CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

Manorhamilton Fire Station.

Report produced by Woodrow APEM Group.

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DOCUMENT CONTROL

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STATEMENT OF AUTHORITY

This report is written by Patrick Quinn, an Ecologist with Woodrow Sustainable Solutions (WSS). He has completed an honours B.Sc. in Environmental Science, a degree in Environmental Protection and a Higher Certificate in Science in Fisheries Management. Patrick is an associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and also the Institute of Fisheries Management (IFM). He regularly carries out reporting on Appropriate Assessments carried out by statutory authorities. Furthermore, the author has experience in habitat and bird surveys for a number of large infrastructure schemes, commercial and residential projects. Patrick is also an experienced Ecological Clerk of Works (ECoW) for transmission line and wind farms construction and is a full member of the Environmental/Ecological Clerk of Works (AEECoW)

The report has been approved by Will Woodrow. Will is a Director at Woodrow Sustainable Solutions. He is an experienced ecologist with over 30 years of experience in ecological surveys and assessment. Will is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Ecologist.

Patrick Quinn – Qualifications:

B. Sc. (Hons) Environmental Science, Institute of Technology, Sligo, 2015.

B. Sc. Environmental Protection, Institute of Technology, Sligo, 2014.

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1 INTRODUCTION

Woodrow Sustainable Solutions has been instructed by Rhatigan Architects on behalf of the Applicant Leitrim County Council to prepare this Construction Environmental Management Plan (CEMP). This plan is to inform an application under Section 177 (AE) of the Planning & Development Act 2000 (as amended) to An Bord Pleanála, for a new Fire Station in Manorhamilton, Co Leitrim.

1.1 Construction Environmental Management Plan (CEMP): Aims & Objectives

This Construction Environmental Management Plan (CEMP) has been developed in accordance with the:

- Institute of Environmental Management and Assessment (IEMA) Practitioner "Environmental Management Plans", Best Practice Series, Volume 12, December 2008 and;
- follows the general guidance as set out in Biodiversity — Code of practice for planning and development BS42020 clause 10.2 as stated with the Chartered Institute of Environmental and Ecological Management (CIEEM) guidelines for ecological report writing Second Edition December 2017

This CEMP should be considered a live document which will be developed further and / or amended where necessary to take account of any information which may be made available from additional consultations, site surveys etc.

The CEMP will form part of the pre-commencement and construction works contract. The Developer and Contractors will take account of the structure, content, methods and requirements contained within the various sections of this CEMP as required by the Contract.

While the current version of the CEMP provides a benchmark for good practice, where avoidance or further minimisation of risks to the environment can be demonstrated through use of alternative methods or improvements to current practices, the Developer and Contractors will implement these wherever possible.

1.2 CEMP Development & Implementation

The CEMP takes into account requirements of the Natura Impact Statement Woodrow (2022).

The CEMP remains a live document on site and will be developed further by the Contractors with site specific method statements and plans as required prior to each phase of the works. It is also effectively a document management system for recording information and data relating to environmental checks, reports, surveys, monitoring data and auditing. Upon completion of the works, the Contractors will submit a complete soft copy of the most up to date CEMP including all audit forms and records / file notes to the Developer for their records.

While version numbers will remain fixed depending on the stage of the project, it is acknowledged that the CEMP is a continually evolving document which can be updated in part or whole at any stage of the project. Hence, revision and document distribution records are included at the front of each CEMP document to enable individual documents to be updated at any time.

1.3 CEMP Roles & Responsibilities

This CEMP has been prepared by Woodrow Sustainable Solutions Ltd APEM Group. The Developer and Contractors will be responsible for further development of the CEMP in line with mitigation requirements. This may involve liaison with statutory bodies (only following notification to the Employer of intention to do so) where appropriate. Detailed primary environmental roles and responsibilities are provided in Section 3.3.

Prior to commencement of works, the Contractors will appoint an **Environmental Manager (EM)** for the project, who shall be responsible for the development of the CEMP, and arising procedures and documents. The EM shall be responsible for ensuring that site procedures are implemented, that records are maintained as required and that construction staff have appropriate training and competence for implementing their CEMP functions. The Contractor will also nominate a **Site Environmental Supervisor** who will be responsible for the implementation of the plan, record keeping, and maintenance of mitigation measures, Contractor's site environmental auditing and Contractor's site environmental work permits. The EM shall have the necessary authority to propose alternative or additional work methods necessary to satisfy any environmental aspect of the Works (to be agreed with the Developer in advance any changes).

The Environmental Manager will also review the Contractor's method statements and environmental plans as required by the CEMP, carry out compliance auditing during the construction phase and coordinate the site meetings with the Developer as required. The Contractors will accommodate any third-party environmental auditing, as appropriate.

1.4 CEMP Structure

The CEMP is divided into discreet sections which are designed to be filed as separate documents / folders if required.

A copy of the CEMP documents / folder(s) will be kept in the site offices for the duration of the site works and will be made available for review at any time.

Upon completion of the construction works, the Contractors will submit a complete soft copy of the most current CEMP to the Developer for their records. This final CEMP will include electronic scans of all hard copy reports, data, field records and correspondence which are gathered over the course of the construction works.

Notwithstanding the above, the initial draft of the CEMP is intended to cover all environmental requirements and is considered to cover the minimum environmental standards and considerations required.

A key part of this CEMP is Section 5 'Technical Schedules'. This section provides details on specific environmental requirements arising from compliance documents such as the Natura Impact Statement in differing work areas. It is imperative that these requirements are complied with, and appropriately captured in all working practices and any future amendments to method statements.

2 PROJECT INFORMATION

2.1 Site Location and Project Description

Table 2.1 below provides general information on the project and describes the work to be completed.

TABLE 2.1 General Project Information	
Project Name:	Manorhamiltion Fire Station, Manorhamilton, Co. Leitrim
Site Location:	The proposed development is situated to the west of Manorhamilton town on the N16. Figure 1 shows the location of the development boundary. The site lies within 116m of nearby Bonet River and is almost entirely situated within Lough Gill SAC. The site slopes towards the north west at a gradient of 1:26.
Project Description Brief:	The proposed fire Station is to house 2no. fire appliances and approximately 11-13 staff members. The design has been refined to ensure accommodation is efficient and economically sized. The proposed building is two storey-with a butterfly roof. The accommodation sits to both sides of a double height garage space. The current height of the proposed building is c.8.0m tall at the tallest point. The proposed development is displayed in Figure 2. An asphalt surface is to be provided to the car park and drill yard with a metal security fence bounding the drill yard. The site will contain an attenuation lagoon to collect surface water runoff from the site. The green areas are proposed to be sown with tall wild grasses for screening and environmental purposes.
Study Area Description:	The proposal is situated within habitats that are classified as wet grasslands (GS4). The majority of the site is within the Lough Gill SAC and so connectivity exists between the proposed works and this European site. Lough Gill is also a proposed Natural Heritage Area (pNHA) also and so connectivity exists between the proposed works and this nationally designated site.
Vehicle access	The proposed construction site will be accessed via the existing gate to the northeast of the site.
Study Area Layout	During construction there will be a contractor's site compound with temporary fencing and site huts for the duration of the construction works

Figure 1: Site location with Lough Gill SAC and the Bonet River

Figure 2 –Proposed development and ancillary works

2.2 Construction Phase

The proposed construction works will be broadly divided into 5 separate phases.

1. Establishment of site compound. This will take place adjacent to the existing gate to the northeast of the of site and will act as a construction access point. Works will consist of site clearance and the erection of temporary fencing and site huts. The process, which will involve site clearing machinery and personnel vehicles is expected to last a duration of 2 weeks.

2. Site clearance (building location). This stage will involve site clearing machinery and is expected to last for a period of 4 weeks.

3. Establishment of site drainage network. This will involve the use of diggers and the laying of piping and filling material, expected to last over a period of 4 weeks.

