



ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT

This EMP Report is prepared to Support an Application for Environmental Clearance Certificate (ECC: APP-[003890](#)) to construct and operate a Finfish Cage Farm in Lüderitz, Karas region, Namibia

Prepared for



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1. INTRODUCTION

The EMP (Environmental Management Plan) is a commitment by the proponent to incorporate environmental protection in their daily underwater hull cleaning operations. More importantly, the proponent further undertake to integrate this EMP into their Company Environmental Policy.

EMP provides a clear and concise baseline environmental monitoring plan detailing which environmental indicators will be monitored and the SOPs (standard operation procedures) to be used for each environmental indicators. Environmental indicators will be used to describe state of the environment including quality of seawater and sediment before and after the underwater hull cleaning. Environmental indicators are divided into 2 categories viz. Physiochemical and biological indicators.

Within each category are parameters which will be measured using various equipment and instruments.

2. OBJECTIVES

The purpose of this EMP is to describe how the proponent intend to implement the EMP by providing a clear and concise baseline environmental monitoring plan detailing which environmental indicators will be monitored and the SOPs to be used for each indicator.

Specific objectives are to:

- List documentations (e.g. permits, method statements, SOPs, etc) required for performing mariculture activities;
- Identify baseline environmental indicators and parametres to be measured;
- Prescribe technology and equipment required;
- Establish the MC (Environmental Management Committee) and identify human capacity requirements;

- Translate EMP and baseline mitigation plan into a company environmental policy, and
- Describe in details mitigation actions required to minimize or reduce negative impacts.

3. ENVIRONMENTAL CERTIFICATIONS AND DOCUMENTATIONS

Environmental certifications will include permits and certificates needed to authorize performance of underwater hull cleaning as required by GRN. Documentations will be communicable materials that will be required to describe, explain or instruct and communicate information regarding the mariculture operational procedures.

Before commencement of the proposed mariculture farming operation, the following environmental certifications and documentations shall be required:

Table 1: permits and authorization.

Certification and documentation	Institution/competent authority	Contact person/details
Environmental clearance certificate (ECC)	Ministry of Environmental, Forestry and Tourism	Environmental Commissioner
Aquaculture licence	Ministry of Fisheries and Marine Resources	Executive Director
Domestic and industrial wastewater and effluent discharge permits	Ministry of Agriculture, Water and Land Reform	Department of Water Affairs
Baseline environmental monitoring plan	Ministry of Fisheries and Marine Resources	Harbor master
SOPs (Standard operation procedures)	Ministry of Fisheries and Marine Resources	Harbor master

Contents and conditions of ECC, written permission to operate as well as domestic and industrial wastewater and effluent discharge permits will be determined by the competent authorizing entities. Details for other documentations required are proposed to be as described below.

Table 2: documentations.

Documentations	Proposed contents
Baseline environmental monitoring plan	<input type="checkbox"/> Physical/chemical and biological indicators (environmental indicators). <input type="checkbox"/> SOPs for environmental indicators.
SOPs (Standard operation procedures)	<input type="checkbox"/> Detailed procedures will be provided in the SOPs for each documentation.

4. BASELINE ENVIRONMENTAL MONITORING INDICATORS

4.1. Physical/chemical environmental indicators

The following parametres will be used as indicators of water quality:

- Free Carbon Dioxide;
- Seas surface temperatures (SSTs);
- Dissolved oxygen (DO);
- Turbidity;
- Total suspended and dissolved solids;
- Nutrients (nitrates, nitrites, total phosphate, free chlorine, etc);
- pH, conductivity/salinity metre; Pathogens (bacteria, virus, etc), and
- Trace metals.

Water samples for the above parametres should be collected quarterly or as will be recommended by MFMR. Samples shall either be measured on site or transported to a laboratory for analysis. Data will be recorded using various (see example **Form-1**). Detailed procedures are provided will be in the SOPs for each parameters.

Concentration levels of trace metals will be measured from water and sediment samples. Trace metals concentration levels will be used to indicate nutrient concentration which may result from release of fish feed and waste.

