were taken along two transects plus compliance sites CP2.2 and CP2.3 at MF77, and three transects at MF209. The transects were positioned at right angles to the marine farming lease boundary. The samples were taken at a distance of 35, 100 and 500 metres from the marine farming lease boundary.
- Reference and control sites: Samples were taken at three reference sites and six control sites (three pen bays and three external sites) at Marine Farming Lease No. 142 Roberts Point (MF142).

There were some differences in the survey design between the baseline and post-treatment surveys (see Figure 1, Table 2). For example, the baseline survey did not include 100 m and 500 m transect sites.

In accordance with the EPA schedule (and following approval from EPA), some sediment sites that returned results below the limit of reporting (LoR) for two consecutive sampling events following completion of the medication (i.e. Day 1 and Day 7 surveys) were discontinued for the following Day 14 and Day 21 surveys (see 'D' in Table 2). The rationalised survey design continued to sample representative internal, external and reference sites.

3.2 Sample collection, processing and storage

Depending on sediment type, a Craib corer or Quad corer was used to collect triplicate sediment cores at each site. Core samples (75 mm minimum length) were collected in clean Perspex cores (Figure 3). The corer was thoroughly cleaned and rinsed with seawater between each site, with samples taken from the sites furthest from the lease boundary first (i.e. reference sites, 500 m, 100 m, 35 m and then internal (pen bay) sites to minimise contamination risk.

Cores were processed onboard following collection at each site. Samples were split into surface (top 25 mm) and bottom (bottom 50 mm) sections and composited according to the EPA schedule. For the duplicate composited samples, the top 25 mm from two replicate cores were combined into one jar. Similarly, the bottom 50 mm from the same two cores were combined into a single jar. The third replicate core sample was separated into the 25 mm and 50 mm sections. Samples were held in an

Eski on board the work vessel before being transferred to frozen storage at the end of each field day. The composite samples were delivered to Analytical Services Tasmania (AST) as soon as practicable, while samples from the third replicate core were retained as archived samples in frozen storage. Surface and bottom samples were analysed for Baseline, Day 1 and Day 7 surveys, while surface samples only were analysed for Day 14 and Day 21 surveys, with remaining bottom samples retained in frozen storage for potential future analysis.

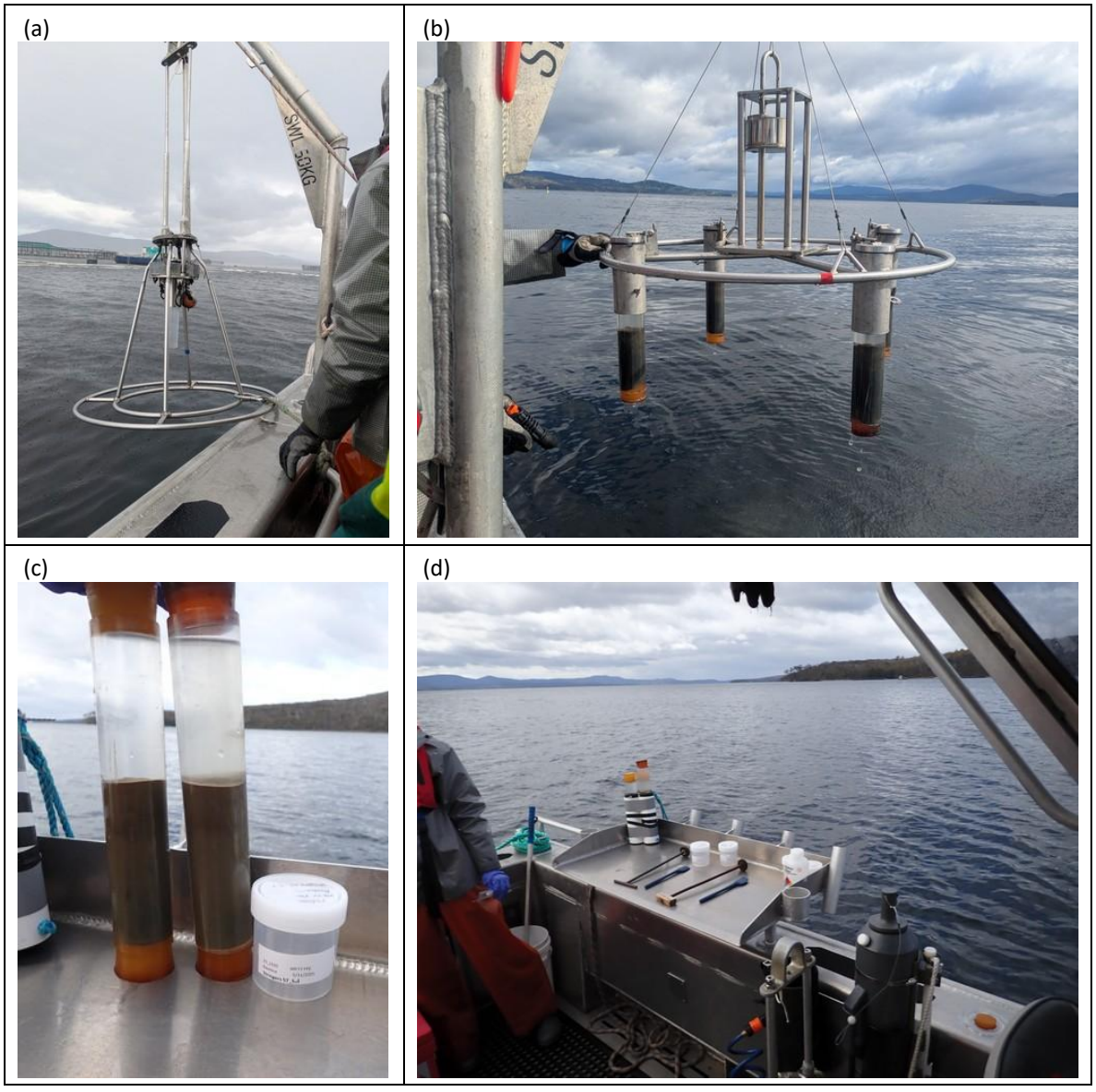

Figure 3: (a) Craib corer; (b) Quad corer in the field with sediment samples collected in Perspex cores; (c) Perspex cores prior to processing; and (d) processing equipment onboard work vessel.

3.3 Results

In the baseline survey and all post-treatment surveys, concentrations of Florfenicol and Florfenicol amine in sediments at all sites and core depths (i.e. surface and bottom) were below the limit of reporting (LoR; i.e. Florfenicol < 0.005 mg/kg, Florfenicol amine < 0.01 mg/kg; Table 6, Table 7).

Table 6: Florfenicol concentration (mg/kg DMB) in sediment samples collected at the surface and at depth (bottom) at internal, external, reference and control sites pre-treatment (baseline) and post-treatment (Day 1, Day 7, Day 14, Day 21). Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.005). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Blue shaded cells indicate sites where sampling and analysis was not required (refer to Table 2 for details). Note that there was no requirement to analyse bottom samples for the Day 14 and Day 21 surveys.

Lease	Site	Location	Florfenicol in sediments (mg/kg DMB)							
			Baseline		Day 1		Day 7		Day 14	Day 21
			Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Surface
MF77	MC_PB4	Internal	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	MC_PB5		<0.005	<0.005						
	MC_PB6		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	MC_PB9		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	MC_PB12		<0.005	<0.005						
	MC_PB13		<0.005	<0.005						
	MC_PB14		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	MC_CP2.1/NE35	External	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	MC_CP2.2/SE35				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	MC_CP2.3/E35		<0.005	<0.005						<0.005
	MC_CP3.1/NW35		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	MC_NE100				<0.005	<0.005	<0.005	<0.005		
	MC_NE500				<0.005	<0.005	<0.005	<0.005		
	MC_NW100				<0.005	<0.005	<0.005	<0.005		
	MC_NW500				<0.005	<0.005	<0.005	<0.005		
MF209	SC_PB1a	Internal	<0.005	<0.005						
	SC_PB2a		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	SC_PB5a		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	SC_PB6a		<0.005	<0.005						
	SC_PB9a		<0.005	<0.005						
	SC_PB10a		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	SC_PB13a		<0.005	<0.005						
	SC_PB14a		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	SC_CP1.1/W35	External	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	SC_CP1.4/N35		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	SC_CP2.3/E35		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	SC_E100				<0.005	<0.005	<0.005	<0.005		
	SC_E500				<0.005	<0.005	<0.005	<0.005		
	SC_N100				<0.005	<0.005	<0.005	<0.005		
	SC_N500				<0.005	<0.005	<0.005	<0.005		
	SC_W100				<0.005	<0.005	<0.005	<0.005		
	SC_W500				<0.005	<0.005	<0.005	<0.005		
BEMP	BEMP_B12	Reference	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	BEMP_B7		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	Stringers_S7		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
MF142	RP_PB4	Control	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	RP_PB11		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	RP_PB20		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	RP_CP1.3		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	RP_CP1.4		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	RP_CP3.2		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table 7: Florfenicol amine concentration (mg/kg DMB) in sediment samples collected at the surface and at depth (bottom) at internal, external, reference and control sites pre-treatment (baseline) and post-treatment (Day 1, Day 7, Day 14, Day 21). Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.01). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Blue shaded cells indicate sites where sampling and analysis was not required (refer to Table 2 for details). Note that there was no requirement to analyse bottom samples for the Day 14 and Day 21 surveys.