4. Building construction. This stage is expected to last a duration of 9 months and will include several distinct steps, involving the following machinery and materials;

- Excavations- Excavation machinery. Materials: fill
- Foundations- Excavation machinery, concrete trucks. Materials: fill and concrete
- Floor slab, block and steelwork- Concrete trucks, material delivery vehicles, scaffolding and crane. Materials: Fill, concrete, insulation, membranes, steel and blockwork
- External Façade, weathering and roof. Material delivery vehicles, scaffolding and crane. Materials: Cladding, roofing, insulation, windows and doors.
- Internal works and mechanical and electrical (M&E). Material delivery vehicles and internal scaffolding. Materials: Partitions, finishes and M&E

5. Site completion works- establishment of carpark, drill tower and fencing. This stage will involve the material delivery vehicles, a tarmac truck and roller. Material will include fill, concrete, tarmac and fencing line marking. The expected duration of this stage is 1 month.

2.3 Environmental Sensitivities

Statutory Protected Areas

The site is within the boundary of the Lough Gill SAC and connectivity exists between the proposed site and the downstream part of the SAC also including Lough Gill itself. This is via the Bonet River which is adjacent the site and it hydrologically connected to Lough Gill.

The Natura Impact Statement (NIS) for the proposal (Woodrow, November, 2022) provides for mitigation requirements to avoid the potential effects on European sites. The potential effects of the proposal on the Lough Gill SAC are indirect effects relating to potential changes in water quality and inappropriate dumping of waste arising from the construction works. Any pollutants released into the catchment as a result of the proposed works have the potential to impact on water quality of the SAC and impact on the populations of aquatic species for which the site is designated. These significant mitigation measures are to be incorporated into the construction phase.

Non-statutory Protected Areas

Lough Gill pNHA is designated for features such as natural eutrophic waters and also oak and alluvial woodlands.

Important Ecological Features

Watercourses

The proposed works is adjacent the Bonet River which is a watercourse with the potential to hold Annex species of interest and conservation value such as salmon, lamprey, white-clawed crayfish and otter. All of these species are Qualifying Interests of Lough Gill SAC.

2.4 Important Documents

The key document in respect to this proposal is:

- Woodrow (2022). NATURA IMPACT STATEMENT - Manorhamilton fire station, Co. Leitrim. November 2022

The requirements of this document is central to the delivery of environmental protection during the construction phase of this proposal. Table 2.2 provides an overview of the requirements of the NIS in terms of the construction phase and highlights the section of the CEMP that addresses them.

Best Practice documents as referenced within the NIS which must be incorporated into all stages of the construction phase and these include:

- IFI (2016). Guidelines on Protection of Fisheries during the Construction Works in and Adjacent to Waters.
- Loughs Agency (2015). Guidelines for Fisheries Protection during Development Works (Foyle and Carlingford areas). Environmental Guidelines Series – No. 1.
- CIRIA (2006). Control of water pollution from linear construction projects. Technical guidance (C648).
- SEPA (2010). Engineering in the Water Environment: Good Practice Guide: Sediment management.
- SEPA (2009). Engineering in the Water Environment Good Practice Guide: Temporary Construction Methods.
- NRW, NIEA and SEPA (2017). Guidance for Pollution Control. Works and Maintenance in or near Water. GPP 5.

TABLE 2.2 OVERVIEW OF NIS REQUIREMENTS AND COVERAGE IN CEMP	
NIS Section and requirement	**Section of CEMP and outline measures**
Mitigation of Sediment Pollution & Dumping	
Suspended solids and sediments must be controlled by both minimisation of and the creation of sediment laden run off, and also the control of suspended solids. Dumping activities can result in both an increase in sediment pollution and direct impacts (mortality) on QI species. • Weather forecasts will be monitored prior to and during works to avoid working in adverse weather conditions such as heavy rains.	TS5 – Pollution Control – Silt • Works not carried out in extreme rainfall • Silt traps and sediment ponds • Silt fences

• A marked buffer zone will be erected to prevent any unwanted access within 20m of the riparian zone of the Bonet River before works commence onsite. All land drains encompassing the site will be blocked prior to any works commencing onsite to prevent a pathway for sediments to discharge to the Bonet River. • No instream works are proposed as part of this Proposed Development and so no works will take place within the Bonet River. • There will be no vehicular access or any sort across the Bonet River. • There will be no dewatering of excavations to watercourses and or land drains. Any dewatering will be to a settlement tank and further filtration through a silt sock for discharge to a vegetated area. • There will be no stockpiling of spoils within 50m of the Bonet River at any time during the works. • For areas where stockpiling occurs (not within 50m of the Bonet River) a double layered silt curtain will be constructed around this stockpile to prevent the movement of solids towards aquatic environments. • Stock piling heights will be to Best Practice guidance on heights to prevent unwanted slippage of spoils after periods of rainfall.	• No dumping of waste to impact on the Bonet River
Mitigation of Hydrocarbon / Chemical Pollution	
The potential for hydrocarbons and other pollutants entering the watercourse and protected habitats during construction must be by both risk minimisation and an appropriate capacity for emergency response: • A complete mechanical check of all hoses and fluid reservoirs of machinery will be carried out by a competent member of the construction team before machinery arrives to site. • All machinery will carry a spill kit onboard for fast deployment in the event of a hydrocarbon leak or spill. • All fuels, lubricants and hydraulic fluids shall be kept in secure bunded COSSH store at a minimum of 50m from the river. Containers must be properly secured to prevent unauthorised access and misuse. • An effective spillage procedure must be put in place with all staff properly briefed. • Any waste oils or hydraulic fluids shall be collected, stored in appropriate containers and disposed of offsite in an appropriate manner. • Machinery will be refuelled on a hardstanding designated area with spill kits on hand and at least 50m away from the river. No refuelling will take place inside the 50m buffer zone. The refuelling will be by a designated fuel delivery vehicle or a double bunded bowser with hose dispenser. • Spill kits with an appropriate capacity for the contaminants used on site must be kept on site and within machinery and	TS4 - Pollution control – hydrocarbons, concrete and nutrient pollution (waste water) • Contractors will be required to check all fuel and hydraulic lines. • Spill kits • Refuelling protocol • Bunded storage areas

available throughout the dredging process. • Any portable generators or non-bunded engine driven machines will have a hydrocarbon nappy underneath them at all times to prevent leakage from machinery to the environment. • A hydrocarbon oil boom must be available on site for immediate deployment within the river in the event of any hydrocarbon spillage at the site. A fuel spillage will be considered to be any loss of fuel, oil or lubricant, including hydraulic oil and spot leakage. • No concrete washout will be permitted onsite unless to a designated bunded concrete washout area that is not within 50m of any watercourses or drains. • Any operations in the vicinity of watercourses must adhere to Guidelines on Protection of Fisheries during the Construction Works in and Adjacent to Waters, • IFI and Guidelines for Fisheries Protection during Development Works (Foyle and Carlingford areas) Environmental Guidelines Series – No. 1. Loughs Agency.	
Mitigation of Nutrient Pollution (Wastewater)	
There must be no potential for wastewater to enter surface waters and or ground waters during the construction phase of the Proposed Development. • Self-contained and frequently maintained Portaloos will be used onsite and so no discharge of wastewater to the environment will occur. • Self-contained and frequently maintained site welfare units for workers will be used onsite where grey water will be stored and not discharged to the environment.	TS4 - Pollution control – hydrocarbons, concrete and nutrient pollution (waste water) • Portaloos available onsite • Maintenance of welfare units
Mitigation of Disturbance to Otter During the Construction phase	
The Prosed Development is situated on the fringe of an urban setting and so there is already background disturbance that exists within this setting. • No direct lighting will be positioned to cause the Bonet River to become highlighted during nocturnal hours when otters may be active during the construction phases of the Proposed Development. • Any excavated holes within the Site must be covered at the end of every working day to prevent an otter getting injured / trapped when using the Site for commuting during nocturnal hours.	TS8 – Protected Species • Working practices

2.5 Project Amendments

"Project Amendments" will be recorded in Table 2.3. These amendments do not include changes to the project design which are completed in accordance with the existing planning consent; instead, this refers to any project changes or amendments for which additional approvals and / or consents may be required from the Planning Authority.

The purpose of recording Project Amendments here is to provide a record of any changes in the design and siting of the overhead line infrastructure such that any associated environmental impacts and mitigation measures may be appropriately instigated through this CEMP.

TABLE 2.3 PROJECT AMENDMENTS

Ref.	Date	Project Amendment Description	Environmental Sensitivities potentially Impacted by Project Amendment.