4.2. Baseline biological sampling

The following parametres will be used as biological indicators:

- Phytoplankton;
- Zooplankton, and
- Epi-fauna, and Benthic fauna.

Phytoplankton and zooplankton samples for the each parametres should be collected quarterly or as will be recommended by MFMR.

5. TECHNOLOGY AND EQUIPMENT REQUIREMENTS

Equipment and technologies required for EMP implementation and baseline environmental monitoring are provided below. These equipment and technology are available from various institutions in Namibia such as NCRST, NUST, MFMR, UNAM, NAMWATER, MAWL and commercial laboratories. There are also other institutions like BCC (Benguela Current Convention) that may not own required equipment and technologies but whose mandate is to combat marine pollution.

With regard to technologies and equipment requirements, the local capacity for baseline environmental monitoring exist in Namibia. Therefore, it will not be necessary for the proponent to purchase these technologies and equipment. Rather it will be advisable for the proponent to collaborate with local institutions in order to invest in the local capacity for environmental baseline monitoring activities. These activities, which will involve hiring of environmental consultants, training of students and in-service staffs in conducting baseline surveys, sample collection, sample processing and analysis and reporting; will positively contribute to a cleaner and safer environment in the proposed area.

Table 2: technology and equipment requirements.

Parametre	Equipment/method
Free Carbon Dioxide (CO ₂)	<p>-Measure CO₂ directly using beverage carbonation metre. The recommended OxyGuard portable CO₂ meter is a reliable and easy-to-use instrument that measures dissolved CO₂ in water. The meter consists of a probe and a battery-powered transmitter. The meter displays CO₂ concentration and an analog signal as output.</p> <p>-The titration method can also be used, though not recommended.</p>
Water temperature	<p>-Measure using a thermometer.</p> <p>-The Hach HQ30D also measures temperature.</p> <p>-Currently there are online weather databases that provide daily water temperature data.</p>
Dissolved oxygen	<p>-The recommended Hach HQ30D portable multi-parametre gives maximum measurement flexibility and ease of operation with interchangeable probes and automatic parameter recognition.</p> <p>-The Winkler's titration method will be used for comparison.</p>
Turbidity	<p>-The recommended HACH 2100Q turbidometre is accurate and reliable in measuring turbidity. It is portable and battery powered; so measurements could be taken and recorded while in the field.</p> <p>-The HACH HQ30D also measures TDS (total dissolved solids) and could be ideal in case the HACH 2100Q turbidometre is not available. TDS could be used to indicate turbidity.</p>
Total suspended and volatile solids	<p>TSS and TVS could be measured either using the HACH DR 2700, DR 2800 or DR 900. The recommend HACH DR 900 is portable, LED-sourced colorimeter and it measures at wavelengths of 420, 520, 560 nd 610 nm. Measurements could be taken and recorded while in the field; eliminating the need for sample transportation.</p>
Nutrients (nitrates, nitrites, total phosphate, free chlorine, etc)	
pH, conductivity/salinity metre	The Hach HQ30D mlti-parametre is recommended.
Pathogens	<p>Pathological samples shall be taken for analysis of total coliforms and <i>Streptococcus sp.</i></p> <p>Other indicators may be selected according to the IEC's discretion and factors inherent at site.</p>

Trace metals	It is recommended that analysis for trace metals are performed by a commercial laboratory. The proponent or the IEC should collect samples, preserve and send them to a commercial laboratory (e.g. Analytical laboratory or NAMWATER).
Phytoplankton	Use a phytoplankton net to collect the samples. The samples should be analysed under a compound microscope (recommended is the Olympus type).
Zooplankton	Use a zooplankton net to collect the samples. The samples should be analysed under a light microscope (recommended is the Zeiss type).
Epi-fauna	Sample should be collected from vessel hulls or sub-merged structures as well as from rocks and soft sediments (sandy shores). Microscopes maybe required for tiny organisms.
Benthic fauna	A Van veen grab will be used to collect sediment samples. The samples should be analysed either under a light or compound microscopes (recommended is the Olympus and Zeiss type).
Sediment size analysis	Part of the sediment will be used to study grain size using the Sieving AssemblageWilson instrument.

