Appendix 2B

Construction and Environmental Management Plan (CEMP)

Contract Title:
Ros An Mhil DWQ

Document Title:
Construction Environmental Management Plan

Date: 30.06.2024

Prepared for:
Department of Agriculture, Food and Marine (DAFM)

Prepared by:
Ward & Burke

Document Number:

ENV-00 CEMP

Project Information

Project Title	Ros An Mhil DWQ
Project Code & No.	C755 ROSSAV
Location	Rossaveel, Co. Galway
Client	Department of Agriculture, Food and Marine (DAFM)
Consulting Engineer	GDG (Gavin & Doherty Geosolutions)
Document No.	ENV-00
Document Title	Construction Environmental Management Plan

Document Revision Record

Status	Rev	Date	Originator	Checker	Approver	Issue Description
S3	P01	20.05.22	Emma Murphy	Colin Kelly	Michael Mannion	Initial Release for contract
S3	P02	15.04.23	Emma Murphy	Colin Kelly	Michael Mannion	Revised to ensure compliance with all works on site
S3	P03	17.08.23	Emma Murphy	Colin Kelly	Michael Mannion	Revised to ensure compliance with all works on site
S3	P04	20.02.24	Emma Murphy	Colin Kelly	Michael Mannion	Revised to ensure compliance with all works on site
S3	P05	30.06.24	Emma Murphy	Colin Kelly	Michael Mannion	Reviewed for temporary close of site- May 2024

Content Section	Title	Revisions		
		Rev. Status	Rev. Date	Description of Amendments
1.0	Contents	0	Jan 2023	Initial release for contract
2.0	Introduction	0	Jan 2023	Initial release for contract
3.0	Environmental Project Management	5	June 2024	Initial release for contract
4.0	Auditing	0	Jan 2023	Initial release for contract
5.0	The Legislative Framework and Best Practice	0	Jan 2023	Initial release for contract
6.0	Project Specific Environmental Issues and Controls	0	Jan 2023	Initial release for contract
7.0	Avoiding Public Nuisance	0	Jan 2023	Initial release for contract
8.0	Flora, Fauna and Invasive Species	0	Jan 2023	Initial release for contract
9.0	Monitoring and Sampling	0	Jan 2023	Initial release for contract
10.0	Emergency Response and Incident Reporting	0	Jan 2023	Initial release for contract
11.0	Waste Management	0	Jan 2023	Initial release for contract
12.0	Training, Communication, Awareness and Competence	0	Jan 2023	Initial release for contract
13.0	Bio security Management	0	Jan 2023	Initial release for contract
14.0	Complaints Procedure	0	Jan 2023	Initial release for contract

APPENDICES:				
Procedure Reference	**Procedure Title**	**Rev. Status**	**Date**	**Description of Amendments**
ENV-01	Roles and Responsibilities	0	Jan 2023	Initial release for contract
ENV-02	Awareness & Training	0	Jan 2023	Initial release for contract
ENV-03	Environmental Emergency Response	0	Jan 2023	Initial release for contract
ENV-04	Record Keeping, Auditing and Monitoring	0	Jan 2023	Initial release for contract
ENV-05	Environmental Complaints Procedure	0	Jan 2023	Initial release for contract
ENV-06	Good Site Housekeeping and Construction Best Practice	0	Jan 2023	Initial release for contract
ENV-07	Surface Water Management Plan	0	Jan 2023	Initial release for contract
ENV-08	Fuel Management Plan	0	Jan 2023	Initial release for contract
ENV-09	Contaminated Material Plan	0	Jan 2023	Initial release for contract
ENV-010	Protection of Flora and Fauna	0	Jan 2023	Initial release for contract
ENV-011	Invasive Species Management	0	Jan 2023	Initial release for contract
ENV-012	Protection of Archaeological and Cultural Heritage	0	Jan 2023	Initial release for contract
ENV-013	Noise and Vibration Management Plan	0	Jan 2023	Initial release for contract
ENV-014	Air Quality Management Plan	0	Jan 2023	Initial release for contract
ENV-015	Waste Management Plan	0	Jan 2023	Initial release for contract
ENV-016	Traffic Management Plan	0	Jan 2023	Initial release for contract
ENV-017	Marine Traffic Plan	0	Jan 2023	Initial release for contract

This Document should be read in conjunction with the following:

- Contract Environmental Impact Statement
- Planning Documentation and Drawings
- GDG Outline CEMP
- Ward and Burke Environmental Policy
- Baseline Questionnaire
- Aspects and Impacts Register

Section 2 | Introduction

2.1 Overview and Objectives of the CEMP

This Construction Environmental Management Plan (CEMP) plan has been prepared to detail how Ward and Burke will manage environmental aspects of proposed works on the Ros An Mhil Deep Water Quay Contract.

2.2 Nature and scope of work:

The proposed deep-water quay will provide 200m of outside berthing frontage at Ros An Mhíl Harbour. The development will also incorporate dredging works and land reclamation directly to the rear of the deep-water quay which will provide a hard surface link to the existing lands onshore. The development also includes a rock armour revetment, access roads, lighting, drainage infrastructure and other ancillary site works. The proposed layout plan is presented in **Error! Reference source not found.**.

Figure 1 - Proposed Site Layout

The site extends to include all elements of the development including ancillary and temporary works areas also, such as dredge areas and proposed contractor compound areas. The full extent of the development comprises the following structures and works. In the interests of clarity, these are listed generally in the order in which they will be undertaken / implemented:

There are two distinct strands of work, which have been contractually tendered together but form the essential parts of the proposed construction works, as follows:

1. Dredging Works – including drill and blast techniques, and follow-on recovery of the blasted materials for re-use as recoverable infill materials for use in the reclamation works and hinterland behind the new quay wall.

2. Marine Civils Works – including detailed preparation of the seabed, placement of the concrete gravity structures and the overall gravity quay wall solution. Final infilling can then proceed after the quay wall is built, with surfacing and construction of the main elements comprising the marine infrastructure including provision of services, drainage and quay furniture.

The dredging works are essentially required to precede the main quay wall construction as they include dredging of the seabed to -10mCD and preparing the seabed and navigable areas prior to the quay wall works commencing. However, there is a requirement for progress to be made in compliance with the planning permission for the scheme so the initial phase of works comprises infilling from land to create the reclamation zone.

The works consist of the following key elements of work:

- Construction of a 200m long quay wall using relatively large-scale concrete gravity components called caissons, which form a continuous berthing face.
- Reclamation of circa 2.7 hectares immediately behind the quay wall which will link the existing onshore components of Rossaveel Fishery Harbour Centre (FHC) to the new quay.
- Associated dredging including a 30m wide x 200m long berth pocket dredged to achieve a minimum level of -10m CD (Chart Datum), and dredging of a navigation channel and turning circle of minimum 150m diameter to achieve a minimum level of -7m CD. Given the that ground conditions on site are dominated by the presence of very strong granite, dredging works will comprise 'drill and blast' techniques to achieve the levels stated. It is expected that blasted rock can be re-used as part of infill materials needed to form the new reclaimed hinterland area behind the new quay wall.
- The new marine infrastructure will be appropriately surfaced and finished with various facilities to make it useable for marine operations, including:
    - Services including electricity, power and new drainage infrastructure, both to collect and filter surface water, oils and discharge materials from the fishing industry, as well as quay wall drainage.
    - Fendering and mooring bollards to allow safe berthage and mooring of vessels.
    - Safety equipment such as ladders, life-rings, etc.

A detailed development description is provided for in Section 3 of the Planning Report submitted with the planning application.

Ward and Burke Construction Limited (WBCL) seek to achieve the highest standards of environmental performance on this project. The CEMP document forms the basis for the implementation, review, control and continuous improvement of project environmental management. Adherence to the procedures contained within it will ensure that the highest standards of environmental management are implemented and maintained on the project.

The objectives and targets of this CEMP are:

- To set out the responsibilities, roles and key actions required for the successful implementation of best practice environmental management on the project
- Ensure compliance with WB IMS_ISO 14001
- Ensure compliance with WB EMS_ISO 50001
- Set out the responsibilities of the Site Team
- Management the Environmental Management and control measures in line with the contract Biodiversity Plan, Monitoring plan, Invasive Species Management Plan, specialist guidance and guidelines
- Detail training and awareness programme to be carried out on the contract
- To maximise potential benefits of the proposed works
- To identify potential negative impacts
- To set out specific mitigation measures for these impacts
- To provide guidance on compliance with accepted best practice standards
- To inform all parties of environmental sensitivities of site
- To guide works toward best environmental practice at all times
- To provide protection of the site and environs during and after works
- Adhere to Ward and Burke Energy Efficiency and Sustainability plans
- Proposal on plans for monitoring on site
- Detail auditing and inspection requirements
- Detail the management of contract records
- Management of Non-Compliances and Enduring corrective actions and continual improvements;
- Proposal on the management of sub-contractors
- To ensure compliance with accepted best practice standards.

2.3 Environmental Management System Policy, Scope and References

Management system references

The section below shows how the requirements of BS EN ISO 14001:2015 will be fulfilled. The objective of this process is to provide guidance to the organisation, project teams and Head Office staff in the development of CEMPs and WMPs and to ensure a consistency of approach throughout Ward & Burke in respect to Environmental Management and its compliance to BS EN ISO 14001:2015.

Environmental Policy

WB Environmental Policy is relevant to the type of work carried out by Ward & Burke and is endorsed by senior management and signed by the Managing Director. The environmental policy, together with the management system allows us to achieve the highest standards of environmental management and minimise environmental impact. The policy is also communicated to those organisations working on behalf of Ward & Burke.

Energy Policy

WB Energy Policy is relevant to the type of work carried out by Ward & Burke and is endorsed by senior management and signed by the Managing Director. The energy policy, together with the management system allows us to achieve the highest standards of energy management and minimise environmental impact. The policy is also communicated to those organisations working on behalf of Ward & Burke. The Energy Policy is in line with ISO 50001:2018 requirements.

Sustainability Policy

WB Sustainability Policy is relevant to the type of work carried out by Ward & Burke and is endorsed by senior management and signed by the Managing Director. The sustainability policy, together with the management system allows us to achieve the delivery of sustainable work inline with UN Sustainability Goals and minimise environmental impact.

Project Specifics

A Site Environmental Management File (EMF) will be prepared for the project detailing the means by which the protection of the environment and compliance with legislative and other requirements will be met, in particular:

- Environmental Impact Statement
- Planning Requirements and documents
- GDG Outline CEMP
- All Enviro Procedures:

ENV-01	Roles and Responsibilities
ENV-02	Awareness & Training
ENV-03	Environmental Emergency Response
ENV-04	Record Keeping, Auditing and Monitoring
ENV-05	Environmental Complaints Procedure
ENV-06	Good Site House-Keeping and Construction Best Practice
ENV-07	Surface Water Management Plan
ENV-08	Fuel Management Plan
ENV-09	Contaminated Material Plan
ENV-010	Protection of Flora and Fauna
ENV-011	Invasive Species Management
ENV-012	Protection of Archaeological and Cultural Heritage
ENV-013	Noise and Vibration Management Plan
ENV-014	Air Quality Management Plan
ENV-015	Waste Management Plan
ENV-016	Traffic Management Plan
ENV-017	Marine Traffic Plan

It will also include:

- Adhering to guidance from all Specialists:
    - Marine Mammal Observer
    - Ecologists
    - Dredging and Blasting Specialist
    - Invasive Species Specialists (As required)
    - Noise and Vibration Specialist (As required)

- Permit, licences, and other applicable legislative requirements for that facility.

- Communication and training programmes to encouragement staff to be aware of the environment and the sustainability. E.g Energy Awareness, Waste Reduction, Emission Reduction, Pollution reduction or prevention etc.

Summary of Environmental Management Process

The Environmental Management Process defines the environmental management requirements for Ward & Burke and provides links to other key documents defining the systems, controls and forms to be used. All environmental documentation may also be accessed via SHAREPOINT.

The responsible Site Manager or Agent will ensure all external organisations responsible for any works which could have an environmental impact on their site are involved in the Site Waste Management

Plan for the project including a review of their management documentation such as risk assessments and method statements.

Environmental Records

In order to demonstrate compliance with legal and other stakeholder requirements, and with the Environmental Management Plan, it is essential that all appropriate records are maintained / archived in a logical manner so that they can be retrieved at a later date if required. The structure of the site Environmental Management File is defined in an Index document. All records to be as per Ward and Burke Document Management system.