Drawings and other information relevant to project amendments and variations should be inserted in this section (section 2.5)

2.6 Register of Variations

Where any amendments and variations to the Technical Schedules and CEMP are required (either as a result of Project Amendments or through corrective actions or improvements noted and undertaken on site) these will be recorded in Table 2.4, Register of Variations. Furthermore, all changes to construction methods, design, mitigation and the implications of these changes and authorising personnel will be recorded in the table below.

TABLE 2.4 REGISTER OF VARIATIONS

No	Variation Description	Authorising Personnel	Completion Date

3 COMMUNICATION PLAN

This section of this CEMP builds on the Employer roles details in Section 1.3 and highlights contact details of relevant personnel including Employer, Contractor, sub-contractors and statutory bodies where appropriate.

3.1 Primary Environmental Roles and Responsibilities

Primary roles and responsibilities for environmental management, monitoring and reporting are detailed in Table 3.1

Table 3.1 Primary Environmental Roles & Responsibilities

Position	Roles & Responsibilities
Construction Environmental Manager	The Construction Environmental Manager will: • Ensure that the *Contractor* has obtained the relevant approvals and licenses and consents from regulatory bodies and statutory consultees where required. • Ensure that the *Contractor* has submitted all relevant documentation to the Site Environmental Supervisor • Liaise with the Site Environmental Supervisor and ensure that corrective actions and variations to the CEMP have been instigated. • Be a member of the Environmental Management Group.
Site Environmental Supervisors	The Site Environmental Supervisors will: • Provide liaison between statutory agencies and the contractor where environmental sensitivities, instruction for environmental performance improvements or corrective actions are requested by the statutory agencies, Construction Environmental Manager, HSEQ officer or other appropriate person(s) as a result of environmental checks or audits conducted by these people(s). • Provide liaison with the Employer Project Manager on all environmental issues on site, including works required, audits and close-outs. • Ensure that all notifications of environmental sensitivities and incidents as well as other general observations on environmental performance are reported back to the Construction Environmental Manager. • Be responsible for review and further development of the CEMP. • Ensure on-site compliance with the requirements of Planning Conditions and documentation, including Construction Methodology,
Health, Safety, Environment and Quality (HSEQ) Officer /	The HSEQ Officer / Manager will: • Be responsible for maintaining records of toolbox talks and any environmental audits undertaken and

Manager	for delivering site inductions. • Maintain records of audits and ensure close-out of environmental issues.

Emergency contact details and details of Stakeholders for the development are listed in Section 3.5.1.

3.2 Contacts Sheet

Table 3.2 provides a list of all pertinent personnel responsible to complete environmental roles. This table should be updated and kept current by the Contractor for the duration of the Contract.

TABLE 3.2 CONTACT DETAILS					
Role	**Company**	**Position**	**Name**	**E - Mail**	**Telephone**
EMPLOYER - Site Management	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*
EMPLOYER - Design	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*
CONTRACTOR - Environmental Manager (EM)	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*
CONTRACTOR - Site Environmental Supervisor	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*	*TBC prior to preconstruction stage*

3.3 Meetings, Audits, Reports and Consultations

Table 3.3 lists all meetings and consultations required. The Table also provides details on the schedule/frequency, scope & objectives and attendees / responsibility for each meeting.

Table 3.3 MEETINGS, REPORTS AND CONSULTATIONS.			
Meeting/Report	**Schedule/ Frequency**	**Scope & Objective**	**Attendees/Responsibilities**
A record of all meetings, checks, permissions and licenses will be retained within Section 4 of this CEMP.			
Site Inductions	All new site personnel and visitors before commence work on site.	To ensure all personnel understand and follow all environmental methodologies as per the requirements of the site	Contractor to organise and maintain records.
Tool Box Talks	At each different phase of the construction at least monthly intervals	To ensure operatives understand and follow all methodologies to protect and safeguard the environmental sensitivities of the site. New or corrective actions to be highlighted as they arise.	All operatives identified by the Contractor Environmental Manager.
Routine Environmental inspections	Daily – Contractor Weekly – Contractor Before and After Heavy Rainfall –	Environmental checks / audits are intended to ensure that sufficient measures are in place to protect watercourses, avoid impact on important habitats and protected species and to ensure that best environmental practice is applied. • Daily checks by Contractor to ensure the efficacy of water pollution prevention measures and buffer zones e.g. checks for visual evidence of contamination / sediment alongside watercourses, nearby working areas and in areas of surface water discharge. • Daily Inspection of drainage and erosion and sediment control measures • Weekly inspections by Contractor of all storage	Routine (daily, weekly, monthly and before & after heavy rain) environmental checks will be carried out by the contractor's Site Environmental Supervisor, or another delegated to complete this task with the necessary skillset. Contractor or any other interested party at any time during the works. Routine checks and monitoring will be carried out by sub-contractors as required.

	Contractor	areas on site. This would include regular checks of all plant and equipment to identify any oil or fuel leaks to confirm the condition of the plant.	
Environmental Checks and Monitoring of Mitigation Works	Weekly during construction works by Site Environmental Supervisor	There will be **weekly meetings and inspections** and review of site works. The EM would review mitigation measures and construction methodologies This will comprise an on-site meeting / inspection to confirm the appropriate use of identified mitigation measures and highlight any further issues / measures which may be relevant prior to commencement of works in any area. • Environmental checks will also encompass a review of: – Waste management procedures; – General site tidiness; – Temporary materials storage (extracted materials stockpiles) and restoration works;	Environmental checks will be undertaken by Contractor or monitoring personnel, supervised / directed by the EM where appropriate. The EM will retain a record of all inspections / findings of Environmental Checks within Section 4 of this CEMP. All records will be made available for audit / review. All records will also be made available for discussion during regular meetings as scheduled.

3.4 Reporting Procedures

The Contractor will update this information as part of the detailed CEMP which will include:

Mitigation Reports –
The Contractor (s) is required to take prompt mitigation actions to address any adverse findings arising from environmental audits, and provide written reports to the Employer Project Manager detailing such mitigation

Verification Reports – submit in one month.
Specific incidents and reports arising during site works will be provided to the Employer Project Manager within one month of completion of activity and are subject to review.

Significant Events – 60 Minute notification to employer:
Where a significant event occurs requiring the involvement of the statutory authorities or emergency services, the Employer must be informed within 60 minutes

3.5 Emergency Communication Plan & Contact Details

This section outlines the actions to be followed in the case of an emergency. Section 3.5.2 outlines the communications to be followed in the event of a spillage or pollution incident. In all instances, the Employer Project Manager is to be contacted immediately.

3.5.1 Emergency Contact Details

This section outlines emergency contact numbers of pertinent personnel on site.

EMERGENCY CONTACT DETAILS		
EMERGENCY SERVICES		**999 OR 112**
Company / position	**Name / Address**	**Contact Numbers**
Site Engineer	TBC	TBC
Environmental Manager	TBC	TBC
Site Foreman / Site	TBC	TBC
Environmental Supervisor	TBC	TBC
HSEQ Manager / Officer	TBC	TBC
Employer Project Manager	TBC	TBC
Environmental Protection Agency	Report Pollution Incident – Such as water pollution incident or dumping on site, National Environmental Complaint's Line - 24 hours	1850 365 121
Inland Fisheries Ireland	Catherine E Kearns Drumsna, Carrick on shannon Leitrim	**1890 34 74 24 – Emergency Pollution Number** 071 9624218

		Carrick on Shannon Offices **Working hours only.**
Local Authority – Leitrim County Council	Aras an Chontae, St George's Terrace, Townparks, Carrick-On-Shannon, Co. Leitrim	071 962 0005
National Parks & Wildlife Services (NPWS)	Regional Manager (01) 539 3219	District Conservation Office - (01) 539 3227

3.5.2 Communication Plan in the Event of Spillage /Pollution Incident

In the event of a spillage or Pollution incident:

- Immediately contact the Environmental Manager and Site Engineer/Site Manager, even if the incident is contained;
- Cease all works at the incident site, with the exception of response control measures, until approval to continue is given by the Environmental Manager and Site Engineer/Site Manager;
- Have adequate materials, equipment and resources available on site to respond rapidly to any emergency situation;
- Immediately implement basic additional control measures such as containment of spills and repair of silt control measures.
- The Environmental Manager and Site Engineer/Site Manager will assess the impact of the event and undertake the following:
    - Immediately contact the Employer Project Manager;
    - Assess the level and likely duration of impact arising from the event;
    - Instruct the contractor in any additional measures required or changes to be made to ensure no significant impact on Natura 2000 Sites/sensitive ecological recptors occurs as a result of the event. This will include specifying the nature and location of the measure to be undertaken;
    - Advise the contractor on any clean-up, removal from site and disposal of spilled and contained materials and the manner in which this is to be undertaken;
    - Supervise the measures installation and site clean-up;
    - Notify, the NPWS, Inland Fisheries Ireland and Leitrim County Council Environmental section if in their view the incident which occurred constitutes a significant threat to the integrity of a Natura 2000 Site or aquatic ecology in the area;
    - Maintain an incident log book with written records of the incident, initial measures implemented, assessment of impact, additional measures recommended and implemented, predicted residual impact and timeframe for recovery, recommended monitoring and frequency and any notifications issued.

