Derrygrogan Little Solar Farm

Outline Construction Environmental Management Plan (oCEMP)

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1 Introduction

1.1 Purpose of this Document

This document is an Outline Construction Environmental Management Plan (OCEMP) and contains all the appropriate environmental mitigation and management techniques to help ensure no significant impacts are caused to the environment during the construction phase of the Proposed Development. It is a **'live'** document and may be updated as the project progresses. This OCEMP sets out the minimum requirements which will be adhered to during the construction phase of the Proposed Development.

1.2 The Proposed Development

Details of the Proposed Development application are detailed below.

Location: Derrygrogan Little, County Offaly, Ireland.

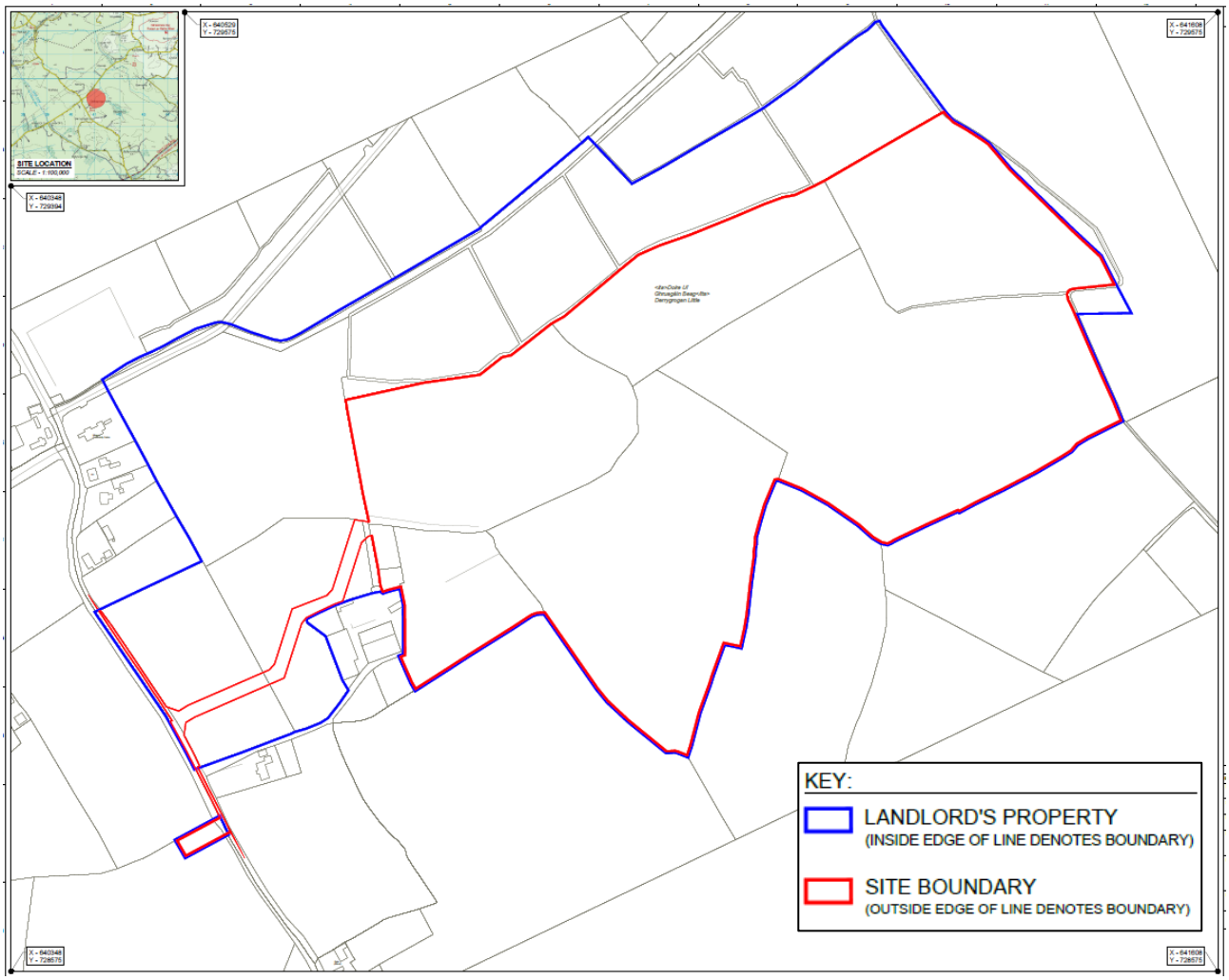
Client: Renewable Energy Systems (RES) Limited on behalf of Ballyteige Solar Limited.