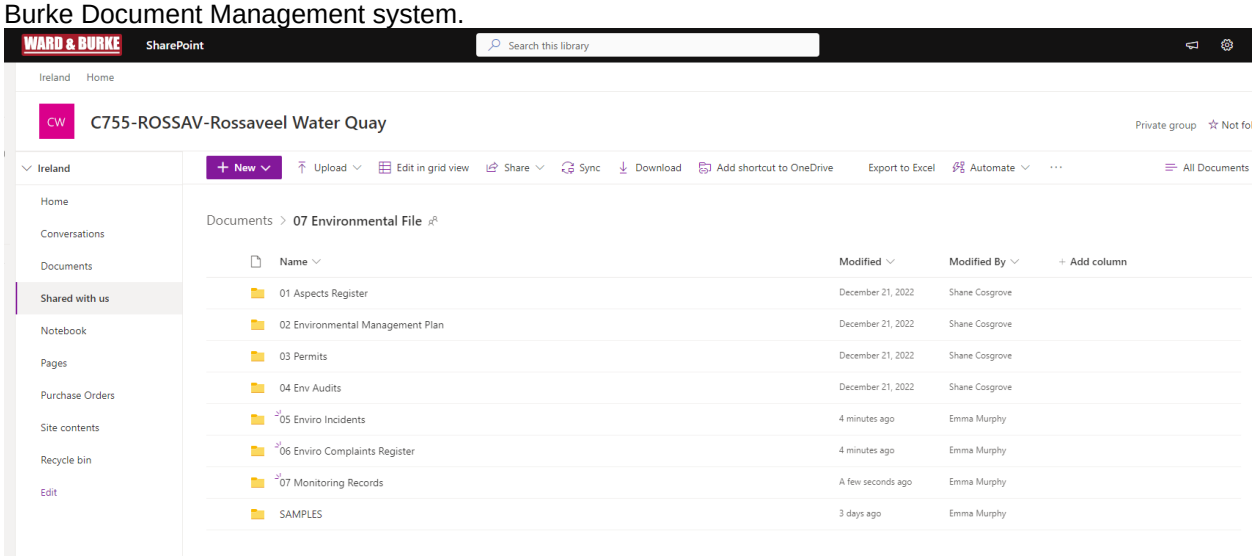

Figure 2 - Ros An Mhil DWQ - Sharepoint Contract file - 07 Environment

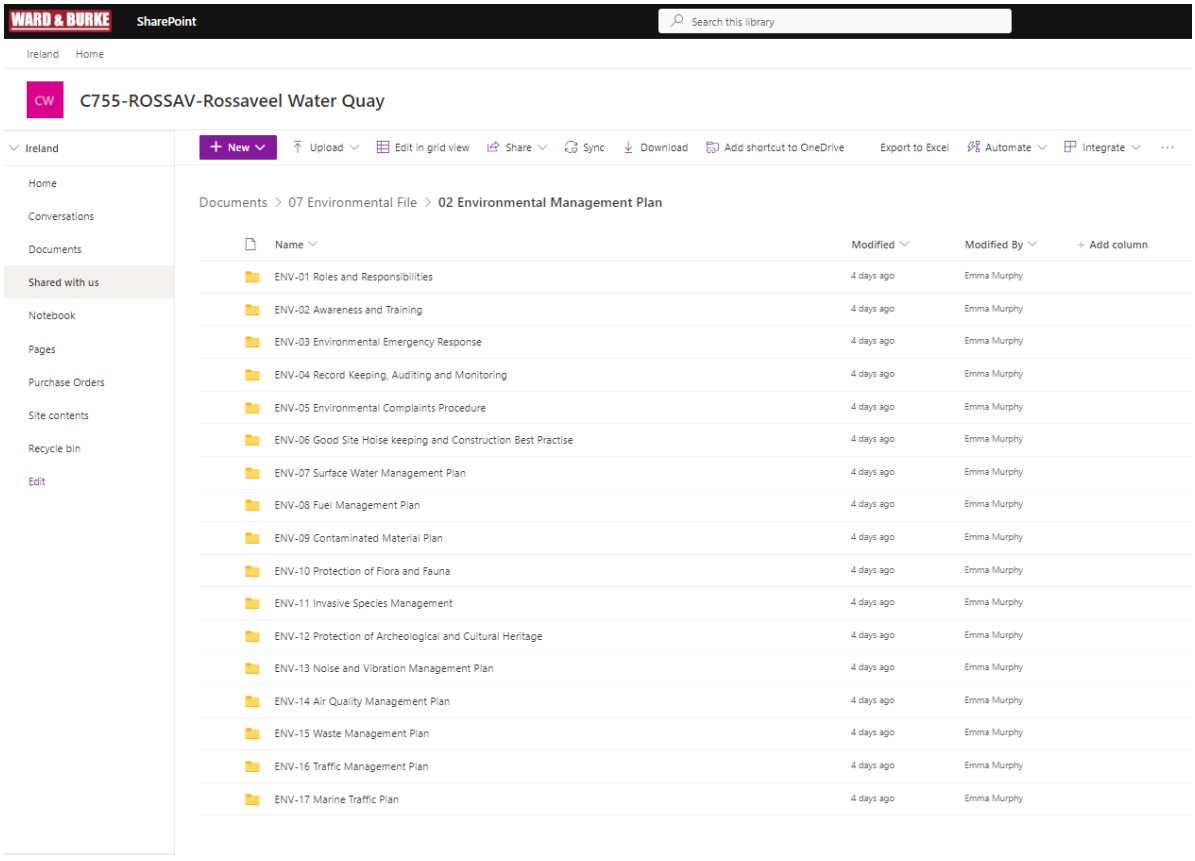

Figure 3 - CEMP and Appendices

Example of records to be kept on site:

- Sampling and Monitoring records
- Stakeholder and Specialist Communications Records
- Environmental Incident Form
- Monthly Environmental Compliance Reports
- Environmental Training Records
- Register of environmental training
- Register of environmental complaints
- Corrective Action Reports
- Environmental inspection and audit reports
- All monitoring data (electronically in Excel)
- Waste Record Sheets
- Safety Data Sheets
- Chemical Inventory.

Environmental Incident Reporting

Any unplanned event that harms, or has the potential to harm, the environment or breaches environmental legislation/ requirement must be fully investigated in accordance with the investigation and reporting procedures WBIE-0617-01.

Reporting of Environmental Incidents is as important as reporting of Safety Incidents and the process described in WBCL's SHEQ incident & Accident reporting procedure must be followed. This will allow uniformity between all sites.

- *Reference Emergency Incident Response Plan (EIRP)*
- *Reference WB-0705-01 Environmental Incident Reporting Form*

Summary of Environmental Actions and Documents

Ward & Burke Environment Policy

The W&B Environmental Policy will be displayed where appropriate and communicated.

Ward & Burke Energy Policy

The W&B Energy Policy will be displayed where appropriate and communicated.

Ward & Burke Sustainability Policy

The W&B Suitability Policy will be displayed where appropriate and communicated.

Environmental Appointments

All environmental processes will be dealt with by the site team with support from the SHEQ Advisor. Biosolids contract will have a full time Environmental Manager on site.

Initial Project Assessment

The initial project assessment classifies all the environmental aspects on WBCL Aspect Register taking into account the anticipated operations and both the workplace and surrounding environment.

Aspect and Impacts Control Register

The Aspect and Impact register template identifies all environmental aspects and impacts and identifies mitigation measures. These measures will be delivered in form of toolbox talk, client progress meetings, inductions etc. This register will also identify responsibilities for individual mitigation measures.

[1]SHAREPOINT is Ward and Burke Construction Ltd's internet-based Document Control System, accessible by the whole company

Waste Management Planning
The Site Waste Management Plan will detail the project waste targets and responsibilities for waste disposal. All waste transfer document e.g. transfer notes/ consignment notes will include the European Waste Code of any waste transfer being made. A list of all permit/ consents/ exemption and licences must be maintained and kept in the Environmental management file.

Objectives & Targets
The Environmental Objectives & Targets are agreed by the senior management and this must be adhered to. All operations will align themselves with these objectives.

Emergency Response/ Action Plans
For each project, potential emergency situations or accidents will be identified with appropriate action plans prepared. This is written in the emergency preparedness and response document which must be communicated and periodically tested, reviewed and modified as appropriate.

Environmental Monitoring, Measuring, Inspection & Audit
Specific monitoring arrangement, where appropriate, will be identified within the CEMP (e.g. water quality sampling, dust monitoring etc.). A regular review of all applicable permits/ licences e.g. waste carrier/ management licences shall be made for legal compliance. Bi - weekly inspection will be completed on the standard HS&E template forms.

Non-conformance, Corrective & Preventive Actions
Non-Conformances will be captured on site and records of same will be populated for tracking.
Corrective and Preventative actions will be put in place to prevent reoccurrence on site.
Trends will be monitored on site on the NCR dashboard for the site.

Environmental Training, Awareness & Competence
Training constitutes a fundamental element in ensuring environmental performance improvement; the effectiveness for any system to improve performance is dependent on the adequacy of information held and the application of that information by all personnel. All personnel working for or on behalf of Ward & Burke will have the appropriate awareness and competence to meet the requirements of the Environmental Management Process.

- Personnel fully aware of the Ward & Burke Environmental Policy and Energy Policy
- Personnel fully aware of potential environmental impact of their work and associated environmental issues
- Individually and collectively, personnel are committed to leading environmental management and practices
- Effective communication within the organisation on any environmental issues
- Training and Awareness of works and control measures from specialist and stakeholders (DAFM, EPA, NPWS, Planning Authority)

Communication

Internal Communication:

Each construction site shall put in place the appropriate mechanisms to ensure that internal communication and awareness on Environmental awareness and management between the various levels takes place regarding but not limited to:

- *Site Inductions (Including planned control measures around the biodiversity value of the surrounding landscape, particularly working adjacent to water)*
- *Shine training and quizzes*
- *The Aspect and Impacts register*
- *Environmental complaints and Incidents*
- *Change in the Environmental Management System*
- *Audit results and trends*
- *Results of management review*
- *Feedback on site inspections and audits*

- *Par take in environmental work shops and campaigns on site*
- *Objectives and Target results*
- *Toolbox talks & SHEQ Bulletins*

External Communication:

Ward and Burke will be required to consult with state bodies in relation to Environmental Matters.

This will include consultation with, but not limited too:

- DAFM – Department of Agriculture, Fishing and Marine
- Marine Mammal Specialist
- Archaeologist Specialist
- Water Quality Monitoring companies
- Noise and Vibration Monitoring companies
- Harbour Masters
- National Parks and Wildlife Services
- Inland Fisheries Ireland

In relation to Construction Methodologies and suitable control measures for environmental management on site.

Section 3 | Environmental Project Management

The CEMP forms part of the overall project management documentation for the project and as such the activities described will be integrated with the Contractor's other management processes such as environmental management, quality management, emergency procedures and health and safety tying in with WBCL's Safety, Health, Environmental and Quality (SHEQ) Management System, which is accredited to ISO 45001, ISO 14001, ISO 9001 and ISO 50001. In addition, the management of sustainability is a focus of the plan. This will be implemented on the project using best practice sustainability guidance, such as the BSI PAS 2080:2016 Standard, as WBCL drive towards full ISO 50001 accreditation.

Environmental responsibilities and duties will be undertaken by various personnel throughout the duration of the project. WBCL will appoint a full-time site Environmental Management and SHEQ Advisor working under the direction of the company SHEQ Director. In addition, an SHEQ compliance auditor will regularly audit the project to ensure that best practice environmental management is being maintained.