6. ENVIRONMENTAL MANAGEMENT COMMITTEE

The shall be established an environmental management committee. There is no need for the proponent to recruit new employees as the committee will only meet on quarterly basis. For specialized environmental services, the proponent may hire IECs (independent environmental consultants) on contract basis.

Below are proposed committee members as well as required competency and responsibilities.

Table 3: composition of environmental management committee.

Personnel	Competence	Responsibilities
Environmental management representative (EMR)	Should be in employment of the proponent. Should be a senior staff member with a management position in the company.	<ul style="list-style-type: none"> ● Represent management on environmental safety and occupational issues related to mariculture farming perations. ● Provide support and avail resources needed to endorse and implement the company's environmental policy. ● Upon advice from the ESOR and IEC, the EMR may call off mariculture operations if it is suspected that impacts on the environment are more then the benefits.
Environmental safety and occupational representative (ESOR)	Should be in employment of the proponent. A minimum of grade 12, sufficient knowledge of environment, safety and ethics at work place. Preferably, a professional diver.	<ul style="list-style-type: none"> ● Represent employees' environmental safety and occupational concerns related to underwater hull cleaning operations. ● Ensure other employees comply to conditions as required in the environmental clearance certificates or permits. ● The ESOR may call off the mariculture operations if: <ul style="list-style-type: none"> -Fish cage are torn; -Accidental release of excess fish feed into seawater; -Filters or macerator/screen fails to operate; -Excessive turbidity arises from natural or other events; -Whenever untoward situation arises that may constitute a hazard on human life, environment and the equipment or other asssets.
SHREQ officer (NAMPORT representative)	Bachelor's degree or BSc. Hons. Valid competency certificates. Registration as a helath and Safety officer. Strong communication skills.	<ul style="list-style-type: none"> ● Represent NAMPORT on this committee. ● Advise the Proponent and IEC on issues related to environmental management.

<p>Independent Environmental Consultant (IEC)</p>	<p>Master’s degree or MSc. in the field of environmental or natural resources management, marine biology or water science. Knowledge of environmental impact assessment, EMP implementation and baseline environmental monitoring is compulsory. More than 10 years of field survey co-ordination and laboratory analytical skills will an added advantage.</p>	<ul style="list-style-type: none"> • The overall responsibility of the IEC is to assist the proponent in implementation of the EMP and baseline environmental plan; ensure environmental compliance and certification with GRN and MFMR policies and legislations. • IEC will advise the committee in domestication of the EMP, scientific interpretation of results from baseline environmental surveys as well as reporting.
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7. INTEGRATION OF EMP INTO COMPANY POLICY

Although companies are not required by law to have environmental policies; the proponent has opted to do this voluntarily. Below is the proponent’s policy statement:

“Blue Benguela Aqua Farming (PTY) LTD specializes in commercial mariculture operations with focus on producing higher quality fish while protecting the environment for future generations.

At Blue Benguela Aqua Farming (PTY) LTD, we are fully committed to continually improve and enhance our environmental performance. This will be achieved by complying to all statutory and regulatory requirements, monitoring and reviewing of our environmental performance.

This Environmental Policy Statement is applicable to all areas of Blue Benguela Aqua Farming (PTY) LTD and has been implemented to meet the requirements of the ISO 14001:2015.

We are committed to:

- *Prevent pollution;*
- *Protect the environment in all aspects of our business to prevent any adverse environmental effects during operations;*

- *Recycle / reuse materials wherever practical;*
- *Minimize the environmental impact, for the life cycle (including disposal) of all infrastructure, equipment, and other physical assets under our control;*
- *Comply with legislations, regulations & relevant other requirements that we subscribe to, at all times.*

Benguela Blue Aqua Farming (PTY) LTD will monitor our environmental progress in the following ways:

- *Setting Objectives and Targets that will be reviewed by management at the required and designated intervals;*
- *Management Programs for all identified high environmental processes in our operations;*
- *In the annual management review meeting, we will monitor and measure our environmental management system performance for suitability, adequacy and effectiveness.*

The management of Benguela Blue Aqua Farming (PTY) LTD commits to employ specialists, where necessary, to assist or advise with environmental matters and to ensure adherence to our Policy and Programs, and to address resulting actions identified through it.