The Contractor will provide a detailed response plan to an environmental incident detailing what actions should be carried out in the form of a new Technical Schedule prior to the commencement of construction.

All personnel working on the construction site must be fully inducted in the requirements of the Construction Methodology and mitigation measures and in the contingency actions which must be taken if a pollution incident occurs or is likely to occur.

4 CORRESPONDENCE, RECORDS & REPORTS

4.1 Requirements – Environmental Procedures Manual

The Contractor is required to and will insert / file all communication records and reports associated with Environmental Management and implementation of this CEMP under this Section 4.

PROPOSED FILING SYSTEM:

4-A) Induction minutes, Tool Box Talks attendance record and Environmental Training

4-B) Environmental Reports

4-C) Environmental Checks

4-D) Audit Reports

4-E) Information, Public Complaints and Responses

4-F) Ecology

4-G) Pollution Prevention, including a Pollution Prevention Measures Register

4-H) Waste Management

4-I) General Correspondence: all other relevant internal and external communication records relating to environmental management issues and implementation of the CEMP.

4.2 Environmental Audits and Local Audit Manual

An environmental local audit manual will be collated and filed within this Section of the CEMP. This will consist of all completed audit report forms and records of corrective actions (and close outs). The responsibility for carrying out these audits lies with the Contractors' Site Environmental Supervisors as detailed in **Table 3.2**. The frequency of these audits is detailed in **Table 3.3.**

The Employer will also be undertaking regular audits of the Contractors and the work.
These audits, as well as records of corrective actions and close-outs, will also be held within the Environmental Audits and Local Audit Manual

5 TECHNICAL SCHEDULES

Various Technical Schedules have been prepared and a summary of these are listed in **Table 5.1**. These are intended to provide a benchmark for best practice and to define minimum requirements for environmental management and mitigation.

TABLE 5.1 LIST OF TECHNICAL SCHEDULES (TS)

TS No.	TS Title	Details / Contractor Requirements
TS1	**Staff Induction, awareness and training**	Contractors are required to provide environmental inductions and training as required, and to record details of attendees and subject matter of any toolbox talks provided. This is an essential aspect of ensuring that all CEMP requirements are made clear to all personnel.
TS2	**Protection of watercourses**	This TS sets out specific requirements for protecting watercourses from potential water quality impacts, including buffer zones required for specific locations.
TS3	**Excavations and spoil storage**	An appropriate approach to excavation and spoil storage is important for minimising damage to habitats and also for avoiding potential ongoing pollution through silt-laden runoff. This TS highlights requirements best practice with respect to specific approaches required for excavation and spoil storage.
TS4	**Pollution Control – hydrocarbons, concrete and nutrient pollution (water water)**	The works create a risk of pollution events from hydrocarbons and concrete by spillage in particular and nutrient pollution due to non-appropriate facilities. This TS highlights best practice and required approaches for hydrocarbon and concrete use during the work and also the prevention of nutrient pollution.
TS5	**Pollution Control – silt**	Control of silt is an important environmental measure, whether to avoid silt-laden water entering watercourses and impacting on downstream ecology, or whether avoiding mineral silt from excavations settling on habitats and affecting the vegetation ecology. This TS highlights best practice and required approaches for silt control during the works.

TS6	**Waste Management**	This TS outlines what waste is anticipated on site, and requirements for waste audits and monitoring of its transfer and disposal as per the Waste Management Acts 1996, as amended.
TS7	**Storage & Handling of Hazardous Chemicals**	This TS sets out the requirements to avoid any potential pollution risk from chemical storage or pollution.
TS8	**Protected Species**	This TS sets out requirements to avoid impacts on foraging otter that may be in close proximity to the working site
TS9	**Environmental Incident Emergency Response**	This TS includes information on spill risk categories and provides details on the required approach to both reporting and clean up following a pollution incident.

5.1 TS1 - Staff Induction, Awareness and Environmental Training

	Construction Environmental Management Plan Technical Schedule No. **TS - 1**
Staff Induction, Awareness and Environmental Training	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

Site Induction, Awareness and Environmental Training

- All contractors, sub contactors and visitors to the site must have access to and be made aware of the Construction Environmental Management Plan (CEMP) as well as its contents and their responsibilities to deliver it.
- Key topics to include during the induction are the specific environmental / ecological risks and receptors associated with the required works (taking account of the specific role of the individual under induction), notably with reference to:
    - Site Constraints
    - Pollution prevention measures
    - Waste management
    - The role of the individual in spotting and reporting potential environmental issues or contraventions.
- Maps of site constraints to include environmental / ecological receptors and buffer zones are to be erected in welfare cabins throughout the site.
- A list of emergency contact numbers for onsite construction manager, environmental manager and statutory agencies (i.e. Inland Fisheries Ireland IFI, National Parks and Wildlife Service NPWS) in the event of an environmental incident.
- It will be the responsibility of the Site Environmental Supervisors to identify whether any staff require environmental training, and to ensure any such training is provided in order to allow full compliance with the CEMP and environmental mitigation required for the project.

Toolbox Talks

- Toolbox talks will be given prior to the commencement of works and at regular intervals such as sensitive working areas and or changes in work practices or personnel.
- A toolbox talk will be provided to all key staff at the commencement of each construction phase. This will include a briefing on the sensitivities and associated Technical Schedules and method statements.
- All personal attending toolbox talks will sign on to a toolbox talk sheet to include printed name and signature, this is to avoid any confusion on the personal who attended these talks.
- Site management and the Employer's representative will be given copies of these toolbox talks to inform them on topics and sensitivities discussed.
- Records of these toolbox talks will be recorded within **Section 4** of this Construction Environmental Management Plan.

5.2 TS2 - Protection of watercourses

	Construction Environmental Management Plan Technical Schedule No. **TS - 2**
Protection and monitoring of watercourses	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

Measures required in order to protect watercourses include:

- Controlled access, excavation and storage of spoil
- Pollution control, including silt control and general pollution control
- Required buffer zones between watercourses and working areas
- Monitoring of works by the onsite environmental members

Buffers at Watercourses

In order to protect sensitive hydrological receptors - exclusion buffers will be applied to the existing drainage channels and the streams near the Proposed Development Site (unless they must be crossed to reach the Development infrastructure). The buffer comprises an offset of 20m in relation to drainage channels (in compliance with published guidance for works in comparable circumstances from Pollution Prevention Guidance PPG5 "Works and maintenance in or near water"[1]) and an offset buffer of 50m in relation to stream.

Within these buffer zones, there will be:

- No development of infrastructure, placement of any temporary infrastructure, excepting unavoidable works associated with the construction works.
- No unnecessary stripping/removal of vegetation. Immediate positive revegetation and silt control measures to be implemented if vegetation removal / stripping is unavoidable
- No spoil deposition or stockpiling of excavated material; and,
- No storage or use of chemicals, fuels, or other lubricants.

Other measures

In addition to prescribed buffer zones, watercourse protection will be achieved by general good practice measures aimed at avoiding impact on watercourses, as detailed in TS3, TS4, TS5 and TS8.

Measures required in these respects take account of the following Technical Schedules:

- TS3 - **Excavations and reinstatement**
- TS4 - **Pollution control – hydrocarbons, refuelling and chemical storage**
- TS5 - **Pollution control – silt**
- TS8 - **Environmental Incident and Emergency Response (EIER)**

[1] With particular reference to filter strips – vegetated sections of land designed to accept run off as an overland sheet flow. To be effective they should be 5 – 15 metres wide. Effectiveness would depend on the extent and nature of vegetation, slope across the strip, and slope / upstream catchment draining across the strip.