3.1 Project Site Environmental Team (REF ENV-01 Roles and Responsibilities):

Main Civils & Capital Dredging Works for Ros an Mhíl Deep Water Quay (DWQ), Ros an Mhíl (Rossaveel) Fishery Harbour Centre, Co. Galway

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

WARD & BURKE

Environmental Delivery Team (Jan 2024)

Department of Agriculture, Food and the Marine Client	**Ward and Burke Construction** PSCS & Contractor	**Marine Mammal Specialist Catherine Sullivan**	**Invasive Species Specialists** Flynn Furney Env. Consultant	**Archaeologist** Maritime Archaeology- ADCO	**Noise & Vibration Monitoring** NVM	**Bathymetry** Geomara	**Rock Blasting & Specialist** Carra Plant Hire
Kevin O'Brien	Michael Mannion Emma Murphy	Catherine Sullivan	Simon Furney (If Required)	Niall Brady	Noel Carr	Client appointment – Hydrosurvey	Declan Maher

MONITORING TEAM

Department of Agriculture, Food and the Marine	**Ward and Burke**	**Marine Mammal Observer**	**Invasive Species Specialists**	**Archaeologist**	**Noise & Vibration Monitoring**	**Bathymetry**	**Rock Blasting & Specialist**
Resident Engineers	Emma Murphy	Catherine Sullivan	Simon Furney	Niall Brady	Noel Carr	Client appointment – Hugh Power	Declan Maher
• Monitor compliance with contract requirements • Monitoring compliance with planning requirements • Monitoring compliance with all Contract Environmental Documentation	• Ensure compliance with contract requirements • Ensure compliance with planning requirements • Ensure compliance with all Contract Environmental Documentation • Ensuring guidance from specialist adhered to on site • Ensure site teams aware of all environmental controls and adherence to same • Raise and close out any non conformities	• Provide guidance and suitable control measures for works on site for all blasting and dredging works • Monitoring works against Planning Requirements/CEMP /License/ RAMS Documents • Monitoring compliance with control measures on site • Suggest implementation of additional control measures as seen fit • Develop reports	• Giving guidance on correct and suitable controls in works around any Invasive Species if found on site.	• Complete assessment on underwater/maritime/marine dredging works • Monitoring compliance with planning requirements • Monitoring compliance with contract requirements • Monitor works on site • Develop reports	• Set up of equipment for noise and vibration monitoring as required. • Monitoring compliance with contract requirements • Develop reports	• Complete survey on the Sea level to ensure correct design and works planned on site	• Provide Work methodologies and suitable environmental control measures on site for works • Monitor works • Adhere to WB Enviro Control Measures • Ensure environmental compliance • Report any incidents on site to WB Site Management

STAKEHOLDERS

- An Garda Síochána
- Galway County Council
- Harbour Master
- Aran Island Ferries
- Irish Coast Guard
- Udaras na Gaeltachta
- Rossaveel Ferry
- Charter Island
- Iasc Mara Teoranta
- Local Landowners
- Local Residents
- Business Traders
- Individuals
- Utility Providers: EIR / Enet / ESB / Virgin Media / GNI / etc
- Department of the Environment, Community and Local Government

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Key roles and responsibilities for Environmental Management on the project are shown below:

Team Member	Responsibilities
Contractors Lead: General Responsibilities	Assume role of a Project Environmental Representative Overall responsibility for environmental management on the site Ensuring there is regular communication with the Client and relevant statutory and non-statutory bodies on environmental matters as necessary.
Environmental Manager: Specific Environmental Responsibilities	Hold responsibility for the development, updating and reviewing of the CEMP throughout the construction period Advising the construction team and workforce on best practice to minimise the impact of the works on the environment Ensuring the environmental procedures are adequate & appropriate Ensuring the environmental procedures are adhered to on site First point of contact for the client in relation to Environmental aspects Chair regular meetings of the environmental team and site management Keeping stakeholders informed of ongoing activities that may affect them Logging stakeholder enquiries/complaints & deal with directly or pass to the relevant party for action Ensuring adequate environmental protection measures are included in method statements Ensuring there is a regular review of the environment commitments with the Site Engineers and Foremen Ensuring adequate environment briefings are carried out prior to all activities Carry out regular Inspections and Audits on site

	Ensuring appropriate Toolbox Talks are given to the workforce as required Management of waste on site and updating of the site waste management plan. Assume the role of Environmental Co-Ordinator, acting as the focal point of contact for all environmental issues on site The delivery of environmental training, as necessary to the workforce Manages environmental specialists Monitoring compliance of construction activities with the CEMP & environmental legislation/licences.
Site Engineers	Managing method statements and work plans in relation to environment aspects, and ensure that method statements & control measures are implemented Contribute in developing the CEMP; Implementing any on-site actions required from audits or other environmental observations Monitoring and supervising construction activities.
Foremen	Supporting the Environmental Manager in delivery of the environmental components of the works Recording the progress of environmental works Monitoring/supervising construction activities Carrying out audits as required by the CEMP. Implementing any on-site actions required from audits or other environmental observations Deliver Toolbox Talks on environmental issues
Environmental Specialists	Specialists such as marine mammal specialist, Archaeologist, Noise and Vibration Monitoring, Water Quality Monitoring
Waste Duty Holder	Waste Management will be carried out in accordance with the project specific procedure. A Minimum of two Waste Duty Holders shall be trained and appointed for the duration of the project. Their responsibilities include:

	Correct handling of all waste management documentation Where appropriate, ensure sub-contractors method statements include waste disposal methods Make him/herself aware of legislation, codes of practice, guidance notes and good environmental working practice relevant to his work. Take advice from the Environmental Advisor in these circumstances Carry out audits on subcontractors waste management practices Ensure waste on site is stored and handled correctly Ensure waste is segregated and skips labelled correctly Carry out checks on waste carriers and disposal sites Source to Destination checks on waste Retain Waste Transfer Notes (WTN) and Hazardous Waste Consignment Notes (HWCN) in waste file for requisite period post-construction Ensure completion of the project waste register.
Employees	Comply with directions and requirements given in the site induction Proactively approach environmental issues whilst on site Report any environmental incidents/near misses immediately to the supervisor or SHQE Advisor Carry out all activities in line with the environmental procedures and requirements detailed in the EMP.
Sub - Contractors	Comply with directions and requirements given in the site induction Follow control procedures as instructed Be inducted on site Environmental Management at induction stage Be issued SH Plan , Environmental Management plan at time of appointment and their responsibilities on site Carry out all activities in line within environmental procedures and requirements detailed in the EMP

	Report any environmental incidents/near misses immediately to the Project Manager or SHQE Advisor. Be audited for Environmental Compliance

Section 4 | Auditing

WBCL will appoint a full time Environmental Manager within their team, whose duties will include responsibility for auditing the CEMP on a monthly basis for the duration of the project, reporting to the Contractors Lead.

Copies of environmental site inspection reports and audits will be stored within the *SHAREPOINT* system for site filing, and maintained throughout the duration of the construction period and beyond as required.

The mitigation measures themselves will be implemented and checked by appointed site personnel together with specialist advisors and will be overseen by the Environmental Manager (full time on site) and SHEQ Director (visiting).

The auditing process will ensure that the CEMP is being implemented correctly, that method statements are being followed, that checks are being carried out where necessary and that records of these actions are made. It will also ensure that the CEMP is achieving its objectives, and if it is not, measures can be taken to ensure that it does achieve its objectives.

In summary, WBCL's environmental auditing process on this project will involve the inspection of works on site and the inspection of paperwork in the Site Office. This includes the monitoring of waste management – Segregation, Recycling etc.

All paperwork is checked in site offices such as Waste Collection Permits, dockets for waste off site etc to ensure it is in line with the site specific CEMP and Waste Management Plan. All information is to be regularly uploaded to *SHAREPOINT*. Documents are cross referenced on site to ensure compliance from an operational point of view.

Non-conformance, Corrective & Preventive Actions

Non-Conformances will be captured on site and records of same will be populated for tracking.

Examples of non-conformances that may arise on site:

- Non-compliance with legal requirements
- Non-compliance with WB Integrated Management System
- Non-compliance with contract requirements
- Non-compliance with environmental controls on site
- Non-compliance with the CEMP
- Issues with documentation or records on site.

Corrective and Preventative actions will be put in place to prevent reoccurrence on site.

Trends will be monitored on site on the NCR dashboard for the site.

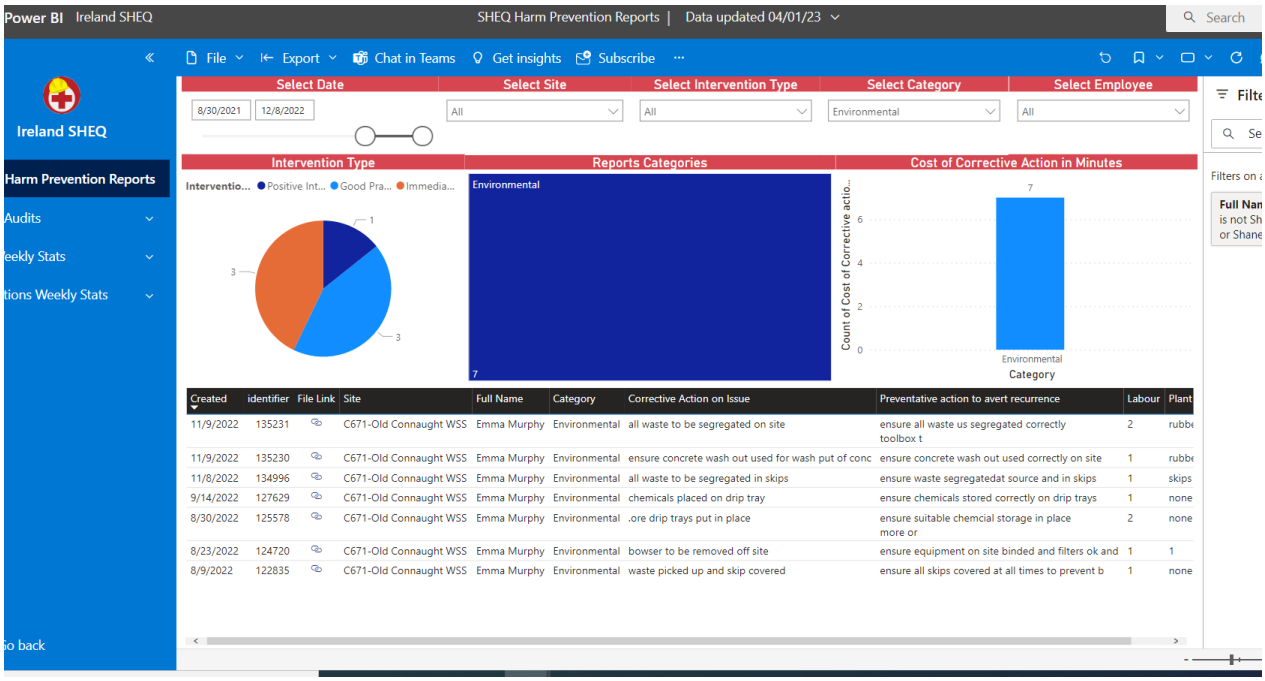

Figure 4 - Screenshot of NCR Dashboard

Section 5 | The Legislative Framework and Best Practice – Implementation at Site

WBCL at all times seek to comply with, and where possible exceed, the requirements of all Environmental and Waste Management legislation and best practice. A number of the relevant legislative acts in regard to Environmental Management that relate to this project are listed below.

Ward and Burke use Red on line to ensure legal compliance.

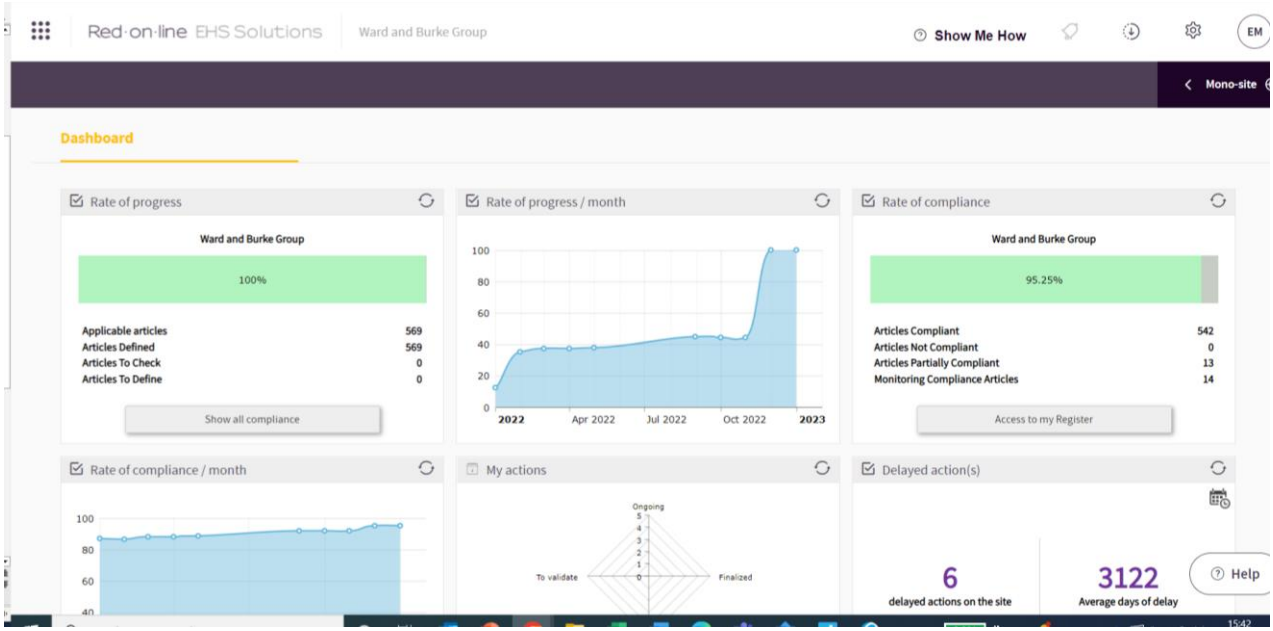

Figure 5 - Ward and Burke Legal Register Dashboard

- Legislation will be identified in relation to area.
- The legislation will be ticked to include in compliance overview.
- A question and answers questionnaire will be included to evaluate compliance.
- All SHEQ Team will have access to the Pegasus Legal Register to review and assess compliance with legal requirements for sites
- Compliance overview will be indicated on the website as per the page attached below.