We have included within our system measures to control abnormal and emergency situations.

This environmental policy will be communicated and made available to all our employees, sub-contractors, suppliers and all persons working on our behalf at any of our sites or client areas. This will be done to promote environmental awareness and meet our environmental objectives”.

8. MITIGATION ACTIONS

Mitigation actions that are required to reduce or minimize negative impacts are described in **table 4**.

8.1. Risk preparedness and response plan

Risk is an event that may or may not happen; whereas an impact is what will happen if a risk occurs. Risks poses a significant impact on people, the environment or and property. Although they may not happen, there is a need to be prepared to respond to risks at all times.

All response actions should be geared toward the following priorities in the order below:

- **Safety** of people (always **First**);
- **Protection** of the Environment, and
- **Protection** of Assets or equipment.

Emergence preparedness and response management involves 5 basic steps as follows:

- **Preventive actions** are taken to avoid an incident.
- **Mitigation measures** are actions taken to prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies.
- **Preparedness** increase the proponent's ability to respond when a risk occurs. Typical preparedness measures include developing method statement and emergence exit procedures, awareness and training for both response personnel and affected parties and conducting drills to reinforce training and test capabilities.
- **Response** is an action carried out immediately before, during, and immediately after a hazard impact, which is aimed at saving lives, reducing economic losses, and alleviating suffering. Response actions may include activating the emergency operations center, evacuating threatened employees or equipmwnt, opening shelters and providing mass care, emergency rescue and medical care, firefighting, and sea search and rescue.
- **Recovery**. These are actions taken to return to normal or near-normal conditions, including the restoration of basic services and the repair of environmental, social and economic damages. Typical recovery actions include debris cleanup, financial assistance to individuals, rebuilding of infrastructures and key facilities, and sustained mass care for displaced marine animal populations.

9. GRIEVANCE MECHANISM

The procedure the management will apply to deal with the employees' grievances will be enforced as follows:

9.1. Timely Action

The first and foremost requisite in grievance handling shall be immediate settlement as they arise. The sooner a grievance is settled, the lesser it will affect employees' performance. This requires the first line supervisors to be trained in recognizing and handling a grievance properly and promptly.

9.2. Accepting the Grievance

The supervisor shall recognize and accept the employee grievance as and when it shall be expressed. Acceptance shall not necessarily mean agreeing with the grievance; it rather shows the supervisor's willingness to look into the complaint objectively and dispassionately.

9.3. Identifying the Problem

The grievance expressed by the employee shall be at times simply emotional, over-toned, imaginary or vague. The supervisor, therefore, shall be required to identify or diagnose the problem stated by the employee.

9.4. Collecting the Facts

Once the problem is identified as a real problem; the supervisor should, then, collect all the relevant facts and proofs relating to the grievance. The facts so collected shall be separated from the opinions and feelings to avoid distortions of the facts.

9.5. Analysing the cause of the Grievance

Having collected all the facts and figures relating to the grievance, the next step involved in the grievance procedure shall be to establish and analyse the cause that led to grievance. The analysis of the cause shall involve studying various aspects of the grievance such as the employees past history, frequency of the occurrence, management practices, union practices, etc. Identification of the cause of the grievance helps the

management to take corrective measures to settle the grievance and also to prevent its recurrence.

9.6. Taking Decision

In order to take the best decision to handle the grievance, alternative courses of actions shall be worked out. These are, then, evaluated in view of their consequences on the aggrieved employee, the union and the management. Finally, a decision taken should best suite a given situation. Such decision should serve as a precedent both within the department and the company.

9.7. Implementing the Decision

The decision shall be immediately communicated to the employee and also implemented by the competent authority.

In case, it is not resolved, the supervisor once again needs to go back to the whole procedure step by step to find out an appropriate decision or solution to resolve the grievance.