Lease	Site	Location	Florfenicol amine in sediments (mg/kg DMB)							
			Baseline		Day 1		Day 7		Day 14	Day 21
			Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Surface
MF77	MC_PB4	Internal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	MC_PB5		<0.01	<0.01						
	MC_PB6		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MC_PB9		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	MC_PB12		<0.01	<0.01						
	MC_PB13		<0.01	<0.01						
	MC_PB14		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MC_CP2.1/NE35	External	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MC_CP2.2/SE35				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MC_CP2.3/E35		<0.01	<0.01						<0.01
	MC_CP3.1/NW35		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MC_NE100				<0.01	<0.01	<0.01	<0.01		
	MC_NE500				<0.01	<0.01	<0.01	<0.01		
	MC_NW100				<0.01	<0.01	<0.01	<0.01		
	MC_NW500				<0.01	<0.01	<0.01	<0.01		
MF209	SC_PB1a	Internal	<0.01	<0.01						
	SC_PB2a		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	SC_PB5a		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SC_PB6a		<0.01	<0.01						
	SC_PB9a		<0.01	<0.01						
	SC_PB10a		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	SC_PB13a		<0.01	<0.01						
	SC_PB14a		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SC_CP1.1/W35	External	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SC_CP1.4/N35		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SC_CP2.3/E35		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	SC_E100				<0.01	<0.01	<0.01	<0.01		
	SC_E500				<0.01	<0.01	<0.01	<0.01		
	SC_N100				<0.01	<0.01	<0.01	<0.01		
	SC_N500				<0.01	<0.01	<0.01	<0.01		
	SC_W100				<0.01	<0.01	<0.01	<0.01		
	SC_W500				<0.01	<0.01	<0.01	<0.01		
BEMP	BEMP_B12	Reference	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	BEMP_B7		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	Stringers_S7		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
MF142	RP_PB4	Control	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
	RP_PB11		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	RP_PB20		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	RP_CP1.3		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	RP_CP1.4		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	RP_CP3.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

4 Microbial Sampling

4.1 Survey sites

Microbial samples were collected from the following sites (see Figure 1 and Table 3 for sampling frequency):

- Seven internal (pen bay) and three external (35 m) sites at MF77;
- Eight internal (pen bay) and three external (35 m) sites at MF209;
- Three reference sites; and
- Six control sites at MF142.

There were some differences in the survey design between the baseline and post-treatment surveys (see Table 2). For example, the post-treatment surveys included two-four pen bay sites at each lease.

4.2 Sample collection, processing and storage

Wearing latex gloves and using a sterile disposable scraper, a small sample of surface sediments (up to approximately 1 cm deep) from the top of two of the triplicate cores was collected and the contents composited into a sterile 5 mL cryovial. Because of the small amount needed, this was taken from the same cores as the sediment samples (see Section 3) and was done as soon as practically possible after the cores were brought on board (i.e. within 30 mins). Sample vials were placed directly into a liquid nitrogen dewar. At a subset of sites (pen bay and reference sites only), microbial samples were collected from the “deep” (i.e. bottom section of core; see Section 3) ~5-6 cm strata from the same cores in the same manner as described above.

4.3 Results

Microbial samples were transferred to IMAS as soon as practicable for potential future analysis where they are stored at -80 °C until extraction.

5 Infauna Sampling

5.1 Survey sites

Infauna samples were collected during the baseline survey from the following sites (see Figure 1 and Table 3 for sampling frequency):

- Seven internal (pen bay) and three external (35 m) sites at MF77;
- Eight internal (pen bay) and three external (35 m) sites at MF209;
- Three reference sites; and
- Six control sites at MF142 (Roberts Point).

Infauna sampling for Day 21 post-treatment was specified in the EPA schedule, however, due to the lack of Florfenicol and Florfenicol amine detected in sediment samples, the EPA approved the omission of the Day 21 infauna sampling requirement.

5.2 Sample collection, processing and storage

Infauna samples were collected, processed and preserved in accordance with the methodology outlined under condition 3F4 of the relevant Environmental Licences. Infauna were collected using a Van Veen grab which sampled a 0.07 m^2 area of seabed. Triplicate grabs were collected at each monitoring site. Grab samples were sieved in the field using 1 mm mesh sieve bags, with animal and sediment material retained in the mesh bags placed in 5-10% buffered formalin.

5.3 Results

As per the schedule, following fixation in formalin, infauna samples were transferred to ethanol and retained at the Aquenal laboratory for potential future analysis. Samples will be retained for four years or until such time as the Director requests that they be analysed.

6 Water Sampling

6.1 Survey sites

Water samples were collected from the following sites (see Figure 1 and Table 2 for sampling frequency):

- Five internal sites (treated pen bays and one central (internal) lease site) and three external (35 m) sites at MF77;
- Five internal sites (treated pen bays and one central (internal) lease site) and three external (35 m) sites at MF209; and
- Three reference sites.

6.2 Sample collection, processing and storage

Water samples were collected at the surface (0.1 m) for each site. Samples were collected in labelled 250 mL amber glass bottles provided AST, kept cool in a dark environment and frozen as soon as possible after collection (unless they were delivered to that facility within 12 hours of collection). Water samples were taken from the sites furthest from the lease boundary first (i.e. reference sites 35 m and then internal sites to minimise contamination risk.

6.3 Results

For all baseline water samples, Florfenicol and Florfenicol amine concentrations were below the limit of reporting (LoR; i.e. Florfenicol < 0.1 µg/L, Florfenicol amine < 0.1 µg/L; Table 8, Table 9, Figure 4).

Of the 49 water samples across mid-treatment and post-treatment surveys, a total of 27 samples detected either Florfenicol or Florfenicol amine above the LoR (Table 8, Table 9, Figure 4). This consisted of 9 of the 11 sites during mid-treatment sampling and 18 of the 19 sites during the Day 1 post-treatment survey (Table 8, Table 9, Figure 4). No samples had Florfenicol or Florfenicol amine concentrations above the LoR in the Day 7 post-treatment survey (Table 8, Table 9, Figure 4).

All Florfenicol and Florfenicol amine concentrations were below 2 µg/L; Table 8, Table 9, Figure 4). The highest concentrations of Florfenicol (0.5 µg/L) and Florfenicol amine (1.9 µg/L) observed across the survey were recorded at sites SC_CP1.4 and MS_CP2.3 during the Day 1 post-treatment survey (Table 8, Table 9, Figure 4). These external sites were located 35 m from the lease boundary. Florfenicol and Florfenicol amine concentrations at these two sites subsequently dropped below the LoR by the Day 7 post-treatment survey (Table 8, Table 9, Figure 4).

Florfenicol (0.2 µg/L) and Florfenicol amine (0.3 µg/L) concentrations above the LoR were recorded for reference site 'Stringers_7' during the Day 1 post-treatment survey (Table 8, Table 9, Figure 4). Florfenicol amine was also detected at a concentration slightly above the LoR at reference site 'BEMP_12' during the Day 1 survey (0.2 µg/L). There were no results above the LoR at reference site 'BEMP_7' for Florfenicol or Florfenicol amine in any survey (Figure 4). For the Day 7 post treatment surveys, there were no results above the LoR for Florfenicol or Florfenicol amine at the reference sites (Table 8, Table 9, Figure 4).

Table 8: Florfenicol concentration (µg/L) in surface water samples collected at internal, external and reference sites. The limit of reporting for Florfenicol from AST laboratories is 0.1 µg/L. Pre = pre-treatment; Mid = mid-treatment; Post = post-treatment. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.1). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Blue shaded cells indicate sites where sampling and analysis was not required (refer to Table 2 for details).

Lease	Site	Location	Position	Florfenicol (µg/L)			
				Pre	Mid	Post	
				Baseline		Day 1	Day 7
MF77	MC_PB4	Internal	Pen Bay			<0.1	<0.1
	MC_PB6					<0.1	<0.1
	MC_PB9					<0.1	<0.1
	MC_PB14					<0.1	<0.1
	MC_Internal		Internal	<0.1	0.1	0.2	<0.1
	MC_CP2.1/NE35	External	35 m	<0.1	0.2	0.2	<0.1
	MC_CP2.3/E35			<0.1	0.1	0.5	<0.1
	MC_CP3.1/NW35			<0.1	<0.1	0.1	<0.1
MF209	SC_PB2a	Internal	Pen Bay			<0.1	<0.1
	SC_PB5a					<0.1	<0.1
	SC_PB10a					<0.1	<0.1
	SC_PB14a					<0.1	<0.1
	SC_Internal		Internal	<0.1	0.2	0.3	<0.1
	SC_CP1.1/W35	External	35 m	<0.1	0.1	0.3	<0.1
	SC_CP1.4/N35			<0.1	0.2	0.5	<0.1
	SC_CP2.3/E35			<0.1	0.3	0.2	<0.1
Reference	BEMP_B12	Reference	Reference	<0.1	<0.1	<0.1	<0.1
	BEMP_B7			<0.1	<0.1	<0.1	<0.1
	Stringers_S7			<0.1	<0.1	0.2	<0.1

Table 9: Florfenicol amine concentration (µg/L) in surface water samples collected at internal, external and reference sites. The limit of reporting for Florfenicol amine from AST laboratories is 0.1 µg/L. Pre = Pre-treatment; Mid = Mid-treatment; Post = Post-treatment. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.1). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure. Blue shaded cells indicate sites where sampling and analysis was not required (refer to Table 2 for details).

Lease	Site	Location	Position	Florfenicol amine (µg/L)			
				Pre	Mid	Post	
				Baseline		Day 1	Day 7
MF77	MC_PB4	Internal	Pen Bay			0.2	<0.1
	MC_PB6					0.2	<0.1
	MC_PB9					0.2	<0.1
	MC_PB14					0.2	<0.1
	MC_Internal		Internal	<0.1	0.2	0.6	<0.1
	MC_CP2.1/NE35	External	35 m	<0.1	0.2	0.7	<0.1
	MC_CP2.3/E35			<0.1	0.2	1.9	<0.1
	MC_CP3.1/NW35			<0.1	0.1	0.3	<0.1
MF209	SC_PB2a	Internal	Pen Bay			0.2	<0.1
	SC_PB5a					0.3	<0.1
	SC_PB10a					0.3	<0.1
	SC_PB14a					0.2	<0.1
	SC_Internal		Internal	<0.1	0.3	0.8	<0.1
	SC_CP1.1/W35	External	35 m	<0.1	0.2	0.7	<0.1
	SC_CP1.4/N35			<0.1	0.3	1.9	<0.1
	SC_CP2.3/E35			<0.1	0.4	0.7	<0.1
Reference	BEMP_B12	Reference	Reference	<0.1	0.1	0.2	<0.1
	BEMP_B7			<0.1	<0.1	<0.1	<0.1
	Stringers_S7			<0.1	<0.1	0.3	<0.1