Examples of legislation to be complied with:

- *Environmental Protection Agency Act (1992)*
- *Protection of the Environment Act (2003)*
- *Environmental (Miscellaneous Provisions) Act (2011)*
- *Waste Management Acts (1996 to 2011)*
- *Waste Management (Hazardous Waste) Regulations*
- *Air Pollution Acts (1987 and 2011)*
- *European Communities (Environmental Liability) Regulations (2008 – 2011)*
- *COMAH*
- *European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations (2000 – 2006)*
- *Local Government (Water Pollution) Acts (1977 – 1990)*
- *Water Services Acts (2007 – 2012)*
- *Dangerous Substances Acts (1972 – 1979)*
- *Fisheries (Consolidation) Acts (1959 – 2003)*
- *The Freshwater Fish Directive*
- *The Habitat Directive*
- *The Local Government (Planning and Development) Act 2000*
- *Urban Wastewater Treatment Regulations*

- *Irish Wildlife (Amendment) Act 2000*
- *The Carriage of Dangerous Goods by Road Act*
- *European Union (Energy Efficiency) Regulations 2014*
- *C532 Control of water pollution from construction sites Guidance for consultants and contractors, CIRIA*
- *C674 The use of Concrete in Maritime Engineering - a guide to good practice, CIRIA*
- *C744 Coastal and marine environmental site guide. 2nd edition (superseded C584), CIRIA*
- *'Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters – January 2014' (NPWS, 2014)*

In addition to the above non-exhaustive list, a number of standards, best practice and policy publications exist which inform WBCL's approach to Environmental and Waste Management:

- *Changing Our Ways (1998)*
- *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction & Demolition Projects (2006)*
- *Delivering Change – Preventing and Recycling Waste (2002)*
- *Waste Management – Taking Stock and Moving Forward (2004)*
- *Construction Industry, Task Force B4 Report - Recycling of Construction & demolition waste (2001)*
- *National Construction and Demolition Waste Council – Annual Reports*
- *Environmental Protection Agency: National Waste Reports*
- *CIRIA Guideline C584: Coastal and Marine Environmental Site Guide*
- *BS 5228: Code of Practice for Noise and Vibration Control on Construction and Open Sites*
- *UK Environment Agency PPGs including PPG1, PPG2, PPG5, PPG6 and PPG21;*
- *IFI: Protection of Fisheries Habitat during Construction and Development Works at River Sites;*
- *NRA: The management of noxious weeds and non-invasive plant species on National Roads.*
- *BSI (British Standards Institution): PAS 2080:2016 Carbon Management in Infrastructure*

Further best practice information is also available from a variety of internet resources in Ireland, the UK and the EU. WBCL are aware that Environmental and Waste Management Legislation is subject to continuous revision and update as required. Site staff therefore will regularly consult with relevant websites and bodies to ensure the project operates to the highest standards of environmental management. The table overleaf identifies a number of useful bodies and related websites which can be consulted on a regular basis by the site team.

Organisation	**Website**
An Bord Pleanála	www.pleanala.ie
CIRIA	www.ciria.org.uk
Construction Industry Federation	www.cif.ie
Department of Agriculture, Food and The Marine	www.agriculture.gov.ie
Dept of Communications Energy & Natural Resources	www.dcmnr.gov.ie
Dept of Environment Community & Local Government	www.environ.ie
EnviroCentre	www.envirocentre.ie
EPA	www.epa.ie
EPA National Waste Prevention Programme	http://www.epa.ie/waste/nwpp
European Commission	http://ec.europa.eu/index_en.htm
European Commission Legislation Index	http://eur-lex.europa.eu/en/index.htm
EU Integrated Pollution Prevention & Control Bureau	http://eippcb.jrc.ec.europa.eu/
Green Construction Board	http://greenconstructionboard.org/
Green Building Council UK	http://www.ukgbc.org/

HSA	www.hsa.ie
IEI/Engineers Ireland	www.engineersireland.ie
Inland Fisheries Ireland	www.fisheriesireland.ie
Invasive Species Ireland	http://invasivespeciesireland.com
Institute of Materials, Minerals and Mining	http://www.iom3.org/
Irish Environmental Law Association	www.iela.ie
Irish Statute Book	www.irishstatutebook.ie
National Construction and Demolition Waste Council	www.ncdwc.ie
National Parks and Wildlife Service	www.npws.ie
Office of Public Works	http://www.opw.ie/en/
Pipe Jacking Association: Carbon Calculator	http://www.pipejackingco2calculator.com/
Marine Institute Ireland	www.marine.ie
Sustainable Energy Authority of Ireland	www.seai.ie
The European Recycling Platform	www.erp-recycling.org/index.php
Waste and Resources Action Programme	www.wrap.org.uk
WEEE Ireland	www.weeeireland.ie

Section 6 | Project Specific Environmental Issues and Control measures

6.1. Overview

The project is located at Rossaveel Harbour

Figure 6 - Overview of works

Existing Environment

Rossaveel Harbour is primarily a fishing port and serves the Irish and foreign fishing fleet that operates off the coast of Galway. It lies between the major fishing ports of Killybegs to the north and Dingle and Castletownbere to the south. It can accommodate vessels up to approximately 5m draught. In addition, it is currently accessible at all states of the tide for vessels of up to approximately 3m maximum draught and in this has a distinct advantage over the port of Galway, which requires lock gates to maintain the water level in the port during periods of low water.

The inner harbour is positioned on the north-east shore of upper Cashla Bay and is well sheltered. The existing harbour currently comprises two piers, known as Piers 1 and 2, along with a dedicated passenger ferry terminal and a small craft harbour. Pier 2 is the more recent development of the two piers. The disposition of these piers is such that they create an approximately rectangular shaped basin at the centre of the harbour.

The present fleet utilising the harbour is approximately 35 vessels. These vessels are whitefish boats of 15 metres to 24 metres registered length and small pelagic vessels up to 35 metres. There is also a small number of angling boats taking paying customers on day trips to the fishing grounds in Galway Bay. In addition, several Irish registered deep water fishing vessels currently call at the pelagic berth on Pier 2. In addition to its fishing fleet, Rossaveel provides a terminal for foot passenger ferries operating to the Aran Islands. A recently completed ferry terminal development project provided three new floating pontoon piers to the east side of Pier 2, each providing two berths and linked to the shore by an access gangway. The dredging works for the ferry terminal also led to the development of an area of reclaimed land to the north-west of Pier 2. Onshore facilities were also constructed and passenger ferry operations from the new pontoons commenced in 2011.

Information on specific environmental issues and environmental management requirements is given in a number of documents which accompany the contract documents, in the particular specification and also in background information such as the: (*EIA Screening, Planning Rept).*

WBCL aims to work in a manner that maximises the opportunities to enhance the environment whilst reducing the negative environmental impacts of the project in accordance with the WBCL Environmental Policy statement. At all times, WBCL will seek to deliver the highest standards of environmental management across the project, ensuring this standard is maintained by monitoring, auditing and continuously improving our practices throughout the lifetime of the project. In order to do this, the Contract Management Team and all subcontractors and suppliers will comply with the requirements of the WBCL Environmental Management System and this CEMP, implementing the plan in conjunction with our relevant environmental procedures. We set out how we achieve the highest standards of environmental management in this CEMP document.

The CEMP establishes the arrangements to manage the environmental risks associated with this Contract and details how monitoring will be used to ensure that the agreed environmental procedures are adhered to and supported operationally by the relevant documentation.

Sustainability and Carbon Footprint Reduction is an issue in the industry and a major focus of WBCL activities. We aim to implement best practice in regards to sustainability across the business, for example by utilising new methods and working practices that reduce the embodied carbon content in our facilities and on our projects. We work in line with our ISO 50001 Standards to

The CEMP also deals with *Emergency Preparedness and Response.*

All contractors providing a product or service will be required to provide evidence, for example a method statement, to show how they will control environmental risks that may arise from undertaking their works.

Compliance to environmental provisions and controls outlined in this CEMP is monitored on a regular basis by weekly SHEQ inspections, monthly environmental inspections and monthly SHE scored inspections. Issues and observations picked up during these inspections are raised in the weekly planning and progress meeting, attended by site management.

6.2 Identification of Significant Aspects and Associated Impacts

6.2.1 Key Environmental Issues

The Key Environmental Issues identified shall be addressed and mitigated via controls and mitigation measures outlined in this CEMP. Environmental issues for the project are identified in the main Works Information, as well as in additional Background Information provided at tender stage, for example the (*EIA Screening, Planning Rept).*
This CEMP shall be live working document and shall be updated and revised throughout the project as further information becomes available.

The following key environmental issues have been identified as part of the con. This is a **non-exhaustive list** of key issues and is subject to review and revision during at project commencement:
Reference 3.0 of GDG Outline CEMP

No	Description	Mitigation Measures as per EIR and company policy
1	**STORAGE AND COMPOUND AREAS**	Ward and Burke will set up suitable compound areas for storage of material and set up offices and welfare facilities. Parking will be provided in compounds for Ward and Burke, ER Teams, DAFM Representatives and Visitors. Compounds are to be organised to segregate material and suitable storage to reduce waste and suitable chemical management. 
2	**WORKING ADJACENT TO WATER**	No Spill of chemical in to the water Suitable chemical storage to be in place. 110% Capacity Spill kits to be on site. All personnel to be briefed on the management of spills. Refueling operations to take place in designated areas away from water course. Biodegradable oils to be used in plant Any spill to be reported immediately to the SHEQ Advisor and Site Management Emergency plans to be put into action
3	**GOOD HOUSEKEEPING AND CONSTRUCTION**	**Ref: ENV- 06** Ward and Burke shall prevent any mud, dirt, debris or building materials being carried on to or placed on the public road or adjoining properties as a result of the construction works and repair any damage to the public road arising from carrying out the works. Roads will be swept down and kept clean to reduce generation of dust to the area. Site Compound to be set up with segregated office areas and storage areas

	MANAGEMENT BEST PRACTISE	Materials to be stored and segregated in their allocated areas Signage to be in place Storage containers will be provided on site Storage containers to be kept clean and tidy All walkways to be kept clean and free from trip hazards Waste skips to be provided for waste segregation All Skips to be labelled General Waste skips to be covered Clean as we go policy on site Chemical storage areas to be place All chemicals to be stored on bunds with 110% Chemical Storage areas to be sign posted Spill Kits to be available on site
4	**CHEMICAL MANAGEMENT ON SITE**	**Ref: ENV- 06** Ward and Burke shall ensure that all hydrocarbons used during construction are appropriately handled, stored and disposed of in accordance with recognised standards as detailed by the GDG Guideline CEMP) Strict control of pollutants associated with the construction process will be implemented. For all activities involving the use of potential pollutants or hazardous materials, it will be necessary to ensure that material such as concrete, fuels, lubricants and hydraulic fluids are carefully handled and stored to avoid spillages. Good housekeeping (daily site clean-ups, use of disposal bins, etc.) on the Site, and the proper use, storage and disposal of these substances and their containers shall be used to prevent contamination. Potential pollutants will be adequately secured against vandalism and will be provided with proper containment. Spillages will be immediately contained, and contaminated soil removed from the Site and properly disposed of to a suitably licensed landfill. Adhere to WB Chemical Management Procedure This will be done by suitable bunded chemical Storage with 110% Capacity Waste oils and hydraulic fluids shall be collected in leak-proof containers and removed from the site for disposal or re-cycling Any diesel or fuel oils stored on site shall be bunded to 110% of the capacity of the storage tank. Where required, fuel shall be transported in a mobile, double skinned tank and a spill tray shall be used when refuelling (if taking place outside a compound area).