10. EXTERNAL COMMUNICATIONS

External communications shall be handled in line with company procedures.

11. RECOMMENDATIONS

It is recommended that:

- The proponent strictly adheres to EMP and undertake baseline environmental monitoring;
- Data from baseline environmental monitoring should be kept and availed to MFMR, NAMPORT and other GRN authorities whenever requested, and
- The technology and equipment may be hired.

12. REPORTING

Baseline monitoring and environmental monitoring should be reported to MFMR, NAMPORT and other GRN authorities when requested. This should be done either by submitting quarterly or annual reports.

Table 4: EMP and mitigation.

Receiving environment	Valued environmental component	Issue	Mitigation actions	Performance indicator	Responsible institution/ personnel
Air and climate	Technosphere	Poor ambient air quality and health implications to residents due to emissions of GHGs (greenhouse gases).	<p>Avoid higher consumption of heavy diesel by MVs in order to reduce emissions of GHGs. It is anticipated that environmental regulations will at some point see fuel oils displaced in favor of supposedly cleaner fuels.</p> <p>Encourage MVs to use fuels with low carbon such as ULSD.</p> <p>Regular hull cleaning of MVs.</p> <p>Reduce vessel drag and increase fuel efficiency by regular hull cleaning.</p>	Regulations to use cleaner marine fuels.	MWTC/DMA (Ministry of works and Transport/Directorate of maritime Affairs).
		Release of dust and metals particles into the air	Grit blasting with glass beads or metal particles such as aluminum oxide, steel grit, cast iron shot, garnet and slag should be done only upon approved method statement by NAMPORT.	<p>Method statement.</p> <p>This method statement should provide SOPs, equipment used and mitigation measures to reduce environmental impacts.</p>	MFMR, NAMPORT and the Proponent.

	Air composition	Ocean acidification due to increased atmospheric Carbon Dioxide.	Reduce emission of Carbon Dioxide.	Regulations to use cleaner marine fuels.	MWT
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	Biosphere	Effects of acidification on flora and fauna	The Proponent should regularly measure pH, carbon dioxide and other indicators of acidification as may be determined by MFMR or authorizing entity.	Baseline Environment Monitoring Plan and SOPs.	IEC (Independent Environmental Consultant)
	Cryosphere	Melting of ice and sea level rise due to global warming.	Avoid higher consumption of heavy diesels by MVs and reduce emission of GHGs.	Regulations to use cleaner marine fuels. Regular hull cleaning of MVs.	MWT.
Ocean and seas	Sediment modification	Hydrodynamic vortices generated by the ROV-cart equipment.	Mariculture operations maybe be temporarily terminated if it is observed that sinking speed of feeds is faster than sea surface current velocity with a significant impact on sediment transport.	Notice to terminate port activity.	The Proponent.

	Seawater quality	Increased turbidity.	The Proponent should measure turbidity during operation and such data should be availed to MFMR or other authorized entities upon request.	Baseline Environment Monitoring Plan and SOPs.	IEC (Independent Environmental Consultant)
		Release of IAS and harmful pathogens.	The Proponent should demonstrate that the mariculture equipment and methodology used efficiently minimizes the release of excess feed into seawaters.	Baseline Environment Monitoring Plan and SOPs.	Proponent

					Proponent and IEC
		Accidental release of pollutants from maintenance operations.	The Proponent should measure trace elements before, during operation and such data should be availed to MFMR or other authorized entity upon request.	Baseline Environment Monitoring Plan and SOPs.	Proponent and IEC
		Water pollution	Removal of bio-fouling organisms from the cages and submerged structures should not be performed at sea.	Domestic and industrial waste and effluent discharge permits.	Proponent