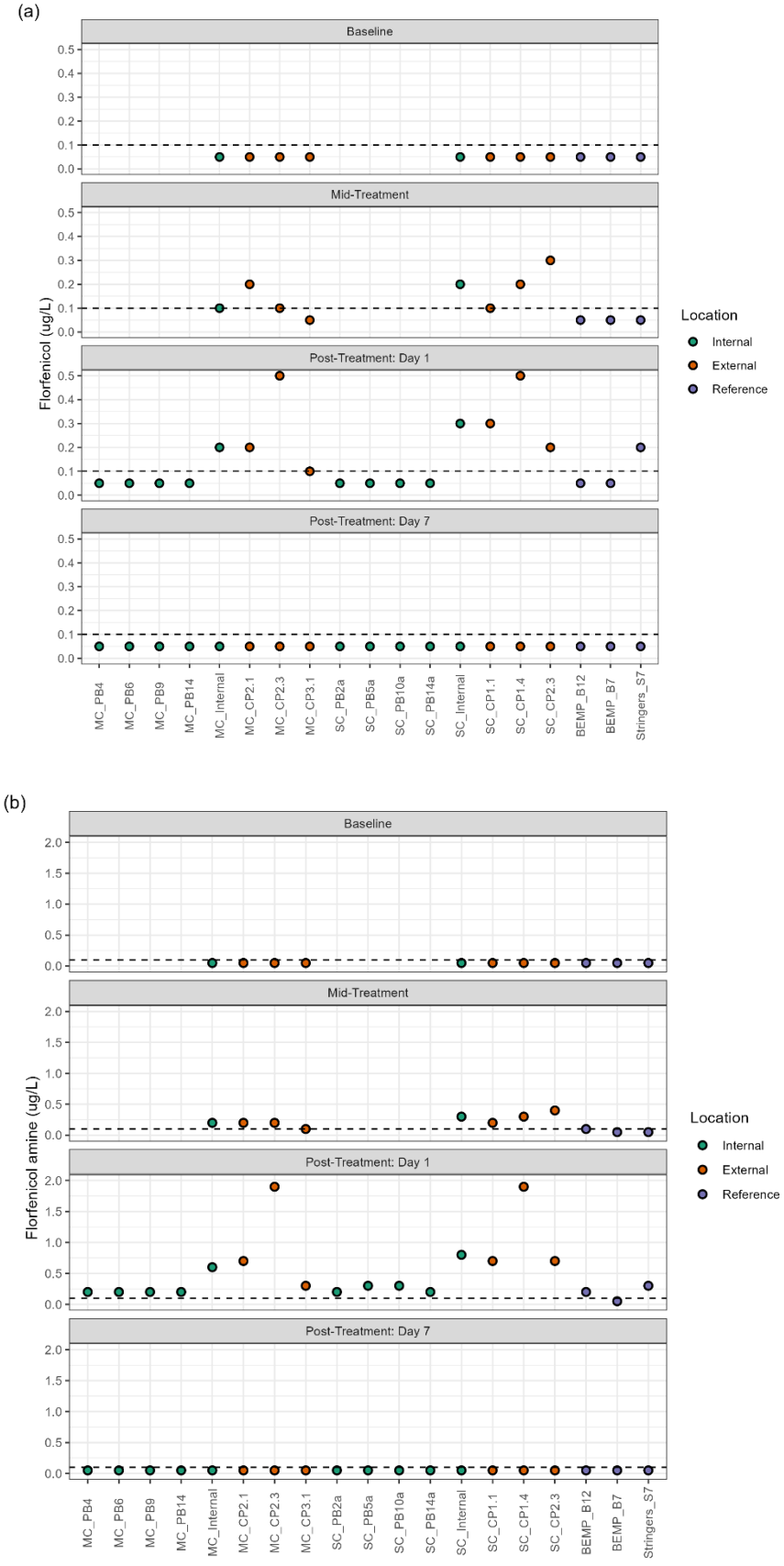

Figure 4: (a) Florfenicol (µg/L) and (b) Florfenicol amine concentration (µg/L) in surface water samples at internal, external and reference sites during surveys conducted pre-treatment (Baseline), mid-treatment and post-treatment (Day 1, Day 7). The dashed line indicates the limit of reporting (LoR) for each analyte (i.e. 0.1 µg/L). To enable graphical representation, values <LoR were halved (i.e. < 0.1 = 0.05).

7 Wild Fish Sampling

7.1 Survey sites

Wild fish were collected by line fishing, after which pooled samples were processed and submitted to AST laboratories to determine the concentration of Florfenicol and metabolites as Florfenicol Amine. As per the EPA schedule, wild fish were collected from three designated zones based on distance to the Meads Creek and Stringers Cove leases. The three zones included 0-500 m, 500 m - 1 km and 1-3 km distances. For the 1-3 km zone, the sampling schedule required samples from both inside and outside the bounds of Port Esperance (designated “inside” and “outside”). Wild fish were caught mid-treatment and post-treatment on Day 1, Day 7, Day 21 and Day 38 (500 degree days at bottom water temperatures ranging from 13.0°C in November and 13.8°C in December equating to 38 days). The location of fish captured during each survey event are illustrated in Figure 5 and listed in Table 10 and Appendix 4.

7.2 Sample collection, processing and storage

Wild fish samples were collected first from the 1-3 km zone and then progressively in the zones closer to the leases. Ideally, the fish collected within each zone were to consist of 50% pelagic and 50% benthic species, but due to practical constraints there were instances where only one category of fish could be captured in a zone. During each survey, fish were collected from various locations throughout the zones (Figure 5, Table 10; Appendix 4).

All sampling gear and sample preparation equipment used in the field was thoroughly cleaned and measures to minimise contamination risk were implemented.

Information on fish length, weight, and gut contents was recorded for each fish sampled (Figure 6). Length was recorded using the longest measurable point, and weight was taken using fish scales. A designated knife was used to remove the tail posterior to the anus, which was retained for laboratory flesh analysis. A separate knife was used to dissect the fish to examine gut contents, and all observations were recorded. Between each dissection, tables and knives were thoroughly cleaned, and gloves worn throughout the process. Flesh samples were bagged and labelled, and frozen for laboratory analysis.

Note that results for fish flesh analysis were reported by AST as combined ‘Florfenicol & metabolites as Florfenicol Amine’. This differed from the water and sediment samples which reported Florfenicol and Florfenicol Amine components separately[2].

[2] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://analyticalservices.tas.gov.au/Documents/Florfenicol%20testing%20at%20AST.pdf

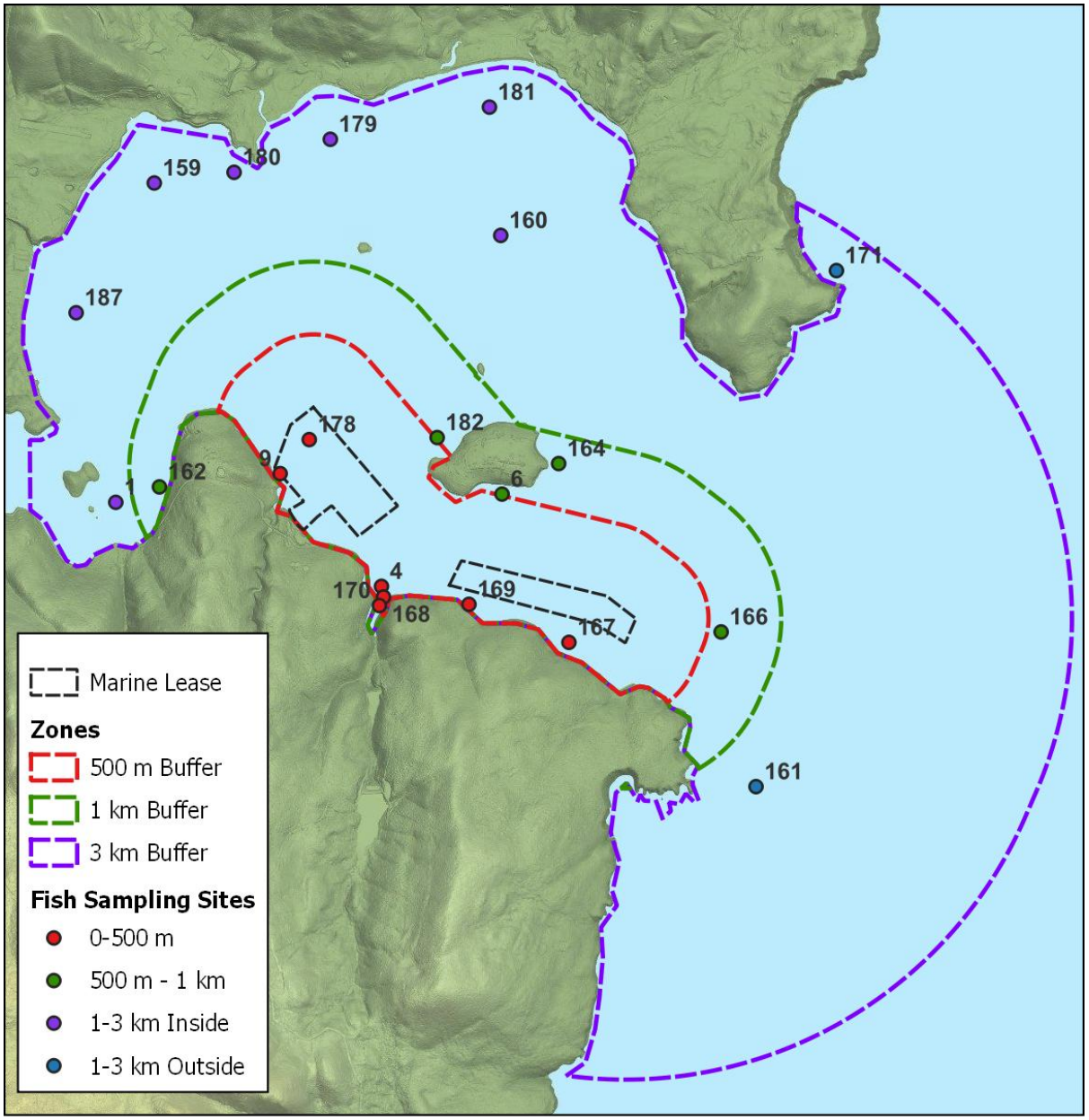

Figure 5: Location of wild fish collection sites across all sampling events. Refer to Table 10 for a list of the sites that were used for wild fish collection during each respective survey event. Note that the 0-500 m zone included the area inside the leases.

Table 10: Site sampling locations for pooled fish samples. Site numbers in the table refer to locations shown in Figure 5.