Project Description:

"The development will consist of planning permission for a period of 10 years to construct and complete a Solar PV development with a total site area of c.28.1 hectares, to include solar PV ground mounted support structures, string inverters, transformer stations, electrical cabling and ducting, internal access tracks and hardstanding areas, perimeter fencing and access gate, CCTV, a temporary construction compound and other ancillary infrastructure including drainage, additional landscaping and habitat enhancement as required and associated site development works relating to the access of the site. The solar farm will be operational for 40 years in the townlands of Derrygrogan Little and Derrygrogan Big, Tullamore, Co. Offaly. A Natura Impact Statement (NIS) has been submitted with this application."

The relevant area where works are proposed as part of this scheme is illustrated in **Figure 1.1**.

Figure 1.1: Site Location



1.3 Key Components of the Proposed Development

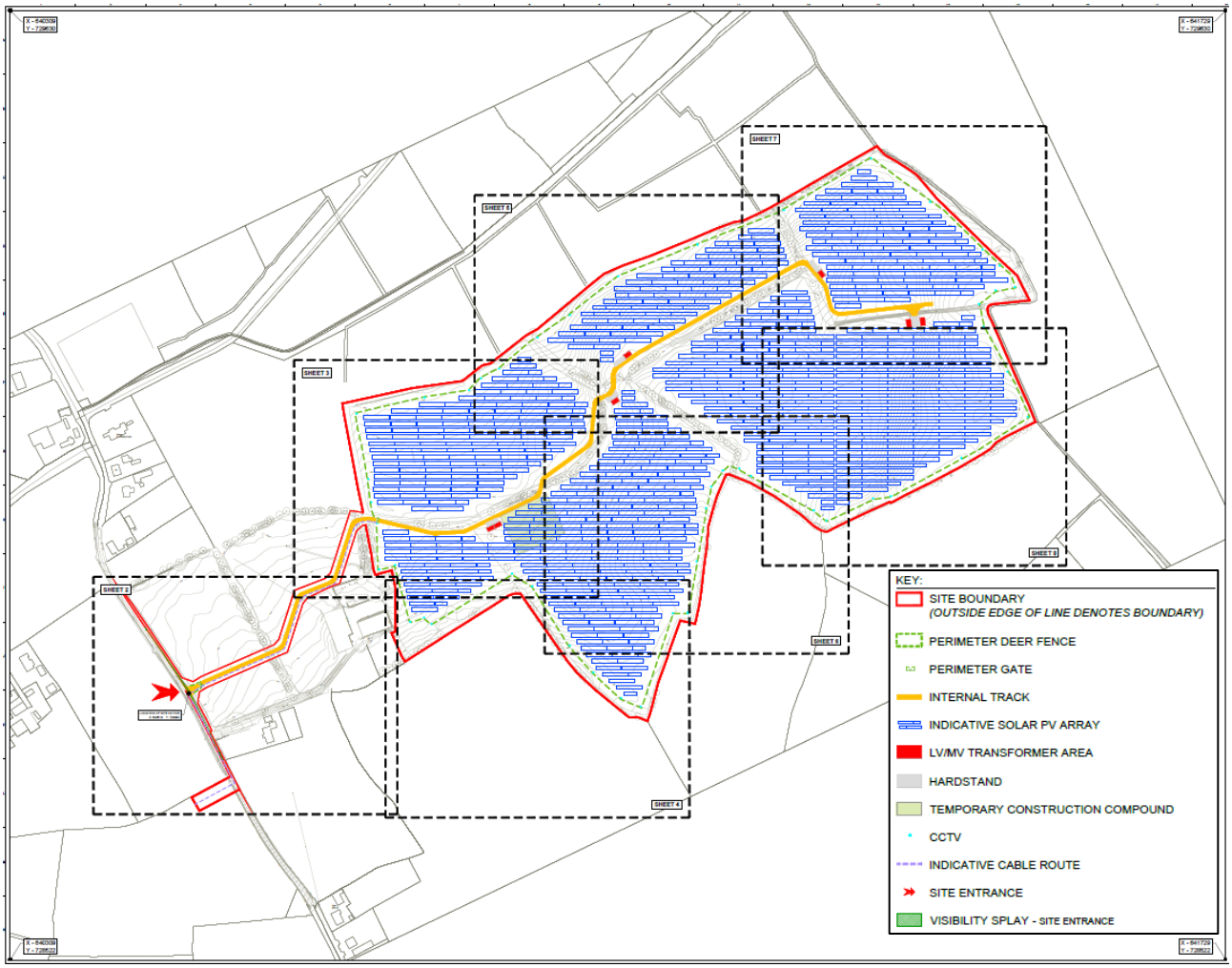
The Proposed Development will consist of the construction of Photovoltaic (PV) panels mounted on metal frames, string inverters, transformers, hardstanding areas, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gate, a temporary construction compound and all ancillary works. The Proposed Development will occupy 10 fields across the Application Site. The Proposed Development will connect into the consented Derrygrogan Big solar PV development (planning reference 22/378) via Rathdrum Road. It is important to note the grid connection into the National Grid network does not form part of this planning application. The Proposed Development can be summarised as follows:

- Solar arrays, string inverters and metal support structures or on concrete foundations if archaeological mitigation measures are required.
- 7 no. LV/MV Transformer Stations with associated hardstanding areas.
- Internal access track with two perimeter gates.
- No.47 CCTV camera units.
- Site access via Derrygrogan Little Road with associated visibility splay.
- Security fencing incorporating timber posts and deer fencing.
- Cable trenching and backfilling.

- Temporary construction compound; and
- Structural landscape planting and ecological enhancement measures

Figure 1.2 below illustrates the Proposed Development plans. Full site layout plans are outlined in **Appendix A**.

Figure 1.2: Proposed Development Plans



1.3.1 Solar Farm

1.3.1.1 Solar Panels

The proposed panels will be mounted in frame tables at an inclination of typically 10 - 30 degrees depending upon localised topography. The pile depth shall be determined following detailed geotechnical site investigation and will typically be 1.5 - 1.7m. however the maximum depth could be up to 2.4m.

All panels placed on the site will be orientated to face south and are fixed in place. They do not move to follow the path of the sun. Panels are opaque in nature and are designed specifically to absorb rather than reflect the sun's rays.

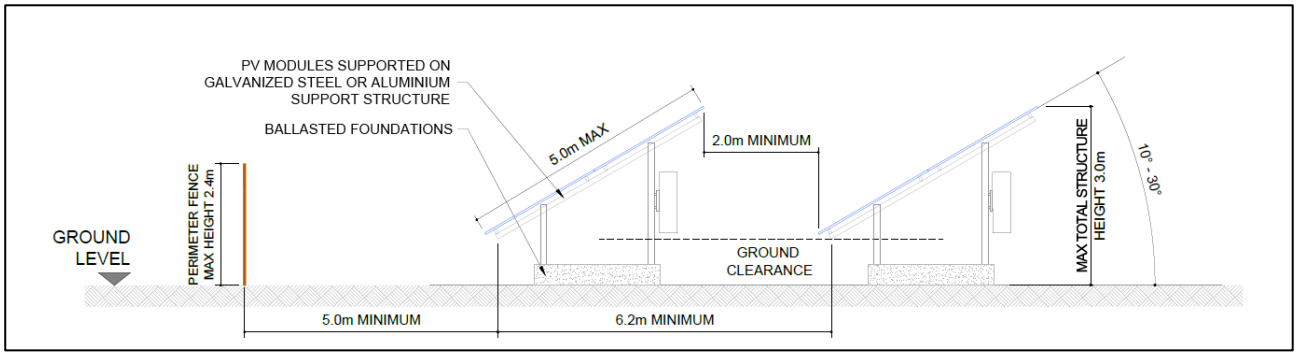
Figure 1.3: Example Solar PV Panel

1.3.1.2 Mounting System

Where posts are pushed into the ground this is via typical agricultural methods routinely used to erect fence posts on farms and in the rural area. PV modules will be supported on galvanized steel or aluminium support structure, as shown in **Figure 1.4**.