		<p>The Proponent should remove such structures and clean them at a site on land.</p> <p>After cleaning, debris removed shall not be discarded into the sea but rather should be kept in drums and should be exposed at an approved municipal solid waste facility.</p> <p>Where needed permit to extract or discharge water will be needed.</p>		
		<p>Appoint IEC to co-ordinate water pollution and monitoring activities.</p>	IEC	Proponent
		<p>No sanding, stripping and chipping of antifouling paints may be carried out in and or during hull cleaning operations in the port's waters.</p>	Method statement	Proponent and NAMPORT
		<p>The proponent shall not perform any hull cleaning activity cages or sub-merged structures that have reached or exceeded their planned in-service period.</p>		
		<p>When the anti-fouling coating has reached the end of its service life the vessel or movable structure should be removed from the water and a new antifouling coating applied. Should the vessel require new anti-fouling coating, the activity should be carried out in a dry or floating dock facility.</p>		
		<p>No chemicals or detergents shall be released into the water, port, air and sea during mariculture operations. This includes the release of</p>		

			Tributyltin (TBT), which is a common constituent of ship paints.	
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Land and seabed	Sediment transport and morphology	Sediment modification will negatively affect the environment.	Monitor sediment characteristics and benthic fauna.	Baseline Environment Monitoring Plan and SOPs.	Proponent and IEC
	Waste pollution	Disposal of waste	Waste generated may only be disposed in a manner as prescribed in relevant policies and legislations. The proponent should submit to MFMR a method statement detailing on how waste will be managed.	Method statement.	Proponent

	Land use	Port Authority	<p>No mariculture operations shall be performed without written authorization from NAMPORT. This authorization should be granted on a vessel to be used and per quay berth where the vessel is docked.</p> <p>NAMPORT will do this in strict compliance and adherence to conditions in the ECC and any conditions imposed by MFMR or other relevant authorities.</p> <p>The Proponent may not enter the port without this authorization.</p>	<p>Written permission to undertake mariculture activities.</p> <p>Port entry register.</p>	NAMPORT
		Potential conflict use	<p>The proposed areas where mariculture operations will take place shall be identified in advance. Mariculture operations may not be undertaken at the expense of other users.</p>	Port map.	Proponent

Ecology and biodiversity	Effect on local biodiversity	Bio-fouling organisms	The Proponent shall submit the monitoring plan and SOPs to MFMR or NAMPORT detailing how pollution will be prevented and mitigated.	Baseline Environment Monitoring Plan and SOPs.	Proponent
		IAS and pathogens	The proponent should submit a monitoring plan and SOPs detailing how IAS and pathogens will be monitored and mitigated.	Biosecurity Risk Assessment Plan and EMP	

	Ecosystem diversity	Ecologically sensitive areas	Mariculture operations should only be permitted in areas for which permission is granted; these areas specifically exclude ecologically sensitive areas.	Map of ecologically sensitive areas	Proponent
Human environment	Safety of life at sea	Occupational safety and public health.	<p>Prior to mariculture operations, the Proponent shall submit occupational safety plan detailing how safety and occupational issues will be dealt with while working at sea.</p> <p>Among others, occupational safety plan should provide details on how CVDs (cardio-vascular diseases) and communicable diseases (including COVID-19) will be dealt with among different employees.</p>	Occupational health safety plan and EMP	Proponent
		Diving	Terms and conditions of the ECC and Aquaculture licence should be read in conjunction with the Diving License conditions.	Diving license	Proponent
		Vessel preparation	Ensure the main engine and any relevant auxiliary engines must be isolated and not be operated for the duration of each mariculture activity. All costs related to the activity and any movement of vessel shall be for the account of the vessel.	Method statement	Vessel owner and Proponent.
		Injury on duty (IOD)	Any IOD or fatality to employees or third party, shall be reported to NAMPORT without delay and to any applicable statutory body within the required time-frame.	Accident report	Proponent

		Reporting of incidents	<p>The proponent shall:</p> <ul style="list-style-type: none"> a) Report to competent authorities any incidents that result or could result, any environmental impact and any activity that may remotely affect the operations of the port. b) Not undertake any modification of the authorized equipment, of whatsoever nature, unless approved in writing by all relevant Authorities and such approvals provided to NAMPORT. 		
		Termination of hull cleaning	MFMR, NAMPORT, DMA, EC/DEA, DWA or any other duly authorised entity may terminate mariculture operations immediately upon receipt of notification to do so.	Notice to terminate mariculture operations.	MFMR, NAMPORT, MWTC/DMA, EC/DEA, DWA
Production system and technology		Removal of macrofouling organisms of domestic or international origin	Mariculture production systems and technologies should aim to, at least, organisms of a certain size (diameter) in order to minimise release of viable adult, juvenile and larval stages of finfish.	SOPs for mariculture operation from countries which are successful in mariculture.	Proponent