Zone	Pooled sample #	Site from which pooled sample was taken				
		Mid Treatment*	Post Treatment			
			Day 1	Day 7	Day 21	Day 38
0-500 m	1	167	168	178	169	178
	2	169	168	178	167	178
	3	168	168	178	167+169	178
	4	168	9	178	167	178
	5	NA	4	178	167	178
	6	NA	170	178	168	178
	7	NA	9	178	167	178
	8	NA	170	178	167+169	178
500 m - 1 km	1	162	162	162	182	164
	2	164	162	182	162	164
	3	166	162	182	164	164
	4	164	162	182	164+182	164
	5	NA	6	182	162	164
	6	NA	6	182	164	164
1-3 km 'Inside' Port Esperance	1	1	159	179	187	187
	2	159	159	180	179	187
	3	160	179	181	159	180
	4	NA	179	181	181	180
1-3 km 'Outside' Port Esperance	1	161	161	171	171	161
	2	NA	161	171	171	161
	3	NA	161	161	161	171
	4	NA	171	161	161	171

* Note that there was a misinterpretation regarding the mid-treatment sampling requirements. This was communicated to the EPA and rectified in the following sampling event.

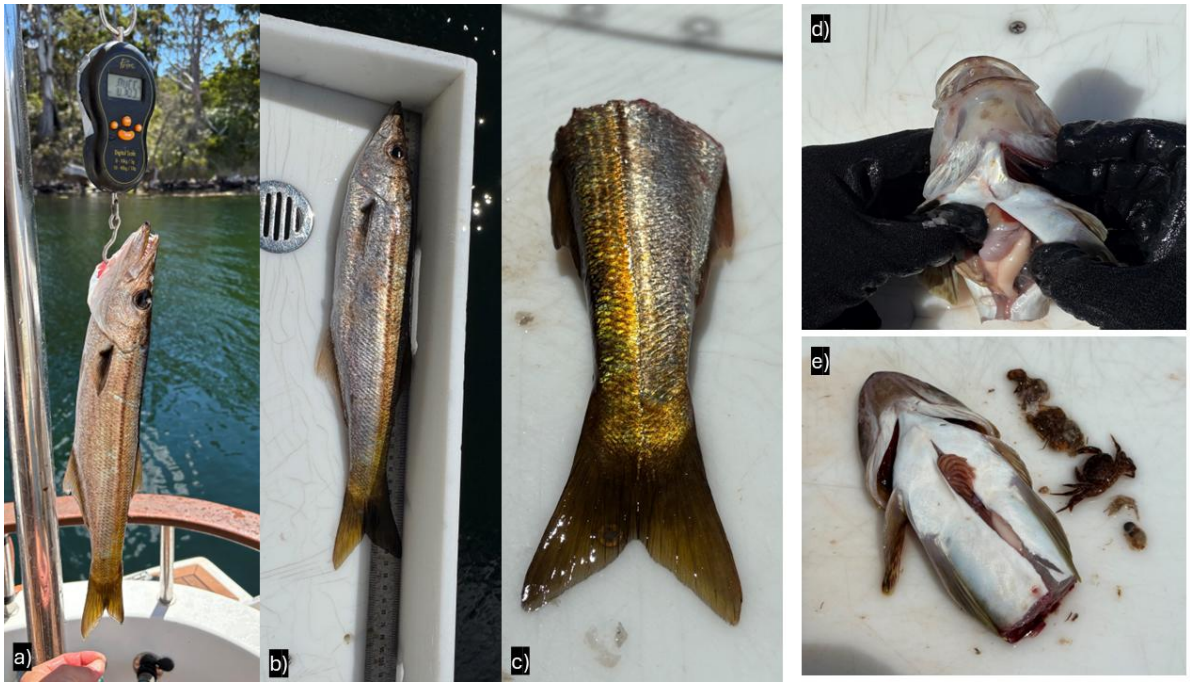

Figure 6: Photos taken during the processing of fish, showing (a) weight,(b) measurement, (c) tail sample for laboratory analysis, (d) gut processing and (e) gut content analysis.

7.3 Results

Of the one-hundred pooled fish samples analysed across the wild fish monitoring program, two samples recorded combined Florfenicol and Florfenicol amine concentrations above the limit of reporting (LoR; i.e. > 0.01 mg/kg WMB). These two samples were from fish collected during the Day 1 post-treatment surveys (Table 11). All other samples across the remaining four monitoring surveys recorded Florfenicol and Florfenicol amine concentrations below the LoR (Table 11).

The two wild fish samples that recorded Florfenicol and Florfenicol amine concentrations greater than the LoR were from pooled samples of Australian Salmon (*Arripis trutta*; Appendix 4). One of eight pooled samples from the '0-500 m' zone in the Day 1 survey recorded a concentration of 0.02 mg/kg WMB (Pooled Sample 3; Table 11). This sample was collected from the area between the two leases (Table 10; see Site 168 in Figure 5). One of six pooled samples from the '500 m – 1 km' zone in the Day 1 survey recorded a concentration of 0.66 mg/kg WMB (Pooled Sample 5; Table 11). This sample was collected just outside the 500 m boundary on the southern side of Hope Island (Table 10; see Site 6 in Figure 5).

A summary of the fish samples including details of species, weight, length and gut contents, taken at each site during each survey is included in Appendix 4.

Table 11: Florfenicol & metabolites as Florfenicol Amine (mg/kg WMB) in wild fish tissue for wild fish caught from three zones in the Port Esperance area during four survey events. Green shaded cells indicate sites where the sample was below the limit of reporting (LoR, i.e. <0.01). The LoR is the lowest concentration of a substance that the laboratory can reliably and consistently measure.

Zone	Pooled sample #	Florfenicol & metabolites as Florfenicol Amine (mg/kg WMB)				
		Mid Treatment*	Post Treatment			
			Day 1	Day 7	Day 21	Day 38
0-500 m	1	<0.01	<0.01	<0.01	<0.01	<0.01
	2	<0.01	<0.01	<0.01	<0.01	<0.01
	3	<0.01	0.02	<0.01	<0.01	<0.01
	4	<0.01	<0.01	<0.01	<0.01	<0.01
	5	NA	<0.01	<0.01	<0.01	<0.01
	6	NA	<0.01	<0.01	<0.01	<0.01
	7	NA	<0.01	<0.01	<0.01	<0.01
	8	NA	<0.01	<0.01	<0.01	<0.01
500 m - 1 km	1	<0.01	<0.01	<0.01	<0.01	<0.01
	2	<0.01	<0.01	<0.01	<0.01	<0.01
	3	<0.01	<0.01	<0.01	<0.01	<0.01
	4	<0.01	<0.01	<0.01	<0.01	<0.01
	5	NA	0.66	<0.01	<0.01	<0.01
	6	NA	<0.01	<0.01	<0.01	<0.01
1-3 km 'Inside' Port Esperance	1	<0.01	<0.01	<0.01	<0.01	<0.01
	2	<0.01	<0.01	<0.01	<0.01	<0.01
	3	<0.01	<0.01	<0.01	<0.01	<0.01
	4	NA	<0.01	<0.01	<0.01	<0.01
1-3 km 'Outside' Port Esperance	1	<0.01	<0.01	<0.01	<0.01	<0.01
	2	NA	<0.01	<0.01	<0.01	<0.01
	3	NA	<0.01	<0.01	<0.01	<0.01
	4	NA	<0.01	<0.01	<0.01	<0.01

* Note that there was a misinterpretation regarding the mid-treatment sampling requirements. This was communicated to the EPA and rectified in the following sampling event.

8 Benthic Video Surveys

8.1 Survey sites

Benthic video surveys were conducted at the following sites see Figure 1 and Table 3 for sampling frequency:

- Seven internal (pen bay) sites at MF77;
- Eight internal (pen bay) sites at MF209.

8.2 Sample collection, processing and storage

The baseline video survey was conducted by Tassal's internal Remotely Operated Vehicle (ROV) team. As communicated to the EPA, due to insufficient detail in the initial residue monitoring requirements, the pre-treatment videos, whilst providing adequate footage of the seafloor, did not meet all the requirements for video surveys outlined in the relevant Environmental Licences. Video work was carried out using an APAMA Lite ROV. The ROV has a mounted DWE Explore HDD (1:1.9) camera that is relayed to the topside via a tether. The ROV uses 4 x 1500 Lumen lights to illuminate the seafloor while recording.

The mid-treatment and Day 1 post treatment benthic video surveys were conducted by Fulcrum robotics. Fulcrum's video work was carried out using a Deep Trekker Revolution® vectored inspection class ROV. The ROV has an internal 4K colour video camera that is relayed to the topside via a tether. HD recording was also captured using a GoPro® Hero5 with the settings medium view, NTSC 2.7K, 60FPS. All video footage was reviewed and assessed by Fulcrum, using the same methodology as specified in the Environmental Licences.

Survey coordinates for the benthic video survey are provided in Appendix 2.

8.3 Results

The benthic habitats of pen bay sites at both Meads Creek (MF77) and Stringers Cove (MF209) were typically characterised by dark coloured silty sediments with *Beggiatoa* mats evident. These characteristics were observed across the pre-, mid- and post-treatment surveys. At Meads Creek, faunal diversity appeared generally low and dominated by annelid worms from the *Capitella* genus. Swarming crustaceans and heart urchins were also observed across the pen bays at Meads Creek. At Stringers Cove, diversity of fauna was higher, and *Capitella* were observed across all pen bays. Other fauna occasionally observed across both leases included Northern Pacific seastars, flathead, big-bellied seahorse, seven-gilled sharks, side gilled slugs and ascidians. Minimal pellets were observed for all pen bays and fish faeces were commonly recorded. Overall, seabed type and faunal patterns appeared stable across the pre-, mid- and post-treatment surveys at both leases. A description of seabed conditions for the pre-, mid- and post-treatment surveys for each pen bay is provided in Appendix 5.

9 Summary

A Therapeutant Residue Monitoring Program was undertaken in the vicinity of MF77 Meads Creek and MF209 Stringers Cove marine farming leases, located in the D'Entrecasteaux Channel and Huon River Marine Farming Development Plan area. The Therapeutant Residue Monitoring Program was conducted in accordance with the specifications stipulated by the Tasmanian EPA in the *Therapeutant Residue Monitoring Schedule – Marine Farming Lease No's 77 (Meads Creek) and 209 (Stringers Cove) – November 2025*.

The Therapeutant Residue Monitoring Program included a suite of monitoring components (sediment, microbial, infauna, water quality, wild fish and video surveys. These were sampled at an array of monitoring sites prior to treatment, mid-treatment, and post-treatment (i.e. Day 7, Day 21, Day 38). Samples were taken at monitoring sites inside the lease (internal sites) and outside the lease (compliance sites, transect sites, reference sites, control sites).

For sediments, Florfenicol and Florfenicol amine concentrations were below the limit of reporting (LoR) at all internal (i.e. pen bay) and external sites (i.e. outside the lease area) in the baseline survey and all post-treatment surveys.