		Fuels, lubricants and hydraulic fluids for equipment used on the site, as well as any solvents, oils, and paints shall be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to codes of practice.
5	**SURFACE WATER MANAGEMENT**	**Ref: ENV- 07** Ward and Burke shall not allow any build-up of silt to be retained along the silt fence employed and the appointed contractor shall be obliged to remove excess silt for reuse in the works or disposal off-site. Ward and Burke shall ensure that no harmful materials shall be deposited into nearby watercourses, including sea, water courses, drainage ditches/pipes, on or adjacent to the site. Ward and Burke shall comply with the requirements of the Public Health Acts and Fisheries Acts. Ward and Burke will adhere to Guidelines for minimising impacts on water quality and fisheries in relation to Construction shall be implemented including, but not limited to, CIRIA C532 "Control of water pollution from construction sites - Guidance for consultants and contractors", Inland Fisheries Ireland guidelines and TII Guidelines. Reference section 3.4 of GDG Guideline CEMP: • Excavated / dredged material should not be allowed to fall back into the harbour waters in an accidental manner and so should not be stored or placed near the waters edge. • Water should not be allowed to escape directly from the construction works staging and storage areas and enter harbour waters if there is potential for it being contaminated by hydrocarbons or other pollutants for instance. Suitable means of catching any escaped water must be provided to prevent unwanted materials / potential contaminants from entering the Harbour. • If deemed necessary on site storage areas will be provided with a temporary drainage system that remains separate from any general site drainage and cutoff ditches. Same will be monitored on site. • There will be stockpiles of various materials at different stages of the project, e.g. rock armour to be reused, new rock armour, dredged material and potentially some additional fill for breakwater structures if required. These stockpiles should be bunded and located within the allocated stockpile areas in so far as possible. Imported materials shall be ordered as and when they are required to reduce unnecessary stockpiles. All stockpiles shall be inspected regularly. • Several protection measures which shall be incorporated into the site management from Ward and Burke. **Turbidity Monitoring**: As per 199.6AR VOLUME A Works Requirements *a) A Toroidal buoy (1350 mm in diameter) with galvanised steel/aluminium superstructure with baffle light.* *Each buoy shall be fitted with a solar powered Caramanah 501 LED navigation light fitted with 2 No solar panels and battery box for housing system and battery.* *b) A compact, durable and lightweight HydroLab MS5 probe containing a self-cleaning turbidity sensor, LDO*

		dissolved oxygen sensor, a temperature sensor and a conductivity sensor. The measurement range for the turbidity sensor shall be 0-3000NTU with a resolution of 0.1NTU for <400NTU and 1NTU for values >400NTU. The measurement range for the LDO sensor shall be 0-20 mg/l with a resolution of 0.01mg/l. The MS 5 unit shall record internally in addition to data output. *c) A telemetry system to relay data to a shore location* *d) Moorings that include weights (block), shackles, swivels and chain.* *Each of the fixed stations shall be capable of relaying data on a half hourly basis back to a terrestrial monitoring station located at Rossaveel FHC. The monitoring station shall include a data logging system with real time visual display of the transmitted data. When turbidity or dissolved oxygen levels exceeded the threshold levels outlined (20NTU for turbidity and 6mg/l for DO) the system shall output text messages to Employer and the Harbour Master.* Run-off velocities and erosive energy shall be reduced by increasing the lengths of flow paths for precipitation run-off, through the construction of interceptor ditches and channels with low gradient, and by lining unavoidably steep interceptors or conveyance ditches with filter fabric, rock or polyethylene lining to prevent channel erosion. Run-off and wash down water from exposed aggregate surfaces, cast in place concrete and from concrete trucks shall be trapped on-site to allow sediment to settle out and reach neutral pH. The Contractor shall consult and comply with the requirements of the National Parks and Wildlife Service (NPWS) and the Inland Fisheries of Ireland (IFI).
6	**CONCRETE ON SITE**	**Ref: ENV- 07** Reference section 3.5 of GDG Guideline CEMP: Concrete, including, but not limited to, waste and wash-down water, shall be contained and managed appropriately to prevent pollution of watercourses. Concrete pouring shall be prevented during periods of heavy rainfall. Quick setting mixes shall be used. Temporary Concrete Washouts will be provided adjacent to areas where concrete is being poured. Designated washout will be in the form of polythene lined skips or polythene lined washout pits. (Excavated pit lined with stone and lined with polythene) Same will be allowed dry out and concrete will be removed for recycling on site. Washout will not be permitted in any other area of site. Concrete washout to be located away from waters edge. Concrete pumps on site: All end of pump hoses will be secured buy ropes Concrete skips on site: the Delivery chute will be securely fastened using a lock chain or similar control measures to prevent any accidental spills At the loading points of the concrete skips / pumps control measures will be in place to prevent concrete spilling from trucks and contaminating the ground and leaching into the water adjacent. (This will be in the form of lines polyethene areas for loading) Any shuttering oils / chemicals will be stored in chemical storage with 110% capacity)

		Any additional plant used in the concrete works will be bunded.
7	**REFUELLING**	**Ref: ENV- 08** Reference section 3.6 of GDG Guideline CEMP: Refuelling shall only take place in designated hard standing areas. A supply of spill kits and hydrocarbon adsorbent packs shall be stored along the construction areas. In the event of hydrocarbon leakage from on-site plant, a supply of hydrocarbon absorbent material will be maintained locally and immediately applied to the affected area and then appropriately disposed of to a suitably licensed landfill. Ward and Burke shall ensure that all personnel working on site are trained in the use of this equipment. Adhere to WB Chemical Spill Procedure
8	**CONTAMINATED MATERIAL**	**Ref: ENV- 09** Reference section 3.7 of GDG Guideline CEMP: Ward and Burke Will ensure that: • Potentially contaminated dredge material shall be stored in stockpiles within the site itself, and separately from clean dredged material. The stockpiles shall be cordoned off and labelled as unusable until such a time as laboratory results are available to determine if the material is suitable for reuse. • Persons authorised to handle the material. • Any PPE required for those persons handling any contaminated material. • All equipment shall be cleaned down in a designated area prior to leaving the site. • Material shall be tested and against what parameters to ensure its suitability for reuse. • Material shall be disposed of in the event it is deemed unsuitable for reuse
9	**PROTECTION OF FLORA AND FAUNA**	**Ref: ENV- 10** Reference section 3.8 of GDG Guideline CEMP: ▪ *C532 Control of water pollution from construction sites Guidance for consultants and contractors, CIRIA* ▪ *C674 The use of Concrete in Maritime Engineering - a guide to good practice, CIRIA* ▪ *C744 Coastal and marine environmental site guide. 2nd edition (superseded C584), CIRIA* ▪ *'Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters – January 2014'* (NPWS, 2014) The following mitigation measures at a minimum are proposed to minimise the potential impacts on marine mammals and to allow animals move away from the area of dredging operations:

		• All personnel will be appropriately trained about environmental issues prior to the start of the operation. • All equipment will be in good condition to avoid spillage or discharge of oil, smoke and excessive noise. • Refuelling will be carried out by competent and trained people away from any environmentally sensitive areas; and dredger to be moored up securely. • An appropriate waste container will be placed to collect waste before the final disposal by authorised company. If applicable any hazardous material storage areas will be identified, labelled and properly marked and fitted with spill containment systems; • Dredging vessel will be checked for any fuel/oil leaks on a regular basis by the crew; • Any spills will be reported immediately to the site agent/authorities; • In the event of a major spill due to damage to the dredger. Locate and isolate, inform harbour authorities, project manager and environmental agency; • A dedicated Marine Mammal Observer shall be present and act in accordance with the Contract. The following general protection measures must also be incorporated to the final CEMP as a minimum; • All fuel and lubricants and lubricants for construction vehicles shall be stored in a bunded area within a site compound not on and of the intertidal habitats. • All construction vehicles should be inspected for oil leaks and any found should be repaired. • If a cement batching plant is to be used it should be within the site compound and bunded to prevent run-off to the shoreline. • All shuttering and form work must be securely installed and inspected for leaks before cement is poured and all pouring operations should be monitored for spills or leaks. • When constructing the breakwater construction traffic should be confined as much as possible to within the footprint of the proposed breakwaters in order to minimise the opportunities for damage to adjacent habitats outside the development footprint. • Where appropriate any rock armour currently in situ which is proposed to be reused should be located at a similar level on the shore and facing the same way, either inwards or outwards, as it currently is positioned.

9	**INVASIVE SPECIES**	**Ref: ENV- 11** Reference section 3.9 of GDG Guideline CEMP: No invasive species have been recorded within the site as part of the EIS. An Invasive Species Management Plan shall be prepared as part of the Construction Environmental Management Plan. All personnel involved in construction will be aware of their responsibilities in relation to invasive species. Induction on the control and spread of invasive species will be carried out before the commencement of the construction works. **Ward and Burke will carry out an Invasive Alien Plant Survey (IAPS) Survey ahead of the works** If any invasive Species are identified on site all suitable control measures will be adhered too. Procedures shall need to be in place to handle works around all invasive species. Ecologist guidance for works around any invasive species will be adhered too Ward and Burke will ensure that the source locations for materials which are introduced to the site during the construction phase of the project are free from non-native invasive species.
10	**PROTECTION OF ARCHAEOLOGICAL AND CULTURAL HERITAGE**	**Ref: ENV- 12** Reference section 3.10 of GDG Guideline CEMP: The Employer has engaged an experienced and suitably qualified maritime archaeologist with underwater/maritime/marine dredging experience and licensed under the National Monuments Act 1930-2004 who will be retained for the duration of the relevant works to carry out such archaeological monitoring. The Contractor shall make provision to accommodate the archaeologist on board the dredging plant, provide transport to and from the shore and provide welfare facilities. In the event of archaeologically significant features or material being uncovered during the construction phase, machine work will cease in the immediate area to allow the archaeologist/s to inspect any such material; full archaeological recording of significant material will be in accordance with archaeological licence requirements and the Statutory Orders. Provision for secure temporary storage facilities shall be made in advance of the Works so as to immediately house any finds recovered during the archaeological monitoring.
11	**NOISE AND VIBRATION MANAGEMENT**	**Ref: ENV- 13** Reference section 3.11 of GDG Guideline CEMP: Ward and Burke will put in suitable controls for monitoring of Noise and Vibration Monitoring. As required Vibration Monitors and Noise Monitors will be put in place to monitor in real time noise and vibration readings. Ward and Burke will agree trigger limits will be agreed

		Works may need to be stopped to review and agree possible new construction with ER Team if contract limits cannot be adhered too. Control measures on site will ensure that: • The best means practical, including proper maintenance of plant, will be employed to minimise the noise produced by on-site operations; • All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract; • Machines, which are used intermittently, will be shut down or throttled back to a minimum during those periods when they are not in use; • Any plant, such as generators or pumps, which are required to work outside of normal working hours, will be surrounded by an acoustic enclosure; and • Throughout the contract, the supervision of the works will include ensuring compliance with the limits using the methods set out in BS:5228. To ensure protection of marine mammals: • The dredger will be started at lowest revs of the pump, with pump revs increased over a 15 minute period to allow wildlife an opportunity to move further away from the vessel prior to the pumps reaching full power. Management Measures **Vibration** The following mitigation measures will be implemented at the site during all activities that may induce significant vibration: • It is an activity that would be confined to specific locations and be of limited duration. Measures will be taken to minimise vibration due to plant and machinery on the site. • Vibration monitoring should be carried out at any potentially affected properties during the works. Monitoring should occur as indicated by the contract documents.
12	**AIR & DUST**	**Ref: ENV- 14** Reference section 3.12 of GDG Guideline CEMP: Abatement measures are required to mitigate against any potential air quality impacts on nearby residents or businesses How Ward and Burke will manage dust on site; • Access roads and compound areas will be kept clean and dust suppression will be in place as required in dryer months of the year. • Skips will be covered

		• Dust suppression as required • spray suppression systems • Approach roads and all associated construction areas will be regularly cleaned and maintained as appropriate. • Hard surface roads will be swept to remove mud and aggregate materials from their surface; • An onsite wheel cleaning facility will be provided in the construction compounds to ensure that all vehicles leaving the site do not carry access dirt or material to the public road; • Dust suppression by water spray on access roads and other areas if dust becomes an issue; • Use of appropriately covered vehicles for transport of potential dust generating material such as sand; • Access on un-surfaced roads will be restricted to essential traffic only; • Mandatory speed limits will be enforced within the harbour area particularly in weather conditions which are likely to generate dust • Material handling systems and main site compound stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting shall be applied as required if particularly dusty activities are required during dry or windy periods; and • All complaints to be reported to the Site Manager and developers Project Manager, and also logged within an on-site register. • Burning of materials will not be permitted on site.
13	**WASTE MANAGEMENT**	**Ref: ENV- 15** Reference section 3.13 of GDG Guideline CEMP: Ward and Burke will manage all waste generated on site. Management will be carried out in accordance with Waste Management Act 1996. Circular economy guidelines will be adhered too on site. Where required soil and chemical analysis will be undertaken to assess is material is hazardous. Where possible waste will be reduced and recycled Where waste is required to be removed from site , including Construction and Demolition waste, it will be removed by a suitably licensed haulier, to a suitable licensed facility. Copies if all dockets for waste removed from site will be recorded on a waste log for site. For any form of hazardous waste that may arise such as asbestos Ward and Burke will store the same correctly until a suitable licensed contractor will remove same off site. Records of same will be recorded on site. For Skip waste generated on site including General Waste, Timber Waste and Metal Waste will be segregated for removal off site for treatment. Records of same will be recorded on site.