Construction of the mounting system involves a small track machine with a ram/screw attached. This machine tracks up and down in rows installing as it goes.

Figure 1.4: Typical Cross Sections – Table Post Ground Mounting Systems



1.3.1.3 Connecting Cables

As part of the solar PV plug and play system, small connecting cables run along the back of each panel to the end of every row where they connect to the main cables which in turn connect to the string inverter stations at the back of the PV tables and subsequently the LV/MV transformers. Main cables will be undergrounded.

While the small connecting cables are attached to the back of the panel arrays, the main cables will be installed underground throughout the site. Cables trenches typically will be no more than 280mm wide and the cables will be installed via traditional open trenching techniques. In this instance, trenches will range from c.600mm for LV trenches to c.1.3m deep for HV trenches. The first 400mm

of trenches will be filled with backfill with existing topsoil/ soil which removed to facilitate the cable laying and with the remainder of the trench filled with sand. Sand will generally be delivered to the site and placed adjacent to trenches on an "as required basis."

Vegetation soil turves will be laid beside the trench and used to reinstate the ground to original levels after the cables have been installed (where applicable). This work is undertaken by a track machine/tractor with a plough on the back. Back-filling will be facilitated by a track machine. Excavation, cable laying and reinstatement will take place sequentially across the site and on a row-by-row basis.

1.3.2 Access Tracks

The Proposed Development will utilise a new access off Derrygrogan Little Road. Further information on construction traffic and site access is outlined in submitted Outline Construction Traffic Management Plan (oCTMP) contained within the Transport Statement.