In water samples, Florfenicol and Florfenicol amine concentrations were above the LoR (i.e. 0.1 µg/L) at multiple sites during mid-treatment and Day 1 post-treatment surveys. In the Day 7 post-treatment survey, all internal and external sites recorded Florfenicol and Florfenicol amine concentrations below the LoR.

In wild-fish samples, out of a total of one hundred pooled samples collected, two pooled samples recorded Florfenicol and Florfenicol amine concentrations above the LoR. These two samples were from fish collected during the Day 1 post-treatment survey. In subsequent post-treatment surveys, no samples returned Florfenicol and Florfenicol amine concentrations above the LoR.

Baseline surveys of microbial and infauna communities were collected and archived. These samples provide a reference of baseline conditions before application of the Florfenicol treatment.

Appendices

Appendix 1: Antibiotic Florfenicol treatment details for MF77 Meads Creek and MF209 Stringers Cove lease. Treatment was administered by top coated feed, as prescribed by the Veterinary Authority (VA). Information below supplied by Tassal Operations Pty Ltd.

Type	VA	Lease	Pen Bays	Days	Treatment start date	Active ingredient (kg)
Florfenicol	25-Tx-20.1	Meads Creek	5, 6, 9	10	7 November 2025	110
Florfenicol	25-Tx-21.1	Meads Creek	4, 12, 13, 14	10	7 November 2025	123
Florfenicol	25-Tx-22.1	Stringers Cove	a01, a02, a05, a06, a09, a10, a13, a14	10	7 November 2025	320

In accordance with section 28(2(d)) of the *Environmental Standards for Tasmanian Marine Finfish Farming 2023*, the Therapeutant Residue Monitoring Program report must include an evaluation of the factors contributing to the need for medication, including (i) potential seasonal/environmental factors; (ii) history of therapeutant use and its cause on the lease area in the previous 10 year period; and (iii) Any known issues with batches of fish involved in the medication event, including vaccination status with reference to the disease required. A summary of these factors is provided below:

(i) A sudden water temperature spike of 1.4°C in 48 hrs likely precipitated clinical expression of *Piscirickettsia salmonis*.
(ii) There has been no therapeutant use on the Meads Creek or Stringers Cove leases in the last 10 years
(iii) There were no known issues with batches of fish in the medication event. Waning immunity from vaccination likely coincided with the observed temperature rise.

Appendix 2: Survey coordinates for the residue monitoring survey, based on the Mapping Grid of Australia Zone 55 (Datum GDA94). Coordinates from all surveys have been supplied to EPA in electronic format.

Table A2.1 Sediment survey coordinates (see Figure 1. Coordinates are from the survey when sites were first sampled during monitoring (i.e. Baseline or Day 1).

Lease	Site	Location	Easting	Northing	Site depth
MF77	MC_PB4	Internal	502332	5201887	29.9
	MC_PB5		502281	5201754	23.9
	MC_PB6		502392	5201857	30.0
	MC_PB9		502441	5201639	30.6
	MC_PB12		502549	5201645	33.3
	MC_PB13		502546	5201465	27.9
	MC_PB14		502614	5201566	39.5
	MC_CP2.1/NE35	External	502582	5201765	34.5
	MC_CP2.2/SE35		502762	5201365	25.4
	MC_CP2.3/E35		502705	5201621	39.1
	MC_CP3.1/NW35		502151	5202107	14.1
	MC_NE100		502630	5201807	37.2
	MC_NE500		502933	5202068	24.8
	MC_NW100		502113	5202158	15.1
	MC_NW500		501868	5202475	26.6
MF209	SC_PB1a	Internal	503346	5200902	21.6
	SC_PB2a		503448	5200989	39.2
	SC_PB5a		503634	5200847	25.9
	SC_PB6a		503719	5200899	37.0
	SC_PB9a		503923	5200759	31.5
	SC_PB10a		504020	5200834	35.0
	SC_PB13a		504202	5200691	31.1
	SC_PB14a		504281	5200744	32.6
	SC_CP1.1/W35	External	503197	5201050	34.8
	SC_CP1.4/N35		503873	5200952	37.0
	SC_CP2.3/E35		504451	5200592	20.7
	SC_W100		503141	5201079	34.6
	SC_W500		502784	5201255	18.8
	SC_N100		503890	5201017	38.3
	SC_N500		503984	5201403	24.0
	SC_E100		504518	5200607	17.2
	SC_E500		504900	5200409	14.5
Reference	BEMP_B12	Reference	502358	5202638	31.2
	BEMP_B7		511189	5202954	39.2
	Stringers_S7		504652	5201432	35.9
MF142	RP_PB4	Control	524055	5223879	22.2
	RP_PB11		524276	5224045	22.2
	RP_PB20		524546	5224098	20.8
	RP_CP1.3		524712	5224192	20.1
	RP_CP1.4		524198	5224138	22.7
	RP_CP3.2		523801	5223827	21.0

Table A2.2 Water quality survey coordinates (Marine Solutions).

Lease	Site Name	Site Category	Easting	Northing
MF77	MC_PB4	Internal	502263	5202028
	MC_PB6		502310	5201947
	MC_PB9		502435	5201633
	MC_PB14		502621	5201548
	MC_Internal		502338	5201644
	MC_CP2.1	External	502580	5201620
	MC_CP2.3		502704	5201620
	MC_CP3.1		502151	5202106
MF209	SC_PB2a	Internal	503397	5201028
	SC_PB5a		503674	5200804
	SC_PB10a		504007	5200868
	SC_PB14a		504282	5200785
	SC_Internal		503828	5200816
	SC_CP1.1	External	503199	5201620
	SC_CP1.4		503874	5201620
	SC_CP2.3		504451	5200589
BEMP	BEMP 12	Reference	502357	5202638
	BEMP 7		511188	5202953
	Stringers		504649	5201431

Table A2.3 Wild fish survey coordinates (Marine Solutions).

Zone	Site	Easting	Northing
0-500 m	4	502697	5200891
	9	502000	5201666
	167	503986	5200506
	168	502711	5200818
	169	503299	5200767
	170	502682	5200759
	178	502200	5201899
500 m - 1 km	6	503526	5201525
	162	501169	5201574
	164	503916	5201735
	166	505033	5200578
	182	503080	5201913
1-3 km 'Inside' Port Esperance	1	500869	5201468
	159	501134	5203662
	160	503517	5203302
	179	502345	5203963
	180	501683	5203736
	181	503439	5204183
	187	500596	5202771
1-3 km 'Onside' Port Esperance	161	505273	5199515
	171	505827	5203060

Table A2.4 Video survey GPS coordinates (Fulcrum Robotics).

Lease	Site	Easting	Northing	Depth (m)
MF77	**PB4**	502335	5201895	30.8
	PB5	502286	5201755	26.5
	PB6	502393	5201816	30.8
	PB9	502423	5201656	30
	PB12	502554	5201606	34
	PB13	502547	5201473	28.5
	PB14	502610	5201535	37.4
MF209	**PB2A**	503418	5201021	41.3
	PB5A	503592	5200821	23.5
	PB6A	503693	5200946	41.4
	PB9A	503876	5200751	27.2
	PB10A	503995	5200876	35.7
	PB13A	504148	5200697	32.9
	PB1A	503316	5200892	23.5
	PB14A	504259	5200801	33.5

*Note these GPS coordinates are for the mid-treatment and day 1 post treatment video surveys, as taken by Fulcrum Robotics.

Appendix 3: Weather conditions during field surveys.

Survey Category	Sampling Event	Field Date	Wind (knots, direction)	Sky
Pre-treatment	**Baseline**	5/11/2025	10-15 W	Sunny
		6/11/2025	10-15 W	Sunny
		7/11/2025	10-20 W	Overcast, drizzle
		13/11/2025 (Control sites)	0-25 WSW	Sunny
Mid-treatment	**Mid-treatment (Day 5)**	11/11/2025	30-40 W	Rain, hail
Post-treatment	**Day 1**	17/11/2025	15--30 W	Cloudy, rain, hail
		18/11/2025	10-25 WSW,	Cloudy, rain, hail
		19/11/2025	15-25 NW	Intermittent rain
	Day 7	24/11/2025	5-25 NE	Cloudy
		25/11/2025	5-10 NE	Cloudy
	Day 14	01/12/2025	Light SE	Overcast, drizzle
		02/12/2025	Light SW	Cloudy
	Day 21	07/12/2025	15-20 NW	Rain
		08/12/2025	15-20 NW	Rain
	Day 38	23/12/2025	25-30 W	Rain
		24/12/2025	25-30 W	Rain

Appendix 4: Wild fish sampling field data. Tables adapted from Table 8 of Attachment 3 of the *Therapeutant Residue Monitoring Schedule – Marine Farming lease Nos. 77 (Meads Creek) and 209 (Stringers Cove) – November 2025*.

Table A4.1: Mid treatment survey – wild fish sample data.

Zone	Pooled sample #	Fish number	Date	Time	GPS Point	Species	Length (mm)	Weight (g)	Gut contents
0-500 m	1	1	11/11/2025	1532	167	Australian Salmon	435	825	Empty
		2		1503			328	329	Empty
		3		1610			406	628	Empty
	2	4		1510	169	Bluethroat Wrasse	343	640	Urchin, Gastropod
		5		1735			370	737	Crab, Algae
		6		1735			322	579	Urchin, Crab, Flatworm
	3	7		1545	168	Sand Flathead	306	178	Empty
		8		1605			88	139	Empty
		9		1607			87	151	Empty
	4	10		1435	168	Sand Flathead	303	195	Crab
		11		1440			91	137	Worms
		12		1500			80	138	Crab
500 m - 1 km	1	1	11/11/2025	1130	162	Sand Flathead	335	233	Empty
		2		1140			303	186	potential pellets
		3		1150			301	183	Empty
	2	4		1445	164	Sand Flathead	336	252	Empty
		5		1445			305	210	Empty
		6		1445			311	181	Empty
	3	7		1520	166	Bluethroat Wrasse	312	481	Urchins, Small fish, Gastropods, Amphipods
		8		1520			335	569	Gasrtropds, Amphipods, Crab
		9		1520			246	288	Gastropods
	4	10		1500	164	Sand Flathead	254	120	Empty
		11		1500			279	135	Empty
		12		1500			301	165	Pipi (Plebidonax deltoides)
1-3 km Inside	1	1	11/11/2025	642	1	Sand flathead	270	127	Juvenille fish, Crabs
		2		644			280	163	1 x crab
		3		652			280	144	Empty
	2	4		745	159	Sand flathead	312	177	Empty
		5		750			320	238	1x crab
		6		754			328	194	
	3	7		805	160	Sand flathead	278	133	Empty
		8		810			274	130	Flat Worm
		9		819			280	120	Crabs, Shrimps
1-3 km Outside	1	10	11/11/2025	957	161	Sand flathead	315	190	Empty
		11		1035			283	135	Empty
		12		1051			306	179	Empty

Table A4.2: Day 1 Post-treatment survey – wild fish sample data.