		<p>Release into water of macro-fouling organisms of domestic or international origin</p>	<p>The Proponent should avoid accidental removal of anti-fouling paint that may contain TBT (tributyltin) and TPhT (triphenyltin).</p> <p>The following vessels may not be cleaned while underwater:</p> <ul style="list-style-type: none"> ○ MVs that were painted 10 years ago as there is a higher risk of removing painting materials; ○ MVs that frequently visit/enter ports known to be 'hotspots' of IAS and pathogens, and ○ Vessels that had been denied entry into other ports for environmental violations. <p>□ The proponent may only be allowed to clean aged MVs while on dry dock where old paint could be removed and properly disposed.</p>	<p>Pre-cleaning inspection report and SOPs.</p>	<p>Proponent</p>
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		Hull clear equipment	<p>The proponent is limited to the use of equipment that are:</p> <ul style="list-style-type: none"> a) The same technology as demonstrated when applying for the hull cleaning authorisation and permit, b) Where the equipment efficacy is proven and approved by relevant/competent authority and are marked with a safe working load and or is capable of being recovered in case of remote failure; c) In good operating and maintenance conditions in accordance with statutory standards and duly licensed by the appropriate regulatory body, operated by competent and adequately trained and certified staff. 	SOPs for underwater cleaning using ROV-cart	Proponent

		Calibration and servicing of the equipment	Calibration and servicing of the equipment should be done as prescribed by equipment manufacturers.	Equipment calibration certificate and service plan	Proponent
		House keeping	All equipment used during the performance of hull cleaning activities should be removed from wharfs, quays, jetties and other work places in the Port without delay immediately after the hull cleaning activities are completed on a particular vessel, or within such extended time as the Authority may allow, on good cause shown.	Cleaning operation exit plan.	Proponent
		Inspection and compliance	The proponent shall have written safety, health and occupational plan as well as environmental certifications, SOPs and method statements in place at all times and shall make these available to NAMPORT or relevant Authority for inspection upon request.	Baseline environmental monitoring plan	Proponent

Table: baseline environmental monitoring plan.

Activity	Description	Frequency	Responsible
<p>PRE-CLEANING INSPECTION REPORT</p>	<p>Upon booking of cage and other equipment for in cleaning the following information should be obtained:</p> <ul style="list-style-type: none"> • Make and composition of paint on hull and date when painted. • Duration in water. • Date of last cleaning. 	<p>All cleaning operations.</p>	<p>Proponent/IEC.</p>
<p>Emergency response equipment</p>	<p>Ensure all emergency response equipment are mobilized and in working conditions.</p>	<p>All MV cleaning operations.</p>	<p>Proponent - land based crew</p>
<p>Solid waste debris</p>	<p>Ensure that all solid waste is contained within containment drum:</p> <ul style="list-style-type: none"> • Add probiotic if required. • Ensure labelling is completed and in order. • Seal drum. <p>Ensure collection by registered waste operator and transfer to Municipal approved landfill site.</p>	<p>All cleaning operations.</p>	<p>Proponent - land based crew.</p>

BASELINE ENVIRONMENTAL MONITORING	Specific analysis of water quality and operations is to be undertaken at individual stations using the multi parameter probe as well as taking samples for further analysis as per SOPs. This data is to be recorded as per station and will act as a record of findings on that vessel.	Every 4 months	IEC
	All sampling requiring laboratory analysis should be transferred to commercial/accredited laboratory under instruction of IEC.	Every 4 months	IEC
MONITORING REPORTS	Present/submit report on analysis on 7th day of every quarter after analysis to Harbour Master.	Every 4 months	Proponent