1.3.3 CCTV Cameras

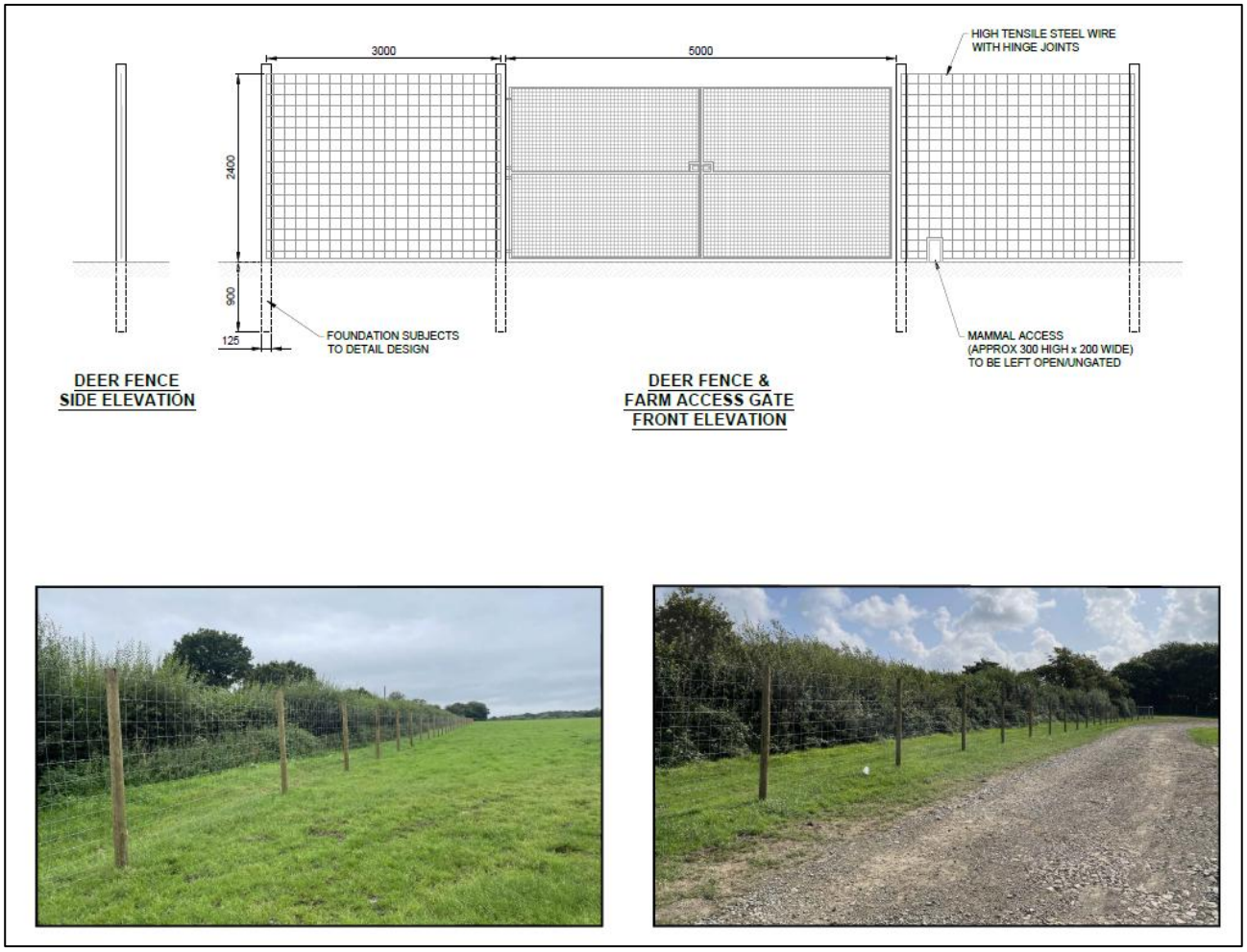
For security purposes there will be CCTV cameras placed strategically throughout the development site. These will be pole mounted to heights of typically 3.5m, be directed along fence-lines and utilise infra-red technology. This is an essential component of the overall development and is required to monitor the site and detect any unauthorised access.

Cameras are designed to not move either intentionally or unintentionally due to adverse weather conditions or animal activity. Monitored CCTV systems are manned 24 hours, 7 days a week. Adequate safeguards are in place to ensure that privacy interests are not compromised and the rights of individuals whose personal data may be recorded by the cameras are protected.

1.3.4 Perimeter Fencing

For security purposes the overall area of development will be enclosed by 2.4m high post and wire (deer) fencing, see **Figure 1.5** below. The materials used are chosen to be in keeping with the landscape. Where hedgerows exist or where planting is proposed the fencing will be located on the internal side of hedgerows and trees to screen visual impacts. The fence will accommodate small mammal gates measuring approximately 300mm x 200mm at appropriate points to allow continued unrestricted access and foraging across the site by small mammals.

Figure 1.5: Proposed Perimeter Fencing



2 Defining the OCEMP

2.1 Purpose of the OCEMP

An OCEMP is a key tool for delivering environmental management during the construction phase. It sets out the mechanisms by which the various construction activities would be managed to comply with the relevant environmental legislation and best practice to minimise the impacts and effects on human receptors and environmental receptors.

It provides the framework for recording environmental risks and defines the measures required to mitigate and monitor construction effects, including the mitigation measures set out in the associated supporting environmental documents and assessments. It also outlines provisions for auditing and reporting and sets out action to be taken to resolve any corrective actions arising during the course of construction. The purpose of the OCEMP is to:

1. Record environmental risks and identify how they would be managed during the construction period;
2. Provide a means of identifying environmental commitments, objectives and targets;
3. Provide a means of monitoring and reporting performance against the objectives and targets;
4. Provide a framework to ensure that all parties are aware of their responsibilities;
5. Establish a checklist of control procedures which can then be integrated into an overall environmental management protocol;
6. Describe how construction activities would be undertaken and managed in accordance with the obligations of environmental legislation and policy, and the requirements of environmental regulatory authorities;
7. Provide detailed environmental mitigation measures for reducing the potential for environmental impacts during pre-construction and construction;
8. Highlights that some activities may require consents or licenses;
9. Act as a link and main document reference for environmental issues between the design, and construction stages; and,
10. Ensure the mitigation requirements of the associated environmental assessments (contained in supporting environmental documents for the planning application) are met.