Zone	Pooled sample	Fish number	Date	Time	GPS Point	Species	Length (mm)	Weight (g)	Gut contents
0-500 m	1	1	17/11/2025	1140	168	Sand Flathead	287	135	empty
		2		1143			305	175	crab
		3		1145			240	73	fish
	2	4	17/11/2025	1256	168	Sand Flathead	360	317	empty
		5		1330			311	157	shrimp
		6		1325			245	260	crabs
	3	7	17/11/2025	1140	168	Australian Salmon	373	521	amphipods
		8		1530			365	463	amphipods
		9		1545			305	245	algae
	4	10	17/11/2025	1330	9	Bluethroat wrasse	276	350	Bivalves
		11		1335			251	276	empty
		12		1400			269	327	Bivalves
	5	13	17/11/2025	1330	4	Bluethroat wrasse	306	467	Bivalves
		14		1332			323	525	crab, bivalves
		15		1335			260	297	parwns
	6	16	17/11/2025	1400	170	Sand Flathead	330	237	empty
		17		1547			335	209	crab
		18		1550			298	181	empty
	7	19	17/11/2025	1430	9	Purple Wrasse	323	542	algae
		20		1440			315	535	amphipods
		21		1450			231	172	Bivalves, Algae
	8	22	17/11/2025	1430	170	Bluethroat wrasse	330	682	Crabs
		23		1430			491	1003	Crabs, Bivalves
		24		1500			311	489	urchin, Crabs
500 m -1 km	1	1	17/11/2025	1701	162	Sand Flathead	310	189	crabs, worm
		2		1701			284	136	crabs
		3		1802			236	73	crabs
	2	4	17/11/2025	1710	162	Australian Salmon	353	420	amphipods
		5		1713			324	354	empty
		6		1725			395	305	Empty
	3	7	17/11/2025	1720	162	Australian Salmon	330	341	empty
		8		1830			328	300	amphipods
		9		1830			280	249	empty
	4	10	17/11/2025	1810	162	Sand Flathead	283	153	crabs
		11		1810			300	197	crabs & other crustaceans
		12		1830			265	125	Crabs
	5	13	17/11/2025	1820	6	Australian Salmon	320	322	Pellets
		14		1815			305	266	empty
		15		1815			27	203	empty
	6	16	17/11/2025	1830	6	Sand Flathead	245	87	crabs
		17		1835			355	294	crabs
		18		1840			305	182	empty
1-3 km Inside	1	1	17/11/2025	610	159	Sand Flathead	295	169	empty
		2		615			350	360	crabs & other crustaceans
		3		630			270	115	crabs & other crustaceans
	2	4	17/11/2025	725	159	Sand Flathead	290	160	empty
		5		730			290	164	empty
		6		800			280	120	crustaceans
	3	7	17/11/2025	840	179	Sand Flathead	235	347	crustaceans
		8		850			325	210	crabs
		9		852			320	199	crabs & other crustaceans
	4	10	17/11/2025	990	179	Sand Flathead	300	188	crustaceans
		11		910			290	149	shrimp, algae
		12		930			302	166	shrimp, algae
1-3 km Outside	1	13	17/11/2025	1000	161	Sand Flathead	306	168	empty
		14		1010			340	210	crab (spider crab, juvenille)
		15		1015			318	201	empty
	2	16	17/11/2025	1017	161	Sand Flathead	319	180	bivalves, shrimp
		17		1018			335	228	worm, shrimp
		18		1020			305	191	shrimp
	3	19	18/11/2025	730	161	Bluethroat wrasse	240	255	empty
		20		730			300	448	empty
		21		730			380	706	Algae
	4	22	18/11/2025	740	171	Sand Flathead	300	187	empty
		23		750			330	220	empty
		24		750			320	209	isopod

Table A4.3: Day 7 Post-treatment survey – wild fish sample data.

Zone	Pooled sample	Fish number	Date	Time	GPS Point	Species	Length (mm)	Weight (g)	Gut contents
0-500 m	1	1	24/11/2025	1400	178	Australian salmon	400	630	baitfish
		2		1405			410	685	empty
		3		1410			450	950	baitfish
	2	4		1412			295	260	empty
		5		1415			330	355	empty
		6		1417			350	430	unidentified digested material
	3	7		1419			300	250	empty
		8		1420			400	530	unidentified digested material
		9		1422			455	930	unidentified digested material
	4	10		1500			275	120	empty
		11		1502		Sand flathead	345	270	baitfish
		12		1504			267	115	empty
	5	13		1505			420	760	Pellet
		14		1505		Australian salmon	422	645	empty
		15		1508			385	560	empty
	6	16		1515			360	325	unidentifeid
		17		1518		Sand flathead	300	200	empty
		18		1525			329	250	empty
	7	19		1530			343	395	Isopods
		20		1531		Australian salmon	331	290	Isopods
		21		1533			310	290	fish, isopod, polycheate
	8	22		830			350	310	crab, isopod, shrimp
		23		835		Sand flathead	280	145	empty
		24		837			340	310	empty
500 m -1 km	1	1	24/11/2025	800	162	Sand flathead	230	70	empty
		2		1310			280	145	empty
		3		1320			275	125	empty
	2	4		1820			274	1330	empty
		5		1830			330	280	empty
		6		1835			285	125	crab
	3	7	25/11/2025	807	182		295	165	baitfish
		8		815		Sand flathead	290	155	empty
		9		817			260	105	empty
	4	10		730			230	200	empty
		11		740		Bluethroat wrasse	295	440	empty
		12		825			290	395	algae
	5	13		725			298	415	empty
		14		727		Bluethroat wrasse	385	990	bivalves, moullscs
		15		720			343	710	empty
	6	16		705			345	625	crab
		17		710		Bluethroat wrasse	300	30	unidentified digested material
		18		715			415	118	empty
1-3 km Inside	1	13	24/11/2025	1120	179	Sand flathead	338	230	unidentified digested material
		14		1120			335	245	unidentified digested material
		15		1130			304	150	unidentified digested material
	2	16		1150	180		290	145	unidentified digested material
		17		1145		Sand flathead	305	165	unidentified digested material
		18		1150			290	165	unidentified digested material
	3	19		1125			305	165	crab
		20		1130	181	Sand flathead	305	205	shrimp, isopod
		21		1135			310	190	unidentified digested material
	4	22		1320			220	50	digested material
		23		1325		Sand flathead	234	70	empty
		24		1330			198	50	crab
1-3 km Outside	1	1	24/11/2025	905	171	Sand flathead	295	155	crab
		2		900			285	155	empty
		3		910			265	120	isopod, shrimp
	2	4		930			280	125	mollusc
		5		935		Sand flathead	310	175	unidentified digested material
		6		939			290	140	unidentified digested material
	3	7		1000			270	125	empty
		8		1010	161	Sand flathead	250	105	empty
		9		1020			250	115	crab
	4	10		1020			250	280	bivalves
		11		1030		Bluethroat wrasse	320	670	empty
		12		1050			275	365	unidentified

Table A4.4: Day 21 Post-treatment survey – wild fish sample data.

Zone	Pooled sample	Fish number	Date	Time	GPS Point	Species	Length (mm)	Weight (g)	Gut contents
0-500 m	1	1	8/12/2025	09:50	169	Bluethroat wrasse	320	530	Empty
		2		09:54			340	500	Mollusc
		3		10:00			270	300	Empty
	2	4	8/12/2025	09:26	167	Sand Flathead	330	275	Unidentified brown goop
		5		09:28			270	145	Empty
		6		09:30			240	110	2x small fish
	3	7	8/12/2025	10:03	169	Australian salmon	390	615	Empty
		8		10:02			410	745	Small fish
		9		10:05	167		390	605	Empty
	4	10	8/12/2025	09:35	167	Sand Flathead	210	60	Molluscs
		11		09:37			240	80	Isopods
		12		09:40			220	80	Crab
	5	13	8/12/2025	10:10	167	Australian salmon	340	385	Empty
		14		10:12			400	640	2x small fish
		15		10:08			420	750	1x small fish
	6	16	8/12/2025	08:50	168	Sand Flathead	290	165	Empty
		17		09:27			270	115	Crab
		18		09:35			240	80	Empty
	7	19	8/12/2025	10:20	167	Australian salmon	350	480	digested fish and 1x whole fish
		20		10:21			420	775	3x small fish
		21		10:22			395	680	3x small fish
	8	22	8/12/2025	09:58	169	Sand Flathead	310	170	Worms
		23		10:00			330	235	Empty
		24		10:17	167		380	390	Empty
500 m -1 km	1	1	8/12/2025	07:49	182	Sand Flathead	250	100	Crab
		2		08:05			300	145	Squat lobster
		3		08:07			320	245	Mantis shrimp
	2	4	7/12/2025	18:02	162	Sand Flathead	250	100	Small crab
		5		19:50			300	185	Empty
		6		19:46			270	130	Small crab
	3	7	8/12/2025	07:32	164	Sand Flathead	350	235	Empty
		8		07:38			330	235	Unidentified brown goop
		9		07:43			300	190	Isopods
	4	10	8/12/2025	08:06	164	Sand Flathead	410	455	Empty
		11		08:14			330	240	Empty
		12		08:30	182		410	505	Empty
	5	13	7/12/2025	18:45	162	Australian salmon	410	670	Empty
		14		17:45			345	450	Empty
		15		18:00			300	325	Small crab
	6	16	8/12/2025	07:59	164	Bluethroat wrasse	315	525	Empty
		17		07:53			290	425	Empty
		18		08:25			280	345	Empty
1-3 km Inside	1	13	7/12/2025	16:32	187	Sand Flathead	295	165	Crab
		14		16:25			240	95	Empty
		15		16:29			285	150	Crab
	2	16	7/12/2025	15:45	179	Sand Flathead	250	100	Empty
		17		15:52			310	185	Crabs and isopods
		18		15:56			320	225	Empty
	3	19	7/12/2025	16:20	159	Sand Flathead	330	225	Crabs
		20		16:24			320	225	Crabs
		21		16:26			320	225	Crabs and juvenile fish
	4	22	7/12/2025	15:35	181	Sand Flathead	310	190	Isopod, crushed/digested
		23		15:40			320	190	Unidentified brown material
		24		15:58			380	305	Empty
1-3 km Outside	1	1	7/12/2025	13:16	171	Sand Flathead	285	145	Empty
		2		13:20			260	105	Empty
		3		13:47			350	285	Empty
	2	4	7/12/2025	13:47	171	Sand Flathead	280	130	Empty
		5		13:48			260	125	Empty
		6		13:49			270	135	Mantis Shrimp(see photos)
	3	7	7/12/2025	14:10	161	Bluethroat wrasse	265	325	Digested crustaceans
		8		14:28			275	365	Empty
		9		14:32			270	310	Digested crustaceans
	4	10	7/12/2025	14:49	161	Bluethroat wrasse	400	1090	Digested molluscs
		11		14:54			360	850	Empty
		12		14:58			305	535	Digested molluscs

Table A4.5: Day 38 (500 degree day) post-treatment survey – wild fish sample data.