5.3 TS3 - Excavations and reinstatement

	Construction Environmental Management Plan Technical Schedule No. **TS - 3**
Excavations and reinstatement	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

An appropriate approach to excavation and restoration is important for minimising damage to habitats, creating optimal conditions for recovery, and also for avoiding potential ongoing pollution through silt-laden runoff.

This TS highlights the requirements and best practice with respect to specific approaches required for excavation and restoration.

Excavations

- All machinery and equipment to be used onsite must be free from adherent material and clean of debris before its arrival to the construction site.
- Before any excavations commence a detailed weather forecast should be sought from Met Éireann and no works should commence during heavy rains or in the event of heavy rains being forecasted.
- An onsite rain gauge should be onsite at the main compound to determine rainfall for the last 24hrs. This will help to ensure the protection of turves on their removal. If surface vegetation has become super saturated due to heavy rains, then these layers will be unstable and break apart during excavations. No excavations for 24hrs after heavy rains.
- All controls for the prevention of pollution should be in place prior to any excavations being undertaken, such as silt fencing and silt traps. **See TS 5 – Pollution Control – Silt** for full requirements.
- Clean water cut-off drains will be in place prior to any excavations in order to reduce the potential need for dewatering.
- Dewatering equipment should be onsite in the event of excavations needing to be dewatered, discharge from dewatering to be pumped to a settlement tank or vegetated areas through a silt sock prior to discharging to the environment. No direct discharging to watercourses or the environment is permitted. **See TS 5 – Pollution Control – Silt for full requirements**.
    - Excavations should be reinstated as soon as possible and materials covered in the event that they must be left out overnight.

Note – there will be no active dewatering of excavations to dirty water drains, as sediment ponds are not designed to take water at a pumped rate. All excavation dewatering will be agreed between the Site Manager and the ECoW with options including dewatering to contained silt fence areas outside watercourse buffers or active sediment removal, such as by using silt socks.

- Reinstatement of materials should take place as soon as practically possible to prevent excavations from becoming waterlogged.
- No materials should be allowed to enter the excavation site other than originally excavated materials

5.4 TS4 - Pollution control – hydrocarbons, concrete and nutrient pollution (waste water)

	Construction Environmental Management Plan Technical Schedule No. **TS - 4**
Pollution control – hydrocarbons, concrete and nutrient pollution (waste water)	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

The requirements detailed below include mitigation measures detailed within the NIS for the project.

GENERAL POLLUTION CONTROL MEASURES - HYDROCARBONS

To reduce the risk of water pollution due to hydrocarbon releases, the listed measures are required.

Site Inspections and Spill Kits:

- Contractors will be required to check all fuel and hydraulic lines, service, and document all machinery prior to the commencement of construction and check all fuel and hydraulic lines on plant daily.
- Spill response apparatus and infrastructure will be inspected on a regular, **fortnightly,** basis to ensure that the kits are fully stocked and materials are of adequate condition, and where this is not the case, kits should be replenished or replaced. Spill kits shall be fitted with break seals and site operatives (permanent or contractor) shall be required to notify the site manager if these seals are broken.
- Spill kits will be maintained at all fuelling and oil storage locations. All mobile fuelling and oil bowsers/tankers shall have full spill kits, appropriate to their capacity. All machines that utilise hydraulic systems, such as excavators, dumpers, and cranes, shall have appropriately sized spill kits onboard at all times. All machinery must have a spill-kit with sufficient hydrocarbon pads, booms and contaminated waste bag for immediate use in the event of a hydrocarbon spill.
- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of each vehicle and operators will be fully trained in the use of this equipment. An oil spill response plan will be developed for the construction works.

Refuelling locations & procedures:

- Any refuelling and or the replacement of any hydraulic fluids, substances or parts for machinery must be carried out in designated, bunded areas within the main compound and not onsite where reasonably practicable. A double skinned mobile fuel bowser and a drip tray under the refuelling point may be used to deliver fuel if it is not possible to use the main compound.
- All operators of machinery must be trained on how to use and importantly dispose of spill kits in the event of a hydrocarbon spill.
- All refuelling must take place on impermeable surfaces.

Storage of Hydrocarbons:

- Fuel, hydraulic oils and lubricants will be stored in bunded areas (in accordance with established best practice guidelines) at the Contractor's Temporary Compound.

GENERAL POLLUTION CONTROL MEASURES - CONCRETE

Concrete is highly toxic to aquatic species due to its alkalinity where the chemical composition of the receiving water bodies is changed due to the lowering of the pH value. The listed measures below are required to prevent contamination from concrete spillages.

Concrete pouring and deliveries

- All concrete will be delivered to site by concrete vehicles and delivered directly to the foundations.
- Concrete pouring will be undertaken on dry days.
- The pour site must be free of standing water prior to concrete delivery and plastic covers must be ready in case of sudden rainfall event
- Supervision for all concrete deliveries and works are key.
- Batching of concrete is not permitted onsite.

Concrete Spills

- Quick action is important so all site personnel should be briefed to be proactive in the event of a concrete spill bearing in mind their own safety at all times.
- Appropriate materials such as geotextile membranes and plastic sheeting should be available onsite in the event of a spillage.
- Emergency contact numbers for specialist spill contractors in the event of a spillage are available. *For example: Breaffy, Castlebar, 094 904 439; Rilta - 01 401 8000; Verde - 1890 20 10 20*

Concrete Wash-out

- Only the concrete lorry's delivery chute will be washed on site, the internal drum of concrete lorry will be washed out when they return to their depot. A collection tank will be onsite to allow the delivery chute to be washed into. This will collect all waste materials from the chute and the wash out amounts will be very small. Site supervisor to ensure that tank does not over fill. No washing to take place close to streams or open drains.
- Contractors will be required to tanker off site any concrete wash waters and these waters will not be allowed to be discharged to surface or ground waters.

GENERAL POLLUTION CONTROL MEASURES – NUTRIENTS (WASTE WATER)

There must be no potential for wastewater to enter surface waters and or ground waters during the construction phase of the project, the listed measure are required:

- Self-contained and frequently maintained Portaloos will be used onsite and so no discharge of wastewater to the environment will occur
- Self-contained and frequently maintained site welfare units for workers will be used onsite where grey water will be stored and not discharged to the environment.

Under no circumstances dispose of this type of waste in general waste containers.

Section 3.5.3 outlines the line of communications to follow in the event of a spillage / pollution incident. TS 8 outlines in detail what to do in the event of an environmental incident

5.5 TS5 - Pollution control – silt.

	Construction Environmental Management Plan Technical Schedule No. **TS - 5**
Pollution control – silt.	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

Works will not be carried out during extreme rainfall. Met Éireann provides a 5-day weather forecast via its website (www.met.ie). This will reduce the risk of silt mobilisation during the works.

Silt trap and silt fence material will be constructed using a permeable filter fabric such as Hy-Tex Terrastop Premium silt fence or similar. Recommended installation methods for this can be found here https://www.hy-tex.co.uk/docs/geotextiles/Terrastop/T_Terrastop_03.pdf .

Silt traps and sediment ponds

Silt traps are not considered to be likely to be required at the site but may be deployed in dirty water drains created for the works if deemed necessary by the project manager in order to reduce sediment loading in the sediment ponds. However, all dirty water drains will be directed to a sediment pond, as shown in Figures 5 and 6.

The efficacy of sediment ponds will be reviewed throughout the construction period. If they are deemed not to be achieving a sufficient reduction in sediment loading, alternatives will be assessed and put into place. These may include amendment of sediment pond structure / capacity or the use of active sediment removal, such as with a silt buster or silt socks as a temporary measure.

Note – there will be no active dewatering of excavations to dirty water drains, as sediment ponds are not designed to take water at a pumped rate. All excavation dewatering will be agreed between the Site Manager and the Environmental Manager with options including dewatering to contained silt fence areas outside watercourse buffers or active sediment removal, such as by using silt socks.

Silt fences

Silt fences will generally be put in place by hand and will conform to manufacturer's installation requirements, notably being fully dug in. There will be strictly no installation of silt fences by machine within watercourse buffer zones in order to ensure no potential for vegetation damage in these areas.