		In order to reduce waste generation on site Ward and Burke will in as far as possible ensure that: • Ordering the correct amount of materials to be delivered when needed; • Ensuring materials are not delivered to site damaged and unusable; • Reducing the amount of packaging used by suppliers; • Where possible, establish a 'take back' system with suppliers; • Ensuring wastes are handled and stored correctly; and • Limiting the amount waste going to landfill by reusing and recycling where possible.
14	**TRAFFIC AND TRANSPORT**	**Ref: ENV- 16** Reference section 3.14 of GDG Guideline CEMP: Suitable Traffic Management will be in place to reduce the impact on the surrounding environment Equipment used in transport including trucks/ tractors/trailers will be appropriate for site. Machinery will be regular serviced, suitable lighting, motion beepers Roads will be kept clean and free from Debris
15	**PLANT AND MACHINERY MANAGEMENT**	Machinery used on site shall be regularly inspected to ensure there is no leakage from them and to ensure the machinery will not cause contamination of watercourses. All plant and machinery on site will be owned and managed by Ward and Burke (In the event of a breakdown or an emergency hired plant and machinery may be required. Same will be inspected ahead of use to ensure suitable) Plant and Machinery will be inspected visually daily ahead of works Weekly records of inspections will be recorded on GEOPAL GA2 Forms Ward and Burke Fitter for site will carry out regular inspections and servicing on all owned plant and machinery to ensure suitable for use Any defects in plant or machinery will be reported to the
16	**AQUATIC LIFE AND HABITATS**	The Employer will engage a Marine Mammal Observer for the duration of the works. Reference 3880AR Volume A – Works Requirements All recommendations from the Marine Mammal Specialist to be adhered too

17	**DREDGING AND BLASTING**	Ward and Burke will appoint a suitably quialified subcontractor for the works Subcontractor to be approved by client (DAFM) Subcontractor to provide RAMS including all suitable control measures in place The Employer will engage a Marine Mammal Observer for the duration of the works. Reference 3880AR Volume A – Works Requirements All recommendations from the Marine Mammal Specialist to be adhered too
18	**TRAINING**	Ref: ENV- 02 Reference section 3.1 of GDG Guideline CEMP: All Ward and Burke Personnel will be trained all in Environmental Management on site including: Onsite and internal awareness training in relation to environmental matters on site. These will include: • Working adjacent to water • Chemical Management on site • Fuel Management on site • Refuelling procedures • Spill procures • Habitat protection • Used of concrete on site and correct concrete washout procedures on site • House keeping • Waste Management • Noise and vibration Management • Dust management on site • Traffic management Awareness and Training will be carried out through Site Inductions, Toolbox Talks, Workshops on site.
19	**ENERGY MANAGEMENT**	Keep **Energy** consumption to a minimum during the works of the site. Monitor activities and fuel consumption. SEUS on civils site include plant and machinery. Main Energy source being diesel. Examples of how we can reduce our energy consumptions on sites ● *Excavators/Dumpers/Cranes/Compressors/Generators:* o *Newer more efficient plant and machinery to be used on site where possible*

		○ *Auto Idling to be in newer machinery. Machine will shut down after a few minutes of idling. This lowers the engine's RPM which saves fuel* ○ *Auto Engine Shut down - Machine will shut down after a few minutes idling. This lowers the engine's RPM which saves fuel* ○ *Fuel Efficiency Reporting and Monitoring* ○ *Training Operatives on energy consumption on excavators* ● *Using LED lights in temporary offices* ● *Have lights and heaters on timers in offices*
20	**PUBLIC RELATIONS**	Public Relations and Communications. WBCL shall carry out the construction works in such a manner as to cause minimum nuisance. The movement of construction vehicles shall be organised to cause minimal disturbance to public use of harbour roads and other areas. WBCL will ensure that all householders and businesses along the proposed pipelines are given adequate written notice of any works, any disruption to access to their houses or temporary interference with services as a result of the works shall be notified a minimum of two weeks in advance. WBCL welcome any requirement to attend meetings with Local Liaison Committees or groups.

Review of control measures implemented on site Jan 2023 to June 2024:

- Continuous turbidity monitoring
- Testing and sampling of all imported material to ensure suitable for imported material on site
- Adhering to all contract and planning constraints for blasting times
- Implementation of Marine Mammal Monitoring on site for blasting works
- Vibration monitoring carried out for blasting works. Trigger limits set and monitored compliance with same.
- Implementation of Marine Mammal Monitoring for dredging works
- Adhering to all dredging time project and planning constraints
- Refuelling and chemical management on site

Section 7 | Avoiding Public Nuisance

Working hours

Working hours on the contract will be:

- Monday to Thursday – 07.00:07.00
- Friday – 07.00:14.00
- Saturday- Sunday – No working unless necessary
- Bank Holidays - No working unless necessary

General

Measures shall be taken to prevent the occurrence of any nuisance arising as a result of any activities on the Project. A complaints procedure shall be instigated on the project and contact numbers communicated to all personnel and displayed on office notice boards. In the event of an environmental nuisance complaint being received, these must be logged on the complaint register and required corrective measures are undertaken. The complaints register will be reviewed during formal environmental audits

We will always endeavour to minimise nuisance, however when construction operations require out of hours working we will carry out the following procedures:

- *Consult and gain agreement from the relevant planning authority prior to any operation likely to cause out of hours noise or light nuisance;*
- *Carry out letter drops to local residents and businesses at least 48 hours prior to any operations where we may cause a nuisance;*
- *Inform the emergency services and local press.*

Lighting Management

All lighting will be directional and will be directed towards the activity or secured area

- *All task lighting will be sufficient for the job, not over lit;*
- *Whilst working adjacent to live traffic, task lighting will be positioned to avoid any glare to road users;*
- *If complaints are received we will stop the operation (if possible) and investigate the working method and endeavour to stop the light nuisance;*
- *Lights will never be left on if no work is being carried out;*
- *Existing street lighting will be utilised where possible;*
- *If existing street lights are removed temporarily for construction, these will always be replaced with a similar standard of lighting coverage where required.*

Road Sweeping

Road sweepers will be directed by the construction programme to target high volume traffic movements. Wherever possible, road sweeping will be utilised outside peak traffic flows to minimise traffic disruption.

Access Locations

Agreed access locations will be defined in consultation with the GDG, DAFM and Ward and Burke. . These will be clearly marked and signed.

Parking

Car parking will be actively encouraged at the compounds. Operatives and staff, parking cars elsewhere, will be informed at induction to follow these procedures:

- *Where possible always park in recognised parking places;*
- *Never park in private property;*
- *Never obstruct private accesses;*
- *Never leave mud on the road, always use wheel wah;;*

- *Never park on pavements;*
- *Act in a courteous manner to all other public road users.*

Anyone not adhering to these rules will be disciplined.

Signage
All temporary traffic signage will be placed as per Chapter 8 guidelines and placed with Local Authority traffic and gardai approval. Temporary traffic signage will be inspected daily and after inclement weather and a Traffic Management gang will be on site during all major traffic management set ups to ensure compliance. Businesses that may be obscured or indirectly impacted by the construction works will be clearly signed.

Vehicles and Traffic Management
As well as the provision of a Traffic Management Designer as detailed elsewhere, we will employ a TSCO (Traffic Safety Control Officer) for the implementation of Traffic Management.

The TSCO shall ensure all TM is approved and placed in accordance with the required legislation. Both Dublin City Council and An Garda Siochana must agree all traffic diversions and closures prior to installation.

Emergency services and bus companies will always be consulted prior to any formal approaches for traffic closures and diversions. All traffic management systems will be placed by trained, experience and authorised operatives. It is an offence for untrained staff or operatives to change or adapt traffic management. Anybody caught doing so, will be disciplined. Reference is made to our separate Traffic Management Proposals as part of our overall submission.

Delivery Management
We will be implementing the following material/plant delivery procedures:

- *All deliveries will be instructed to enter site at an approved site entrance*
- *All material deliveries will be planned to make full utilisation of site space and security, we will wherever possible minimise storage on site by running a delivery just in time policy.*
- *Where site entrances are restricted, we will instruct delivery companies to use shorter based vehicles*
- *No deliveries will be allowed outside site working hours, without the required approvals*
- *No deliveries will be allowed to wait on public highways*
- *Any large, special deliveries, which require a TM escort will be planned for in advance with advice from the police, the relevant planning authority, local resident groups, the local authorities roads department and the delivery companies haulage company*
- *All gate monitors and staff will be instructed to take details of any delivery vehicles not following these procedures.*

Disciplinary action will be taken if these procedures are not adhered to.

Section 8 | Flora, Fauna and Invasive Species

Flora
The key deliverable is to absolutely minimise any impact on native trees and shrubs. All trees, hedges and shrubs within or adjacent to the site, except those that have been approved for removal shall be protected from damage during construction work by the erection of Heras Fencing.

Wherever possible the removal of any flora will be limited and removal will only be carried out with the prior approval of the Client and Environmental Manager. Removal of trees and saplings will only be carried out where absolutely required, and replacement of trees, post works, will be carried out if possible.

Fauna
Wherever possible the project will avoid disturbing any fauna within/near to the project works. Any fauna observed will be monitored and avoidance techniques utilised.

To protect the environment, chemicals and oils used shall be those approved for use in, or with the least potential for causing damage to, the marine environment (such as biodegradable oil detailed earlier in this CEMP).

Invasive Species
Invasive non-native plant and animal species are the second greatest threat to biodiversity worldwide after habitat destruction. They can negatively impact on native species, can transform habitats and threaten whole ecosystems causing serious problems to the environment and the economy.

The transport or introduction of Invasive species can result in deterioration in water quality and significant fish mortality, dramatically alter the ecology of receiving watercourses and render them unavailable for recreational and other water-based pursuits.

No invasive species were identified in the Employers Preworks survey or in Ward and Burke Survey.

Same will be monitored through out the contract.

Table below identifies what to look out for in relation to some typical invasive species found in Ireland.

WB Ecologist will be consulted if required

Species	
Japanese Knotweed (*Fallopia japonica*)	

Three cornered Leek (*Allium triquetrum*)	
Winter Heliotrope (*Petasites pyrenaicus*)	
Butterfly Bush (*Buddleja davidii*)	
Snowberry (S*ymphoricarpos albus*)	

Montbretia (*Crocosmia x crocosmiiflora*)	

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Section 9 | Monitoring and Sampling

WATER QUALITY MONITORING

Monitoring of any discharge will typically be carried out weekly by the site team to ensure no impact on the local system. Frequency may be varied subject to the level of activity and prevailing weather conditions to meet the perceived risk at the given time. All temporary ponds will be within the site boundary, following completion of the requirement any silts will be tested and removed from site in a suitable manner.

Properties identified as sensitive receptors during the construction phase will be shown on a drawing. Where identified as required, monitoring will be ongoing throughout the construction phase, frequency will be based on forthcoming work activities, timing and location of sensitive receptors.