Zone	Pooled sample	Fish number	Date	Time	GPS Point	Species	Length (mm)	Weight (g)	Gut contents
0-500 m	1	1	23/12/2025	7:05	178	Sand Flathead	320	160	Worms
		2					310	155	Worms, Whitefish
		3					330	220	Anthropods, White fish
	2	4	23/12/2025	7:11	178	Australian salmon	340	420	White baitfish
		5					290	245	Empty
		6					295	235	White baitfish
	3	7	23/12/2025	7:15	178	Sand Flathead	320	185	White worms
		8					305	150	Empty
		9					300	135	White fish, Meat remnants
	4	10	23/12/2025	7:23	178	Sand Flathead	310	135	Empty
		11					360	295	Crabs, Worms
		12					300	155	Anthropods
	5	13	23/12/2025	10:02	178	Australian salmon	310	280	White baitfish, Worms
		14					440	1005	Empty
		15					385	645	Empty
	6	16	23/12/2025	10:08	178	Australian salmon	265	170	Digestive Material
		17					305	295	Empty
		18					285	255	Empty
	7	19	23/12/2025	10:35	178	Jackass morwong	278	275	Digestive Material
		20					263	215	Bivalves, Shellgrit
		21					300	325	Digestive Material, Worms
	8	22	23/12/2025	10:49	178	Jackass morwong	305	295	Digestive Material, Worms, Red alge
		23					264	235	Digestive Material, Worms
		24					296	285	Digestive Material, Worms
500 m -1 km	1	1	23/12/2025	11:59	164	Purple wrasse	340	740	Empty
		2					320	640	Gastropod
		3					279	425	Empty
	2	4	23/12/2025	12:04	164	Purple wrasse	360	840	Worms, Gastropod
		5					280	370	Empty
		6					365	765	Green algae
	3	7	23/12/2025	12:03	164	Bluethroat wrasse	281	345	Shell grit
		8					264	290	Periwinkle shell
		9					282	415	Shell grit
	4	10	23/12/2025	12:12	164	Sand Flathead	342	265	Empty
		11					308	175	Crabs
		12					273	130	Empty
	5	13	23/12/2025	12:26	164	Sand Flathead	322	210	Polychate
		14					300	210	Gastropod
		15					281	130	Gastropod
	6	16	23/12/2025	12:27	164	Purple wrasse	320	640	Empty
		17					330	1250	Mussel shell grit
		18					216	175	Shell grit
1-3 km Inside	1	13	23/12/2025	7:12	187	Sand Flathead	300	160	White baitfish
		14					185	95	Anthropods
		15					340	245	Worms
	2	16	23/12/2025	7:36	187	Sand Flathead	320	155	Worms
		17					183	65	White baitfish
		18					195	85	Empty
	3	19	23/12/2025	8:12	180	Sand Flathead	295	150	Empty
		20					245	110	Worms
		21					295	145	White baitfish
	4	22	23/12/2025	10:15	180	Bluethroat wrasse	275	305	Shell grit
		23					270	285	Mussel shell grit
		24					295	1385	Shell, Molluscs
1-3 km Outside	1	1	23/12/2025	15:09	161	Barber Perch	210	135	Empty
		2					200	95	White worms
		3					205	95	Anthropods
	2	4	23/12/2025	15:12	161	Barber Perch	160	55	Empty
		5					200	115	Gastropod
		6					190	100	White worms
	3	7	23/12/2025	15:20	171	Sand Flathead	300	175	Anthropods
		8					330	225	Empty
		9					290	155	Baitfish
	4	10	23/12/2025	15:20	171	Sand Flathead	270	115	Worms
		11					240	85	Empty
		12					290	145	Baitfish

Appendix 5: Benthic video survey – summary data.

Table A5.1 Meads Creek (MF77).

Lease	Pen Bay	Survey	Date	Description Pretreatment (6 November 2025)
MF77	PB4	Pre-treatment	06-Nov-25	**Seabed:** Silty sediment, marine snow, bait fish carcasses, thick matting Beggiatoa sp., feed and faeces, free bubbling. **Fauna:** Capitelid sp. **Flora:** Green, brown and red algae, various drift algae fragments. **Other:** NA.
	PB5		06-Nov-25	**Seabed:** Silty sediment, marine snow, faunal tracks, mussel shells, free bubbling, thick matting Beggiatoa sp. **Fauna:** Capitelid sp. **Flora:** Green, brown and red algae, various drift algae fragments. **Other:** Plant matter? (ROV 3:10).
	PB6		06-Nov-25	**Seabed:** Silty sediment, feed and faeces, marine snow, shells and shell fragments, streaming Beggiatoa sp. **Fauna:** Capitellid sp. **Flora:** Green and brown algae, various algae fragments. **Other:** Organic structure? (ROV 2:19).
	PB9		06-Nov-25	**Seabed:** Silty sediment, marine snow, feed and faeces, mussel shells, urchin tests, thin matting Beggiatoa sp. **Fauna:** Capitelid sp., Ascidian sp., heart urchin. **Flora:** Green and red benthic algae, various drifting algae fragments. **Other:** Organic structure? (ROV 1:18).
	PB12		06-Nov-25	**Seabed:** Silty sediment, marine snow, feed and faeces, thin matting Beggiatoa sp., mussel shells, burrows and mounds, urchin tests. **Fauna:** Egg mass? (ROV 0:17), Capitelid sp., heart urchin, Ascidian sp., crab sp. **Flora:** Green and red benthic algae, various drifing algae fragments. **Other:** NA.
	PB13		06-Nov-25	**Seabed:** Silty sediment, marine snow, feed and faeces, urchin tests, rock, mussel shells, thick matting Beggiatoa sp., free bubbling. **Fauna:** Heart urchin, Capitelid sp., Ascidian sp., swarming crustacea. **Flora:** Green and red benthic algae, various drift algae fragments. **Other:** Leaf.
	PB14		06-Nov-25	**Seabed:** Silty sediment, marine snow, feed and faeces, mussel shells, bait fish carcasses, patchy Beggiatoa sp. **Fauna:** NP seastar, swarming crustacea, Capitelid sp. **Flora:** Green and red benthic algae, various drift algae fragments. **Other:** NA.
	PB4	Mid-treatment	11-Nov-25	**Seabed:** Marine snow, streaming Beggiatoa sp., free bubbling, silty sediment, shells and shell fragments, urchin tests, feed and faeces, deceased bait fish. **Fauna:** Swarming crustacea, larval fish sp., peanut worm sp.? (GoPro 2:55). **Flora:** Brown, red and green alage. **Other:** Stick.
	PB5		11-Nov-25	**Seabed:** Marine snow, silty sediment, feed and faeces, shells and shell fragments, streaming beggiatoa sp, free bubbling, light organic clumps (e.g. ROV 2:51). **Fauna:** NP seastar, capitelid sp. (ROV 2:45). **Flora:** Green and red algae fragments, benthic brown and red algae sp. **Other:** Low visibility, stick.
	PB6		11-Nov-25	**Seabed:** Silty sediment, marine snow, burrows and mounds, worm tubes, urchin tests, shells and shell fragments, mussel shells, faunal tracks, patchy beggiatoa sp., feed and faeces. **Fauna:** Larval fish sp., heart urchin, ascidian sp., side gilled slug, NP seastar, goby sp, crab sp., flathead sp., brittle star sp., sabellid sp., egg mass, capitelid sp. (ROV 4:53). **Flora:** Benthic green, brown and red algae, various drift algae. **Other:** Bubbles from ROV (GoPro 2:58), bark, leaf.
	PB9		11-Nov-25	**Seabed:** Silty sediment, marine snow, feed and faeces, mussel shells, burrows and mounds, shells and shell fragments, patchy beggiatoa sp. **Fauna:** Flathead sp., bryzoan sp., egg mass, crab sp., worm sp? (ROV 4:33), capitelid sp. **Flora:** Green and red benthic algae, various algae fragments. **Other:** Low visibility.
	PB12		11-Nov-25	**Seabed:** Silty sediment, marine snow, mussel shells, burrows and mounds, urchin tests, feed and faeces, thin matting beggiatoa sp. **Fauna:** Heart urchin, bryzoan sp., capitelid sp. **Flora:** Benthic green algae, various algae fragments. **Other:** Net, unidentified object (ROV 3:43).
	PB13		11-Nov-25	**Seabed:** Silty sediment, marine snow, burrows and mounds, faunal tracks, worm tubes, shells and shell fragments, mussel shells, urchin tests, thin matting beggiatoa sp., feed and faeces. **Fauna:** Ascidian sp., sabellid sp., egg mass, gurnard sp., NP seastar, goby sp., heart urchin, seven gill shark, capitelid sp. **Flora:** Green and brown benthic algae, green algae fragments, ulva sp. **Other:** Unknown organic structure (GoPro 5:14).
	PB14		11-Nov-25	**Seabed:** Silty sediment, marine snow, burrows and mounds, feed and faeces, shells and shell fragments, patchy beggiatoa sp. **Fauna:** Flathead sp., capitelid sp., ascidian sp., seven gill shark (GoPro 4:23), swarming crustacea. **Flora:** Green and brown benthic algae, brown drift algae. **Other:** Nil.
	PB4	Post-treatment	17-Nov-25	**Seabed:** Thin mat of Beggiatoa sp., silty sediment, marine snow, feed and faeces, free bubbling. **Fauna:** Silver travelly, capitelid sp. **Flora:** Various algae fragments, Ulva sp. **Other:** Stick.
	PB5		17-Nov-25	**Seabed:** Thin mat of Beggiatoa sp., patch of streaming Beggiatoa sp. (GoPro 2:35), silty sediment, marine snow, feed and faeces, shell fragments, mussel shells, crab carapace, free bubbling. **Fauna:** Ascidian sp., Blue mackeral **Flora:** Green and red algae, various algae fragments. **Other:** Seal interaction.
	PB6		17-Nov-25	**Seabed:** Thin mat of Beggiatoa sp., silty sediment, marine snow, feed and faeces, shell fragments, mussel shells, free bubbling. **Fauna:** Capitelid sp. **Flora:** Various algae fragments. **Other:** Nil.
	PB9		17-Nov-25	**Seabed:** Patches of streaming Beggiatoa sp., silty sediment, marine snow, feed and faeces, worm tubes, shell fragments, mussel shells, burrows and mounds, bioturbation. **Fauna:** Eggmass, encrusting sponge, brittle star sp., ascidian sp., sponge sp, Capitelid sp., Annelid sp? (ROV 5:10) **Flora:** Filamentous green algae, green alage, various algae fragments. **Other:** Organic debris? (ROV 3:25), low visibility, hose? (GoPro 5:43)
	PB12		17-Nov-25	**Seabed:** Thin mat of Beggiatoa sp., silty sediment, marine snow, feed and faeces, burrows and mounds, bioturbation. **Fauna:** Flathead sp., heart urchin, Ascidian sp. **Flora:** Various algae fragments**. Other:** Rope? (GoPro 5:21), rope.
	PB13		17-Nov-25	**Seabed:** Marine snow, silty sediment, shells and shell fragments, burrows and mounds, worm tubes, feed and faeces, thin mat Beggiatoa sp., stones, NZ screwshell. **Fauna:** Fire crab, ascidian sp., larval fish sp., goby sp., whelk sp., NP seastar, swarming crustacea, heart urchin, flathead sp., pot-bellied seahorse. **Flora:** Various greean and brown drift algae, green and red benthic algae**. Other:** Rope, rope? (GoPro 4:21).
	PB14		17-Nov-25	**Seabed:** Marine snow, silty sediment, burrows and mounds, faunal tracks, feed and faeces, shell fragments, worm tubes, patchy Beggiatoa sp. **Fauna:** Flathead sp., ascidian sp., crab sp., egg mass, swarming crustacea, whelk sp. **Flora:** Various algae fragments, benthic brown and green algae. **Other:** Nil.