Silt fencing will be used as 'splash fences' adjacent to drain and watercourse crossings to avoid the transfer of silty water from the track to watercourses during vehicle movements. The Project Ecologist in liaison with the Site Engineer/Site Manager will inspect locations where drains will be crossed during the works order to design silt control methodologies.

Other measures

In addition, the contractor is required to maintain a backup of silt control materials, including silt fencing material, and to provide a role to supervise and maintain silt control measures,

and monitor their effectiveness, in liaison with the Environmental Manager and with the Site Engineer/Site Manager. The EM is required to plan for contingency measures in the event of mitigation failure or underperformance.

To this effect, it is recommended that the Environmental Supervisor maintains a Pollution Prevention Register, including notes and photographic evidence (noting efficacy, failure / underperformance, and action taken) for each silt control structure on a daily basis while works are active at each structure.

5.6 TS6 - Waste Management

	Construction Environmental Management Plan Technical Schedule No. **TS - 6**
Waste Management	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

The general methods and principles detailed within this document will be adhered to by the contractor as they are committed to reduce the resources used in the construction project.

Waste Prevention & Waste Regulations:

There are Irish regulations of note in the production of this Technical Schedule:

- Waste Management Act (WMA) 1996 as amended including waste regulations made under the Acts;
- A Resource Opportunity, Waste Management Policy in Ireland. Dept of Environment, Community & local Government. 2012.
- The Waste Management (Hazardous Waste) Regulations 1998 (S.I. 163 of 1998) stipulate general conditions for the management of hazardous waste.
- The Carriage of Dangerous Goods by Road Act 1998 (No. 43 of 1998) and associated Regulations outline conditions for the transport of hazardous waste.

Pertinent Reference Materials relating to Best Practice

- Other reference materials that are considered pertinent to 'Best Practice' include: Best Practice Guidelines in the Preparation of Waste Management Plans for construction and demolition projects. Department of the Environment, Heritage & local Government. June 2006.
- Design out Waste. A design team guide to waste reduction in construction and demolition projects. EPA. With particular reference to the fact sheets in this guidance:
  - FS2 Principles for Designing out Waste
  - FS3 Procurement and Tendering for Waste Reduction
  - FS4 Reuse and Recycling Opportunities
  - FS5 Materials Optimisation and Standardisation
- UK Pollution Prevention Guidelines: PPG06 Working at Construction & demolition sites
- EU Directives: Article 4 of Waste Framework Directive (Directive 2008/98/EC) This sets out five steps for dealing with waste as shown in Figure 7.

Figure 7 - Waste Management Priority Hierarchy that contractors are obligated to apply under the EU Waste Framework Directive.

The waste management hierarchy applies to all waste, including hazardous waste. The top of the triangle indicates that the priority should be in preventing waste being produced in the first place.

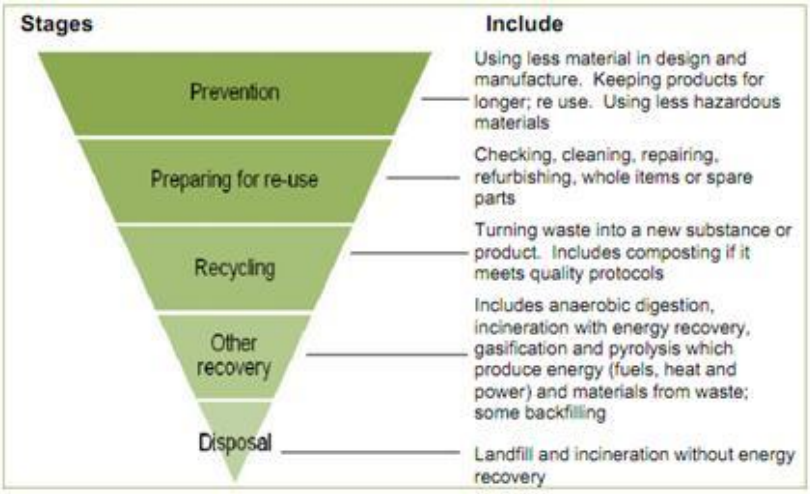
Benefits of Waste Prevention.

The contractor is committed to preventing waste through implementing reduction and effectively managing resources from the design stage of construction to the completion of the construction of the project. This will ensure that:

- Legal obligations are met
- Waste production is minimised.
- Build costs are minimised.
- A framework for continuous assessment and best practice is implemented.
- Carbon emissions and negative environmental impacts of and from waste materials are reduced.

Figure 8 explains this in more detail. The least favoured option is to dispose of waste to landfill where embodied energy is not recovered.

Figure 8: Detailed explanation of the Waste Hierarchy.


Stages
Include
Prevention
Using less material in design and manufacture. Keeping products for longer; re use. Using less hazardous materials
Preparing for re-use
Checking, cleaning, repairing, refurbishing, whole items or spare parts
Recycling
Turning waste into a new substance or product. Includes composting if it meets quality protocols
Other recovery
Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste; some backfilling
Disposal
Landfill and incineration without energy recovery

WASTE MANAGEMENT PRINCIPLES

A site worker will have the responsibility for **Waste Management** for the construction phase of this work. Their role will be to prioritise waste prevention. Record keeping, audits and targets will be set. He/she will be also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and know how to implement a project specific waste management plan.

All **storage areas** will comply with the best guidance detailed above. Waste storage and disposal will be carried out in a way which prevents pollution in compliance with legislation.

All **waste to be transported off site** must be brought to a licensed disposal site. Duty of Care /Waste Control dockets must be produced and filed on site with each load. A waste inventory should be maintained and kept up to date. It will include an inventory of all waste materials leaving the site for disposal. It is required that this is updated on a **monthly** basis.

-

Waste storage areas will be clearly located and signed.

All waste should be transported from site at appropriate frequency by a registered waste contractor to prevent over-filling of waste containers.

ANTICIPATED WASTE STREAMS

The following waste streams are anticipated during the works. The treatment / management of each is detailed accordingly.

Anticipated Waste Stream and Management	
Waste Stream	**Management**
General Waste Generated at Staff Facilities -	There will be the typical waste generated in an office such as left-over food and sandwich wrappers. All such waste should be stored appropriately and safely from wind, rain and wild animals that often tear apart rubbish bags. Provision for separation of waste streams will be provided so that, for example, paper & cardboard waste and bottles may be recycled.
Recyclable Waste	A skip or container should be available at site for storage of all dry, loose recyclable waste. It will be removed and disposed-off, from site by licensed contractors or brought to the recycling facility in Ballina were receipts for its disposal will be obtained and kept as a record.
Non-recyclable waste	All non-recyclable wastes will be transferred to the site compound at the end of the working day. In the site compound, there will be a general skip or other receptacle provided for non-hazardous waste not suitable for reuse or recycling. This skip will include general wet

	waste (mixed food waste and food packaging), polystyrene, contaminated cardboard, contaminated plastic etc.
Litter	Littering on site will not be tolerated. All site visitors will be briefed on appropriate waste storage and disposal units. All personnel have a Duty of Care to challenge others noted littering on site. Any wind-blown litter onto site should be removed.
Packaging	Packaging will be brought on site and may include cardboard, wood and plastics. As per the waste hierarchy, packaging will be returned to the originator ahead of re-use or recycling. Where this is not possible, waste should be separated as appropriate, and safely and appropriately stored on site in anticipation of recycling. The nearest recycling centre is at Ballina Recycling Centre (Killala Road).
Sewage & Waste Water	The site will have portaloos provided that will be emptied weekly. Handwash facilities will also be provided. Wastewater will be contained through self-contained welfare facilities.
Waste Metals	Waste metals from concrete reinforcing etc. should have commercial value and will be re-used or recycled with the appropriate licensed waste contractor. A skip will be available at site for recycling of metals at works compound.
Hazardous Waste	During actual construction activities, on-site storage of any hazardous wastes will be minimised, with refuelling and oil changes carried out on a regular basis off site. In the unlikely event of any storage of all hazardous wastes on site, this will be undertaken so as to minimise potential for environmental impacts. Waste oil and materials contaminated with waste oil, including soil, shall be treated as potential hazardous waste. This material shall be stored in a segregated bunded area, and will be appropriately tested, classified and disposed of appropriately. Where appropriate, it must be disposed of to a suitably licensed facility by a suitably licensed haulier. The responsible person (Site Engineer/Site Manager) is responsible for monitoring and recording compliance with duty of care and with waste regulations. All hazardous waste (other than concrete washout) must be bagged (heavily liquefied waste to be double bagged). Hazardous waste to be returned to the site office as soon as practicable, and stored in the clearly identified/labelled Hazardous waste bin. Hazardous waste must be disposed of to a suitably licensed facility by a suitably licensed haulier. The responsible person (Site Engineer/Site Manager) is responsible for monitoring and recording compliance