Turbidity Monitoring: As per 199.6AR VOLUME A Works Requirements

a) *A Toroidal buoy (1350 mm in diameter) with galvanised steel/aluminium superstructure with baffle light. Each buoy shall be fitted with a solar powered Caramanah 501 LED navigation light fitted with 2 No solar panels and battery box for housing system and battery.*
b) *A compact, durable and lightweight HydroLab MS5 probe containing a self-cleaning turbidity sensor, LDO dissolved oxygen sensor, a temperature sensor and a conductivity sensor. The measurement range for the turbidity sensor shall be 0-3000NTU with a resolution of 0.1NTU for <400NTU and 1NTU for values >400NTU. The measurement range for the LDO sensor shall be 0-20 mg/l with a resolution of 0.01mg/l. The MS 5 unit shall record internally in addition to data output.*
c) *A telemetry system to relay data to a shore location*
d) *Moorings that include weights (block), shackles, swivels and chain.*

Each of the fixed stations shall be capable of relaying data on a half hourly basis back to a terrestrial monitoring station located at Rossaveel FHC. The monitoring station shall include a data logging system with real time visual display of the transmitted data. When turbidity or dissolved oxygen levels exceeded the threshold levels outlined (20NTU for turbidity and 6mg/l for DO) the system shall output text messages to Employer and the Harbour Master.

NOISE AND VIBRATION MONITORING

Noise Monitoring and vibration monitors will be set up and maintained by a competent specialist on site as required.. *NVM are the appointed contractor for same.*

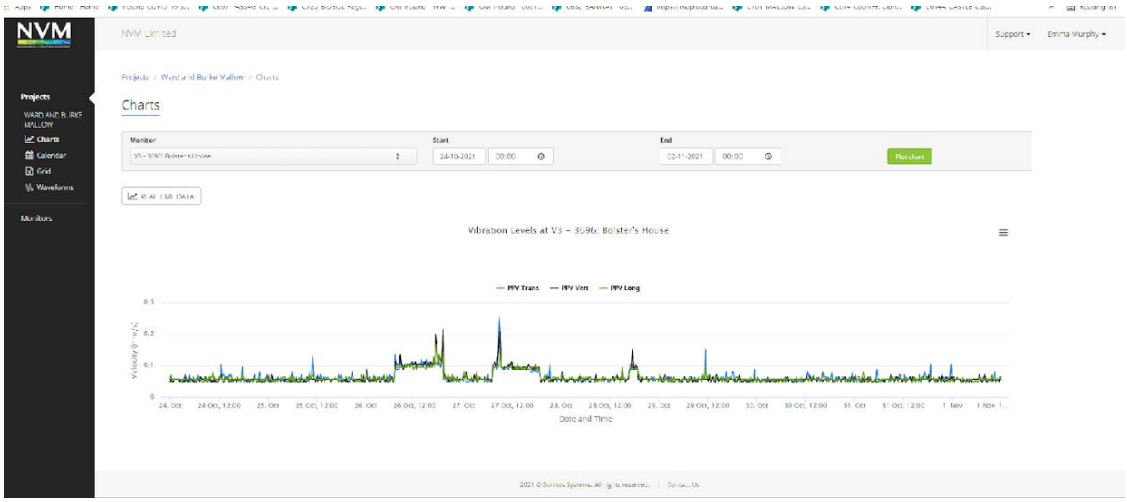
Locations to be agreed on site.

Locations to be agreed on site.

An online portal will be used to record noise and vibration monitoring in real time on site.

Trigger limits will be set and an email / text alert system is set up to notify team of any breaches in triggers.

Once a limit is trigged work will be stopped and control measures put in place to reduce or remove same.



A monthly Vibration Monitoring Report will be prepared by Ward and Burke/ The Report will identify any exceedances above nominal limit values and attempts to clarify the causes etc. Where remedial measures are required and identifiable these will also be clearly stated.

DUST MONITORING

Abatement measures are required to mitigate against any potential air quality impacts on nearby residents or businesses

How Ward and Burke will manage dust on site:

- Access roads and compound areas will be kept clean and dust suppression will be in place as required in dryer months of the year.
- Skips will be covered
- Dust suppression as required
- Spray suppression systems as required
- Approach roads and all associated construction areas will be regularly cleaned and maintained as appropriate.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface;
- An onsite wheel cleaning facility will be provided in the construction compounds to ensure that all vehicles leaving the site do not carry access dirt or material to the public road;
- Dust suppression by water spray on access roads and other areas if dust becomes an issue;
- Use of appropriately covered vehicles for transport of potential dust generating material such as sand;
- Access on un-surfaced roads will be restricted to essential traffic only;
- Mandatory speed limits will be enforced within the harbour area particularly in weather conditions which are likely to generate dust
- Material handling systems and main site compound stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting shall be applied as required if particularly dusty activities are required during dry or windy periods; and
- All complaints to be reported to the Site Manager and developers Project Manager, and also logged within an on-site register.
- Burning of materials will not be permitted on site.

ARCHAEOLOGICAL MONITORING

The Employer has engaged an experienced and suitably qualified maritime archaeologist with underwater/**maritime**/marine dredging experience and licensed under the National Monuments Act 1930-2004 who will be retained for the duration of the relevant works to carry out such archaeological monitoring. The Contractor shall make provision to accommodate the archaeologist on board the dredging plant, provide transport to and from the shore and provide welfare facilities.

In the event of archaeologically significant features or material being uncovered during the construction phase, machine work will cease in the immediate area to allow the archaeologist/s to inspect any such material; full archaeological recording of significant material will be in accordance with archaeological licence requirements and the Statutory Orders. Provision for secure temporary storage facilities shall be made in advance of the Works so as to immediately house any finds recovered during the archaeological monitoring.

MARIN MAMMAL OBSERVATION MONITORING

The Employer will engage a Marine Mammal Observer for the duration of the works.

Reference 3880AR Volume A – Works Requirements

COMPLIANCE MONITORING

Ward and Burke will carry out Environmental Audits and Compliance Audits on site.

These audits will include involve assessing:

- Summary of compliance/ non-compliance with the CEMP;
- Environmental Monitoring Programme results and interpretation;
- Key issues noted in inspections and/ or audits;
- Summary record of incidents and corrective actions;
- Summary of environmental complaints; and
- Summary record of environmental training (as appropriate).

Section 10 | Emergency Response and Incident Reporting

All environmental incidents will be reported as per the WBCL procedure Recording, reporting and investigation of incidents. Reference the contract *Emergency Incident Response Plan (EIRP)*

All environmental incidents will be recorded including the following:

- Any malfunction of any environmental protection system;
- Any emission that does not comply with the requirements of the contract (e.g. noise and vibration);
- Any occurrence with the potential for environmental pollution; or
- Any emergency (e.g. significant spillages or fire outbreak).

Spillages shall be communicated to the SHEQ Manager via telephone or email as soon as possible.

- *The Emergency plan will be developed and in place in the event of a spill. All plans will be communicated to all staff members;*
- *Emergency Plans will be posted in public areas of the site will all associated emergency contact numbers;*
- *Spill Kits will be provided at all work locations;*
- *Socks will be placed in all waster courses to ensure control of a spill.*

As polluting materials will be stored and used on site, an adequate number of spill response measures will be provided. Reference is made to the Project *Handling, Storage and Spill Response of Materials Procedure* which will be provided at contract award stage.

An emergency flow chart for environmental spillage shall be developed by the project. This flowchart will be discussed as part of the SHQE Induction and will be displayed around the site to ensure appropriate measures to prevent and mitigate damage due to accidents and spillages are communicated.
The flow chart will include the following details:

• Contact names and numbers
• Emergency response actions

Compliance against these requirements will be checked as part of the weekly environmental inspections and the results recorded. This inspection checklist will be reviewed during formal environmental audits.

The project *Emergency Incident Response Plan (EIRP)* has been prepared for contract.

In the event of an environmental incident, the Contractor will ensure that the following actions will take place:

- The Employers Representative must be immediately notified;
- Ward and Burke shall inform the ER of all environmental incidents immediately and will be provided with an initial report within 24 hours setting out the incident details and cause(s) if known. The Contractor will provide the ER with a copy of the completed Environmental Incident Report and any further documentation requested by the ER in relation to the incident within 7 days of the incident occurring. Ward and Burke will respond to all comments made by the ER on any incident.
- If necessary, the Contractor will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident;
- The Environmental Incident Report will contain details of the incident including the location, known and suspected causes and weather conditions. It will define the scale and actual/ potential impacts (short, medium, long term, temporary/ permanent) as well as required corrective actions and mitigation/ remediation/ compensation measures (as appropriate

- A record of all environmental incidents will be kept on file by the Contractor. These records will be made available to the Employers Representative and the relevant authorities such as NPWS, if required.

Examples of incidents that need to be reported:

- Any malfunction of any environmental protection system;
- Any emission that does not comply with the requirements of the contract (e.g. noise and vibration);
- Any occurrence with the potential for environmental pollution; or
- Any emergency (e.g. significant spillages or fire outbreak).

PROCEDURE	CHEMICAL SPILL ON SITE
REVISION - DATE	REV 1 – MAY 2022

CHEMICALS SPILLS ON SITE

SPILL CONTROLS TO BE AVAILABE ON SITES:

COSHH Storage, Booms, Spill kits, absorbent granules and absorbent mats are available on site.

CHEMICAL SPILL ON SITE

CONTROL MEASURES TO BE ON SITE

- EVERY CHEMICAL ON SITE TO HAVE AN SAFETY DATA SHEET (SDS)
- COSHH ASSESSMENT TO BE COMPLETED
- SPILL EMERGENCY PLAN TO BE ON SITE
- CHEMICAL SPILL KITS TO BE ON SITE AND AVAILABLE

- SPILL KITS TO BE SUITABLE STOCKED AND REPLENISHED AS REQUIRED
- CHEMICAL SHOWERS TO BE AVAILABE ON WWTP AS REQUIRED

SMALL SPILL ON SITE

- EXAMPLE: DIESEL SPILL FROM DIGGER/ GENERATOR FROM GERRIE CAN/ BOSWER
- LOCATE SPILL KIT ON SITE
- WEAR APPROPRIATE PPE WHEN CLEANING UP THE SPILL (KNOW WHAT YOUR CLEANING UP).
- CONTAIN THE SPILL / CORDON OFF SPILL/ PREVENT SPILL GETTING INTO DRAINS
- CLEAN UP SMALL SPILLS AND LEAKS IMMEDIATELY USING RAGS, CLOTH, ABSORBENT GRANULES AND MATS (USE SPILL KITS).
- CONTACT THE SUPERVISOR/ SITE AGENT/ PLANT MANAGER, EVEN FOR SMALL SPILLS AND LEAKS.
- ARRANGE FOR PROPER WASTE DISPOSAL ACCORDING TO APPLICABLE LAWS AND REGULATIONS.

LARGE SPILL ON SITE

- EXAMPLE: POLY SPILL FROM IBC/LARGE DIESEL SPILL FROM TANK/BOWSER
- EVACUATE THE AREA – ASSESS SAME AND PUT PLAN IN PLACE TO MAKE AREA SAFE
- WEAR APPROPRIATE PPE WHEN CLEANING UP THE SPILL (KNOW WHAT YOUR CLEANING UP).
- CONTAIN THE SPILL / CORDON OFF SPILL IF POSSIBLE
- BLOCK DRAINS, IF PRESENT, TO PREVENT THE SPILL FROM SPREADING FURTHER.
- NOTIFY THE SUPERVISOR/ SITE AGENT/ PLANT MANAGER. THEY WILL CONTACT RELEVANT PARTIES TO ARRNAGE CELAN UP.
- ARRANGE FOR PROPER WASTE DISPOSAL ACCORDING TO APPLICABLE LAWS AND REGULATIONS.

- DISPOSAL TO ENVA (0) 57 867 8600
- COMPLETE WB REPORT ON INDICNET – WB-0705-01
- WB INSURERS TO BE NOTIFIED IN THE EVENT OF LARGE SPILL

Section 11 | Waste Management

Reference is made to the project **Waste Management Plan**.

From the available SI, it is apparent that there is a low risk of encountering **contaminated material** during excavation. The principal methodology for WBCL in assessing potentially contaminated soils on site shall be by use of effective visual and olfactory (odour) signs of contamination.

We will also take samples and test same during trial holing / utility diversion works to help us determine the likelihood of encountering contaminated material during shaft sinking.