Table A5.1 Stringers Cove (MF209).

Lease	Pen Bay	Survey	Date	Comments
MF209	PB1a	Pre-treatment	06-Nov-25	**Seabed:** Silty sediment, feed and feasces, thin matting Beggiatoa, mussel shells, marine snow. **Fauna:** Ascidian sp? (ROV 0:52), Ascidian sp., bass yabbie, Capitelid sp. **Flora:** Brown and red algae, green and red algae fragments. **Other:** Nil.
	PB2a		06-Nov-25	**Seabed:** Silty sediment, feed and feaces, thin matting Beggiatoa, mussel shells, marine snow. **Fauna:** Ascidian spp., NP seastars, Anenome sp., Capitelid sp. **Flora:** Red algae, green and red algae fragments. **Other:** Nil.
	PB5a		06-Nov-25	**Seabed:** Silty sediment, mounds and burrows, feed and feaces, thick matting Beggiatoa, marine snow. **Fauna:** Capitelid sp., heart urchin. **Flora:** Red algae, green and red algae fragments. **Other:** Nil.
	PB6a		06-Nov-25	**Seabed:** Silty sediment, mussell shells, feed and feaces, thick matting Beggiatoa, marine snow, baitfish carcasses. **Fauna:** NP seastar, Crab sp., Capitelid sp., heart urchin. **Flora:** Green and red algae fragments. **Other:** Nil.
	PB9a		06-Nov-25	**Seabed:** Marine snow, silty sediment, feed and faeces, crab carcass, mussel shells, thick matting Beggiatoa sp. **Fauna:** Capitellid sp., heart urchin, ascidian sp., annelid sp. (01:42). **Flora:** Red and green algae, various algae fragments, benthic brown algae sp. **Other:** Nil.
	PB10a		06-Nov-25	**Seabed:** Marine snow, silty sediment, thick matting Beggiatoa sp., burrows and mounds, feed and faeces, mussel shells, bait fish carcasses. **Fauna:** Capitelid sp., NP seastar, Gastropod snail sp., Sponge sp., Ascidian sp. **Flora:** Green, red and brown algae, various drift algae fragments. **Other:** Nil.
	PB13a		06-Nov-25	**Seabed:** Marine snow, silty sediment, thick matting Beggiatoa sp., feed and faeces, **Fauna:** Heart urchins, Capitelid sp., egg mass. **Flora:** Red and green algae, various algae fragments. **Other:** NA
	PB14a		06-Nov-25	**Seabed:** Marine snow, silty sediment, thick matting Beggiatoa sp., feed and faeces, mussel shells. **Fauna:** NP seastar, Gastropod snail sp., Capitelid sp. **Flora:** Red and green algae, various drifting algae fragments. **Other:** Unidentified debris? (ROV 0:36).
	PB2A	Mid-treatment	11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy/silty sediment, shells and shell fragments, faunal tracks, burrows and mounds, feed and faeces. **Fauna:** Ascidian sp., flathead sp., Capitelid sp., NP seastar. **Flora:** Drift brown algae sp., kelp fragments, sessile red algae sp., green algae. **Other:** Rope (GoPro 6:25).
	PB5A		11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, faunal tracks, burrows and mounds, bioturbation, dead algae, feed and faeces. **Fauna:** Nil. **Flora:** Drift green algae sp., kelp fragments, red algae fragments, filamentous green algae. **Other:** Bubbling on disturbance.
	PB6A		11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy/silty sediment, shells and shell fragments, faunal tracks, burrows and mounds, sea tulip stalks, bioturbation, dead algae, feed and faeces. **Fauna:** NP seastar, gurnard sp., seamoth, side gilled slug, cod, flathead sp., Sabellid sp., Capitelid sp. **Flora:** Brown algae sp., filamentous green algae. **Other:** Nil.
	PB9A		11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, faunal tracks, burrows and mounds, dead algae, feed and faeces. **Fauna:** Ascidian sp. **Flora:** Kelp fragments, green algae fragments, filamentous green algae. **Other:** Nil.
	PB10A		11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells/fragments, faunal tracks, burrows and mounds, dead algae, NZ screw shell, feed and faeces. **Fauna:** Ascidian sp., side gilled slug, NP seastar, eggmass, Capitelid sp., flathead sp. **Flora:** Kelp fragments, brown algae, green and red algae fragment. **Other:** Nil.
	PB13A		11-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy/silty sediment, feed and faeces. **Fauna:** Capitelid sp. Ascidian sp., Annellid sp? (GoPro 2:39). **Flora:** Various algae fragments, brown benthic algae. **Other:** Bubbling on disturbance.
	PB1A		11-Nov-25	**Seabed:** Marine snow, sandy/silty sediment, shells and shells fragments, burrows and mounds, feed and faeces, thin matting beggiatoa sp., sea tulip stalk. **Fauna:** NP seastar, silver trevally, broadnose seven-gilled shark, Ascidian sp., Capitelid sp. **Flora:** Benthic red algae sp., caulerpa sp. **Other:** ROV bubble (GoPro 1:36), unknown organic mass (ROV 3:11).
	PB14A		11-Nov-25	**Seabed:** Marine snow, silty/sandy sediment, feed and faeces, thick matting beggiatoa sp., crab carapace. **Fauna:** NP seastar, gurnard sp., side-gilled slug, gelantinous egg mass, Capitelid sp. **Flora:** Drifting brown algae fragments, algae sp. (GoPro 4:14). **Other:** Nil.
	PB2a	Post-treatment	17-Nov-25	**Seabed:** Thin matting Beggiatoa sp., marine snow, NZ screw shell, sandy sediment, shells and shell fragments, faunal tracks, burrows and mounds, decaying algae, feed and faeces. **Fauna:** Ascidian spp., NP seastar, brittle star sp., flounder sp., capitellid sp. **Flora:** Drift green algae sp., red algae fragments, filamentous green and red algae. **Other:** Nil.
	PB6a		17-Nov-25	**Seabed:** Thin matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, decaying algae, feed and faeces, biofouling debris. **Fauna:** Silver trevally, Capitelid sp. **Flora:** Brown and green algae fragments. **Other:** Nil.
	PB10a		17-Nov-25	**Seabed:** Thin matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, decaying algae, feed and faeces, biofouling debris. **Fauna:** Peanut worm, egg mass, Capitelid sp. **Flora:** Brown and green algae fragments. **Other:** Nil.
	PB14a		17-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, decaying algae, feed and faeces, biofouling debris, bubbling on disturbance. **Fauna:** Flathead sp., Capitelid sp., NP seastar, Ascidian sp. **Flora:** Brown, green and red algae fragments. **Other:** Nil.
	PB13a		17-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, feed and faeces, biofouling debris. **Fauna:** Capitelid sp. **Flora:** Brown, green and red algae fragments. **Other:** Debris? (GoPro 4:10).
	PB9a		17-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, sandy sediment, shells and shell fragments, decaying algae, feed and faeces, sea tulip stalk. **Fauna:** NP sesatars, Anenome sp., Peanut worm, Capitelid sp., Heart urchin. **Flora:** Kelp, brown, red and green algae fragments. **Other:** Unidentified pipe? (GoPro 3:41).
	PB5a		17-Nov-25	**Seabed:** Thick matting Beggiatoa sp., marine snow, burrows and mounds, sandy sediment, shells and shell fragments, decaying algae, feed and faeces. **Fauna:** NP sesatars, Peanut worm, Heart urchin, Capitelid sp. **Flora:** Red and green algae fragments. **Other:** Mooring rope.
	PB1a		17-Nov-25	**Seabed:** Thin matting Beggiatoa sp., marine snow, burrows and mounds, sandy sediment, shells and shell fragments, decaying algae, feed and faeces. **Fauna:** Flathead sp., Ascidian spp., Australian swellshark, heart urchins, Bryozoan sp., Capitelid sp. **Flora:** Various algae fragments, red and green benthic algae. **Other:** Bullet weight.