	with duty of care and with waste regulations. Hazardous waste bin will be located beside the skips. **Under no circumstances dispose of this type of waste in general waste containers.**
Soil/Sub-soil	It is not anticipated that any soil or sub-soil will be taken off-site, with permanent storage areas identified on-site. Any soil removed from off-site will be carried out by contractors licensed under the Waste Management Act of 1996 (as amended 2001), the Waste Management (Facility Permit & Registration) Regulations of 2007 and the Waste Management (Collection Permit) Regulations of 2007. The volume of waste removed will dictate whether a certificate of registration, permit or license is required. If any soil/subsoil is deemed to be contaminated (as determined by the appointed environmental engineer) it will be stored separately to the inert soil/subsoil, sampled and tested. The material will be appropriately classified as non-hazardous or hazardous in accordance with EU Council Decision 2003/33/EC which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately licensed facility by permitted contractors.
Concrete	No concrete batching will be required at site. A designated concrete washout facility will be available, lined to capture materials. Any concrete washing waters will be removed off site. Concrete use will be contained and limited to the excavations prepared for foundations only. Waste concrete will be treated as hazardous.
Bedrock	If encountered, it will either be crushed onsite and used for infill during construction, or be removed from the site by licensed contractors under the Waste Management Act 1996 (as amended 2001), Waste Management (Facility Permit & Registration) Regulations 2007, and the Waste Management (Collection Permit) Regulations 2007 and disposed of off-site.

WASTE RECORDING.

The Waste Manager has to ensure there a record of all visual checks must be maintained and be available for inspection on request. The following check list could be used for this work:

Frequency of Checks

The contractor will ensure that all storage facilities are checked on a weekly basis. The checklist for completion is attached below.

VISUAL STORAGE CHECKLIST		
Waste Area Checked	Date Checked	Initials of Checker
GENERAL OFFICE WASTE		
BOWSERS		
PORTALOO		
EXCAVATED PEAT / SPOIL		
CONCRETE		
OIL		
HAZARDOUS WASTE (COSHH Store)		
RECYCLING AND WASTE SKIPS		

Waste Management review – this will be a regular item on EM team meetings. Waste Management Practices should be reviewed at these meetings.

5.7 TS7 - Storage & Handling of Hazardous Chemicals

	Construction Environmental Management Plan Technical Schedule No. **TS - 7**
Storage & Handling of Hazardous Chemicals	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

TS4 and TS5 detail pollution control procedures for hydrocarbons, concrete and nutrient (waste water) pollution, and silt. This TS refers to general procedures for storing and handling of hazardous chemicals.

All potentially hazardous chemicals, fuel, hydraulic oils and lubricants will be stored in bunded areas (in accordance with established best practice guidelines) at the Contractor's Temporary Compound.

In order to reduce the risk of contamination arising as a result of spills or leakages, the following will be employed:

- All fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces;
- If there is a requirement to store hazardous chemicals on site, they will be stored within a bunded, locked COSHH container, with upkeep and security ensured by the contractor;
- Undertaking refuelling of plant, equipment and vehicles will only be undertaken on impermeable surfaces;
- All tanks and drums are to be bunded in accordance with established best practice guidelines;
- Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated bunded areas within the main construction compound and not on-site where reasonably practicable. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur.
- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of each vehicle and operators will be fully trained in the use of this equipment.

A chemical inventory will be kept. This inventory will include:

- List of all substances stored on-site (volume and description);
- Procedures and location details for storage of all materials listed; and
- Waste disposal records, including copies of all Waste Transfer Notes (WTN) detailing disposal routes and waste carriers used. If the waste is being shipped abroad, a copy of the Trans Frontier Shipping (TFS) document must be obtained from Dublin City Council (as the relevant authority on behalf of all local authorities in Ireland) and kept on site along with details of the final destination (permits, licences etc.).

Chemical storage will form part of routine site audits.

Only if absolutely necessary should any hazardous waste be stored on site. If so, **Hazardous Waste** should be stored in a COSHH store. Only trained operatives should handle hazardous substances. Please note that COSHH data sheets are NOT risk assessments and all risk assessments should be carried out separately. All stored hazardous waste will be clearly labelled. All of these will be regularly inspected for visual

signs of leaks or something that would impact on their capacity – e.g. a drip tray full of rainwater.

5.8T S8 – Protected Species

	Construction Environmental Management Plan Technical Schedule No. **TS - 8**
Protected Species	
For the attention of**: All Construction Personnel and Sub Contract Personnel**	

Otters, lamprey white-clawed crayfish and salmon are protected under the Habitats Directive and Wildlife Act 1976 and all of these species are Qualifying Interests of the Lough Gill SAC. The Bonet River holds fish stocks and it is likely that otter will forage in this area and may enter the working site during nocturnal hours. Specific protection measures are required in order to avoid impact on them during the construction phase of the project.

The Environmental Manager will also be responsible for ensuring that appropriate working procedures are in place to ensure no negative impacts on otter. The working practices include:

- No direct lighting will be positioned to cause the Bonet River to become highlighted during nocturnal hours when otters may be active during the construction phases of the Proposed Development.
- Any excavated holes within the Site must be covered at the end of every working day to prevent an otter getting injured / trapped when using the Site for commuting during nocturnal hours.

TS2,3,4 and 5 are specifically designed to protect water quality and by doing so will ensure there is no indirect water quality impacts on aquatic protected species such as salmon, lamprey, white-clawed crayfish and otter.

5.9 TS9 - Environmental Incident Emergency Response (EIER)

	Construction Environmental Management Plan Technical Schedule No. **TS - 9**
Environmental Incident Emergency Response (EIER)	
For the attention of: **All Construction Personnel and Sub Contract Personnel**	

What is an Environmental Incident?

An environmental incident is considered to be one that could not be envisaged at project design and assessment stage. For example,

- Accidents involving concrete delivery vehicles with loss of concrete;
- Accidents involving equipment such as oil spills, hydraulic hose failure, fuel spills;
- Vehicles overturning on bog matted access tracks;
- Accidental release of materials from silt control systems;
- Accidental fires.

Who is this Environmental Incident Emergency Response (EIER) for?

This response plan applies to those responsible for site construction activities and for storing, transporting and using materials that could cause pollution if they leak or are spilt.

They are for:

- Site contractors;
- Site operators;
- Vehicle operators;
- Other organisations, authorities and businesses who store or handle polluting materials.

They will also help those who respond to spills, and those responsible for transporting or storing waste from spills, to protect the environment, for example:

- Spill clean-up contractors;
- Other bodies who may be involved in spill response, for example local authorities and public health bodies.

What to do in the event of an emergency?

To ensure that no significant environmental damage occurs, all contractors working on site will be required to implement the following:

- Immediately contact the Project Ecologist, Site Engineer/Site Manager and Employer, even if the incident is contained;

- Cease all works at the incident site, with the exception of response control measures, until approval to continue is given by the Site Engineer/Site Manager and the Employer;
- Have adequate materials, equipment and resources available on site to respond rapidly to any emergency situation;
- Immediately implement basic additional control measures such as containment of spills and repair of silt control measures.

The outlines below are provided for general response approaches to different spillages. However, the Contractor must provide a detailed response programme taking account of their normal working practices and links to specialist contractors.

Level of Spill Risk associated with Hydrocarbons and Concrete

The table below outlines the levels of spills that could occur and the associated risk of the same. Different procedures should be followed depending on the risk.

Spill Categorisation Table applicable for Hydrocarbons and Concrete.		
Category level	**Risk**	**Description**
Level 1	Low Risk	Spill is to ground (spill is on the ground and not contained in a bund for example) and affects an area of less than $1m^2$ or spill is retained within bund/secondary containment.
Level 2	Medium Risk	Spill affects an area greater than $1m^2$ or has or will reach water body within the site, but is unlikely to pass off site. ***NB. All Level 2 risk concrete spills should be treated as Level 3 until sufficiently controlled.***
Level 3	High Risk	Spill has or will pass off site

Immediate Actions in the Event of an Oil Spillage:

Action 1 – Identify the Source of the Pollution and Cut-off Source of the Pollution.