If / when suspected contaminated material is encountered, this will be brought off site by a licensed haulier using covered tippers, and brought to a licensed facility such as Rilta Environmental, where further sorting and processing will be carried out prior to final appropriate disposal in inert / non-hazardous / hazardous landfills.

Material which is not thought to be hazardous will be tipped in a bunded area on site, in a location to be confirmed, where samples will be tested to confirm it is inert, and, provided it is, the material will be disposed of directly to landfill. If not, the procedure outlined above will be followed.

Records of waste removed from site:

Ward and Burke retain records of:

- Copies of all Waste Haulier Permits
- Copies of all Waste Facility Permits
- Copies of all Waste dockets for waste removed off site
- Copies of dockets from Waste Facility
- Any additional testing carried out to confirm the waste classification and landfill disposal routes;
- The confirmation by the landfill operators that they are authorised to accept the wastes;
- All wastes consigned from the Site;
- The end destination of the wastes, which in the case of hazardous waste means the facility at which the wastes are disposed;
- Certificates of acceptance and disposal of hazardous waste from the operator of the hazardous waste disposal facility;
- Records of all waste excavated and removed from the Site shall be maintained on Site and will be available for audit by the Employer or its representatives;
- A full waste log register will be kept on site for all waste removed, keeping track of all quantities etc.

Section 12 | Training, Communication, Awareness and Competence

12.1 Project Communications:

Communications will be both Internal and External

Examples of Internal Communications:

Examples of Form of communication:	Responsibility	Form of Communication
● Communications on site induction, company's significant aspects and impacts, hazards & risks and objectives and targets for continuous improvement. ● Company Management Systems to be communicated. ● Safety and Environmental Briefings, Toolbox Talks, Method Statements, SHEQ Alerts etc. ● Copies of company policies and information on legislation will be posted or available in strategic areas around the Office and on sites	Environmental Manager Safety Manager SHEQ Team Site engineers	Presentation Workshop TBT Safety Briefings Communication boards Site Inductions Workwize In house training
● Training and Work shops	Environmental Manager Safety Manager SHEQ Team Site engineers	Training courses
● Risk Assessment and Hazard Control ● Aspects and Impacts ● RAMS ● TBT ● Workshops	Environmental Manager Safety Manager SHEQ Team Site engineers	SHEQ Documentation through TBT
● Incident and Accident Investigation	Environmental Manager Safety Manager SHEQ Team Site engineers	Incident or Accident report Meetings Emails Bulletins
● SHEQ Bulletins	Environmental Manager Safety Manager SHEQ Team Site engineers	Emails TBT Notice Boards
● Site Management – Programme Review, cost management, project performance delivery, KPI Monitoring, planning works, investigation of any incidents	Company Directors Environmental Manager Safety Manager SHEQ Team Site engineers Quantity Surveyor	Meetings Emails Conference calls Teams / Zoom Reports

Examples of External Communications:

Parties	Name	Examples of Form of communication:	Responsibility	Form of Communication
External	Client	Pre-commencement meetings, progress meetings, site audits and close out of same etc	Directors Site Agents Site Engineers Environmental Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
External	Designers – Appointed PSDP	Design Meetings Design workshops Meeting Minutes and actions	Site Agents Site Engineers Environmental Manager Safety Manager SHEQ Team	Meetings Workshops Emails Letter
External	Regulatory Authorities (HSA, EPA)	Site inspections and close out of same, reports	Site Agents Site Engineers Environmental Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
External	Client Audits	Site Inspections and Audits	Site Agents Site Engineers Environmental Manager Safety Manager SHEQ Team	Meetings Emails Letter Reports Close out of audit / inspections
External	Stakeholders	Presentations, meetings, regular notification updates on works progess	Community Liaison Site Engineers	Meetings Emails Letter VMS Boards Signage Websites and QR Codes Close out of complaints
External	General Public	Open evening meetings, letter drops, VMS boards etc.	Community Liaison Site Engineers	Meetings Emails Letter VMS Boards Signage Websites and QR Codes Close out of complaints
External	Interested parties	Meetings, Presentations	Directors Site Agents Site Engineers	Meetings Emails Letter Presentations Workshops

External	Certification Bodies	Audits	The Director/Management Representative will address all communications with certification bodies. The Health & Safety Manager/Officer will represent the Director as required.	Site Inspection Site Tours Meetings Emails Letter

12.2 Project Inductions

The Project SHQE Manager/Adviser will identify and arrange environmental induction sessions as necessary for Project personnel. During the project induction the requirements of this environmental plan will be explained and discussed as well as any changes to the normal method of working which have been identified for the project. Ongoing induction requirements will also be identified during facilitation audits. The induction will include information relating to the environmental aspects identified on the project such as;

- Specific Environmental Requirements for the contract
- Working SAC
- Biodiversity – Birds, Badgers, Bats etc.Invasive plant species
- Environmental Sensitivities for the contract
- Potential archaeological finds
- Waste management and segregation
- Spill response
- Refuelling procedures
- Plant, equipment requirements
- Tree and hedgerow protection
- Water borehole protection.

12.3 Environmental Training

The Project will ensure that in accordance with the SHQE Training Matrix all environmental training requirements are identified and a training programme developed.

In house training on environmental management will be carried. Examples of training that will be carried out will include:

- Chemical Management
- Spill Management
- Concrete management
- Surface Water Management
- Noise and Vibration Management

Potential training may develop from non-conformances on site.

12.4 Tool Box Talks

Regular environmental toolbox talks (team briefings) will be carried out on site by relevant project personnel. Subjects covered may include:

● Waste Segregation and Management	● Emergency Response
● Handling of Materials	● Housekeeping
● Refuelling	● Flora/Fauna
● Spill Prevention	● Aqueous Discharges

A library of Environmental Toolbox Talks is available on *SHAREPOINT* Head Office.

Section 13 | Biosecurity Management on site

Biosecurity is defined as the procedure and mitigation measures put in place on a site to protect the area against harmful biological or biochemical substances - Securing the biodiversity in which we are working.

To prevent the spread of invasive species between sites there are a number of steps we need to take.

1. We need to assess our Pathways
    a. Pathways are the means by which species are transported from one location to another. There are 2 forms of Pathways:
        - **Natural pathways** include wind, currents, and other forms of dispersal.
        - **Man-made pathways** are those pathways which are enhanced or created by human activity. These are characteristically of two types – **Intentional or Unintentional**
    b. **Intentional Pathways:** This is the result of a deliberate action to translocate an organism. Examples of intentional introductions include the intended movement of living seeds, whole plants, or pets. Aquaculture.
    c. **Unintentional Pathways:** Examples of unintentional pathways are ballast water discharge (many species), importation of fruits and vegetables (e.g. plant pests), and the international movement of people (e.g. pathogens). In these and countless other unintentional pathways the movement of species is an indirect by-product of our activities.
2. We then need to decide on what our Vectors on site are:
    a. A pathway is the pathway through which an organism is transferred (e.g. boating or horticultural industry) and a **vector** is the mechanism of that transference e.g. ballast water, angling gear or horticultural equipment
    b. Examples of Vectors that can be on site:
        i. Excavators
        ii. Scaffolding
        iii. Pontoons
        iv. Boats
        v. Diving Equipment
        vi. Construction Equipment
        vii. PPE
3. So how do we ensure no spread of species:
    a. Wash, disinfect and dry all equipment on site in designated wash down areas.

Also reference: http://www.fisheriesireland.ie/fisheries-research-1/73-biosecurity-protocol-for-field-survey-work-1/file

Section 14| Complaints procedure

DOCUMENT:	ENVIRONMENTAL COMPLAINTS REPORTING PLAN	WARD & BURKE
CONTRACT:	MAIN CIVILS & CAPITAL DREDGING WORKS FOR ROS AN MHÍL DEEP WATER QUAY (DWQ)	An Roinn Talmhaíochta, Bia agus Mara Department of Agriculture, Food and the Marine

WARD AND BURKE COMPLAINT MANAGEMENT SYSTEM

COMPLAINT PROCEDURE

PEOPLE WHO MAY MAKE A COMPLAINT:

- Galway County Council
- Harbour Master
- Aran Island Ferries
- Irish Coast Guard
- Udaras na Gaeltachta
- Rossaveel Ferry
- Charter Island
- Iasc Mara Teoranta
- Local Landowners
- Local Residents
- Business Traders
- Individuals
- Department of the Environment, Community

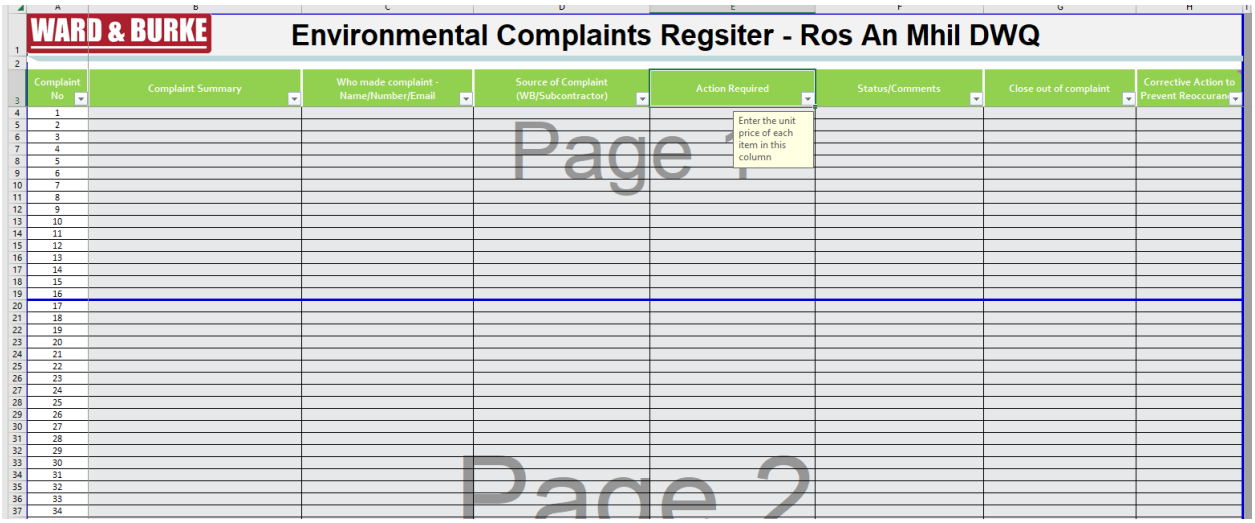
HOW CAN A COMPLAINT BE MADE:

- Site Emergency Number will be in place on external site fencing
- Site Emergency email address will be in place on external site fencing

HOW A COMPLAINT WILL BE DEALT WITH ON SITE

RECORDING OF COMPLAINT	INVESTIGATION OF COMPLAINT	RECTIFICATION / CLOSE OUT OF ISSUE	RESPONSE TO COMPLAINANT
- COMPLAINT WILL BE RECORDED ON - ROS AN MHIL DWQ_ENVIRO COMPLAINTS REGISTER BY SITE ENVIRONMENTAL MANAGER	SITE ENVIRONMENTAL MANAGER WILL INVESTIGATE THE COMPLAINT WITH THE SITE ENGINEERS TO GET TO THE ROOT OF THE CAUSE	SITE ENVIRONMENTAL MANAGER WILL WORK TO CLOSE OUT THE COMPLAINT RAISED.	SITE ENVIRONMENTAL MANAGER CONFIRM CLOSE OUT OF COMPLAINT WITH COMPLAINANT EITHER VIA PHONE CALL / EMAIL
- COMPLAINT WILL BE NOTIFIED TO THE CLIENT REPRESENTATIVE ON SITE	MEASURES WILL BE PUT IN PLACE TO PREVENT REOCCURRENCE OF SAME	SITE TEAM WILL AIM TO CLOSE OUT ANY COMPLAINT WITH IN 24 HOURS (BUT SOME MAY GO OVER THIS IF ADDITIONAL EQUIPMENT / RESOURCES REQUIRED TO CLOSE OUT SAME)	

Figure 7 - Rossaveel DWQ - Complaints Procedure



WARD & BURKE

Environmental Complaints Regsiter - Ros An Mhil DWQ

Complaint No	Complaint Summary	Who made complaint - Name/Number/Email	Source of Complaint (WB/Subcontractor)	Action Required	Status/Comments	Close out of complaint	Corrective Action to Prevent Reoccurance
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Enter the unit price of each item in this column

Page 1

Page 2

Figure 8 - Rossaveel DWQ- Enviro Complaints Register