Action 2 – Identify where the spillage has gone and where it may go.

Action 3 – Call for Help

Action 4 – Deploy Spill Kit

Persons taking action to mitigate oil spills should only do so where it is safe, trained and comfortable to do so. Appropriate personal protective equipment is necessary;

Spills shall not be managed or cleaned by use of surfactants, dispersants or pressure washing;

Action 5 - Incident Notification:

If the spill is a Level 2 or Level 3 contact the Site Engineer/Site Manager and Project Ecologist who will assess the requirement to contact National Parks and Wildlife Service, Inland Fisheries Ireland and Mayo County Council. The Employer must be notified immediately.

Action 6 - Aftercare and Clean-up:

For Level 2 and Level 3 incidents, a contaminated land assessment may need to be undertaken in Consultation with the Employer. Any contaminated materials generated as part of a remediation programme will need to be removed and handled in accordance with the waste regulations. Copies of waste documentation will be provided to the Employer upon completion.

Immediate Actions in the Event of a Concrete Spill.

Action 1 – Stop the Source at the Spill

Action 2 – Containing the Spill

- Priority should be given to preventing concrete entering water bodies, site drainage or natural water bodies. Where available, this may be achieved by deployment of plastic sheet piles, silt fences and silt raps;
- Where the spill has already reached surface water, placement of silt curtains in a secure manner downstream of the spill should be considered. This should be by safe trained personnel with appropriate PPE.
- If it is safe to clean up the spill spilled cement material should be carefully removed to waste disposal containers for removal off site;
- For all incidents, the type, quantity and specific characteristics of the concrete lost should be established as quickly as possible to assist in the assessment of the severity of the incident;
- For Level 2 and Level 3 incidents this information must be reliably and quickly determined so that discussions with regulatory authorities can be adequately informed;

When recovering the concrete spill wear the following protective clothing:

- Concrete resistant gloves;
- Protective eyewear;
- Protective clothing;
- Protective footwear.
- Record incident in accident log book and include quantity spilled and materials used;
- Replenish silt control materials;
- Project Ecologist to implement monitoring programme if required.

Action 3 – Incident Notification

Action 4 Aftercare and Clean-up

All waste concrete to be categorised and treated as hazardous waste and stored in a bunded area.

Level 1 spill clean-up will entail the removal of contaminated material

Level 2 and 3 will require as above but ongoing monitoring for inspection of the efficiency of the control measures put in place and the completion shall be agreed by the project ecologist in consultation with the Employer.

Level 3 requires long term remedial measures especially if spill is to reach groundwaters. Groundwater monitoring and remediation should be co-ordinated with the Site Engineer/Site Manager and an appropriately qualified Environmental Specialist and should only be deemed complete on their written authorisation.

Immediate Actions in the Event of Silt Pollution.

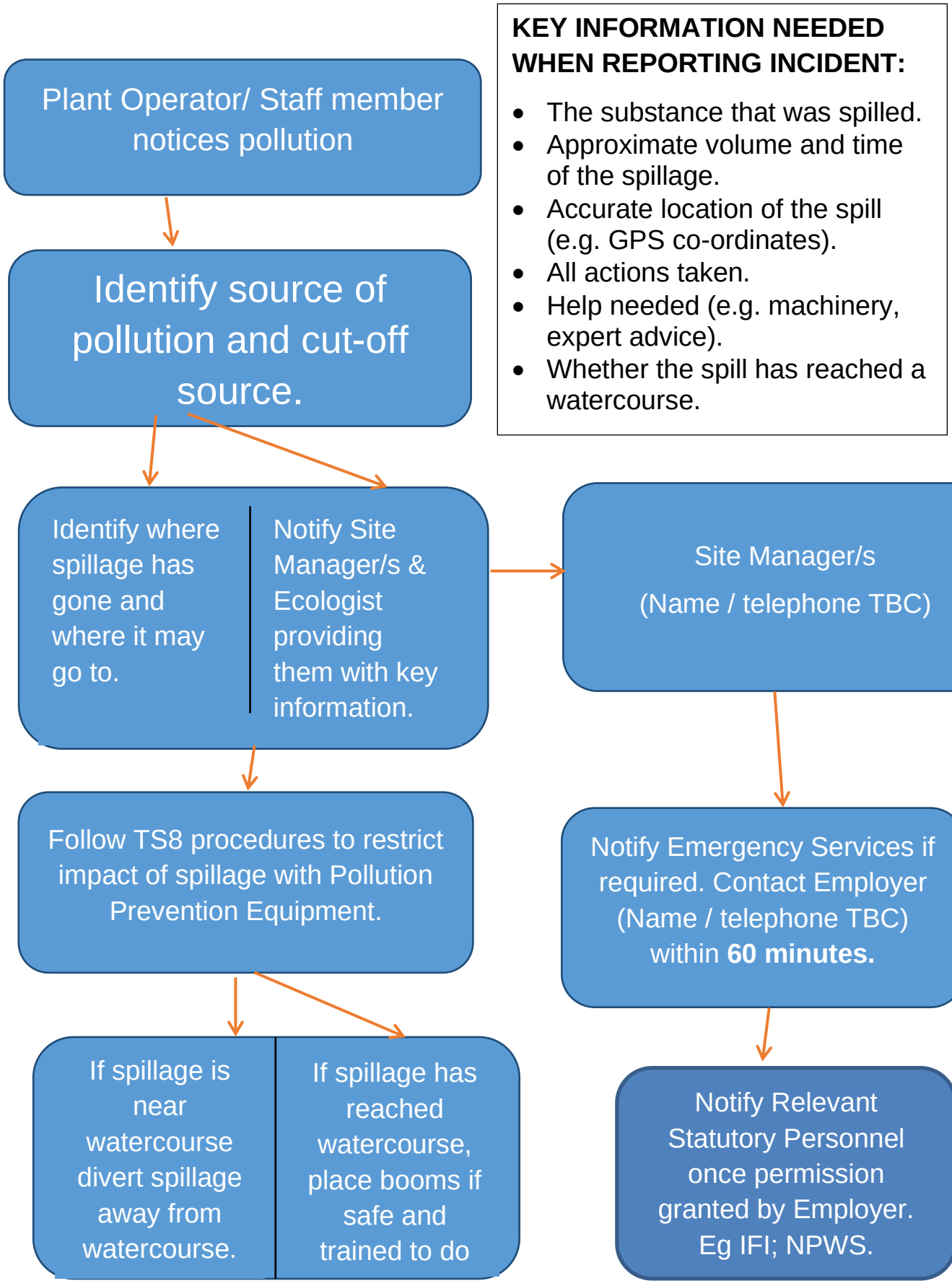
Failure of Silt Fencing

Wind damage to silt fencing, can cause the buried base of the geotextile fence to pull clear of the ground, with a potential for release of solids. Should this occur the following additional measures will be implemented:

- Ensure an adequate supply of geotextile membrane, wooden stakes, straw bales, and fixing materials is always available to the contractor. This should be sufficient to allow construction of at least three additional silt fences of length 10m each;
- Increase frequency of support posts and geotextile fixing staples in exposed locations;
- Reduce above ground height of geotextile silt fence to less than 1m (minimum height 600mm);
- Support geotextile silt fence temporarily with geotextile wrapped straw bales pinned with wooden stakes or metal rods;
- Insert supplementary silt fencing. These would take the form of additional lines of silt fences in parallel and provide additional redundancy in the event of primary silt control measures failure;
- Contact the Project Ecologist to assess adequacy and location of any remedial measures taken and relocate the silt fencing if required;
- Record incident in accident log book; and
- Project Ecologist to implement monitoring programme if required.

The page overleaf that comprise TS8 can be laminated and provided in all vehicles and prominently displayed on site.

SPILL/POLLUTION INCIDENT ACTION PLAN



KEY INFORMATION NEEDED WHEN REPORTING INCIDENT:

- The substance that was spilled.
- Approximate volume and time of the spillage.
- Accurate location of the spill (e.g. GPS co-ordinates).
- All actions taken.
- Help needed (e.g. machinery, expert advice).
- Whether the spill has reached a watercourse.