The Appointed Contractor is required to develop and implement a CEMP to help ensure that construction activities are planned and managed in accordance with the environmental requirements. The contractor will use this OCEMP as the template for their own individual CEMP.

2.2 Scope of the OCEMP

The scope of the OCEMP covers all environmental effects related to the construction of the Proposed Development. The term 'construction' in the OCEMP includes all site preparation, earthworks, waste removal and related engineering and construction activities as authorised by the local authority and associated permissions.

The OCEMP will document the Contractor's plans to ensure compliance with their legal and contractual obligations as well as implement best practice in construction environmental management. The OCEMP will be applicable to all works associated with the Proposed Development including those carried out by sub-contractors.

2.3 Status of the OCEMP

The status of the OCEMP is as follows:

1. This document comprises the OCEMP and has been prepared during the preliminary design and in parallel with submission of full planning application stage of the Proposed Development.
2. The OCEMP (and adopted version before onsite works i.e. CEMP) is a 'live' document that can be reviewed on a regular basis and updated where necessary to include the further requirements from the local authority.
3. The CEMP would identify any further mitigation methods and control measures to be agreed with key stakeholders and would be in place before construction begins.
4. During construction, the CEMP may be revised to consider any modifications to the design, changes in external factors (for example, regulations or standards), any unforeseen circumstances, and any failings in environmental performance arising from routine inspections.
5. The provisions of the OCEMP would be incorporated into the contracts for construction of the Proposed Development. It would be a mandatory requirement for both the Project Supervisor Construction Stage and all subcontractors to comply with the OCEMP to ensure that best practice is implemented during construction and to safeguard the environment.
6. The requirements of the OCEMP do not remove or overwrite the legal duties, responsibilities or obligations of the Project Supervisor Construction Stage (and subcontractors) and other parties in accordance with the contract documents and legislation.
7. The CEMP is the mechanism for ensuring that the Proposed Development adopts relevant best practice management techniques for sustainable construction.

2.4 Structure of the OCEMP

The OCEMP comprises of the following Appendices:

- Appendix A: Proposed Site Plans
- Appendix B: Environmental Inspection Schedule
- Appendix B1: Complaints Form
- Appendix C: Incident Report Form
- Appendix D: Site Waste Management Plan
- Appendix E: Construction Method Statement
- Appendix F: Pollution Prevention Plan
- Appendix G: Emergency Response & Environmental Plan

3 Roles and Responsibilities

3.1 Introduction

The Project Manager/Construction Manager would have overall responsibility for the construction of the Proposed Development. A Environmental Manager would be responsible for developing the OCEMP and implementing the CEMP (and its various potential iterations as it is a 'live' document) during construction.

Other members of the project team would be assigned specific roles to assist the Project Manager in the implementation of the OCEMP and individual specialists would be appointed to provide expert advice. The key environmental roles and responsibilities are in the sections that follow.

The assigned environmental roles and responsibilities for the relevant project personnel are detailed in this section.

3.2 Construction Director

The Construction Director will have an overall responsibility for the organisation and execution of all related environmental activities as appropriate, in accordance with regulatory and project environmental requirements. The principal duties and responsibilities of this position will include:

1. Overall responsibility for the Proposed Development and implementation of the CEMP;
2. Allocating resources to ensure the implementation of the CEMP;
3. Participates in the management review of the CEMP for suitability, adequateness and effectiveness; and,
4. Sets the focus of environmental policy, objectives and targets for the Contractor.

3.3 Construction Manager/Site Manager

The Construction Manager/Site Manager is directly responsible to the Construction Director for the successful execution of the project. The principal duties and responsibilities of this position will include:

1. To report to the Construction Director on the on-going performance of the CEMP;
2. To discharge his/her responsibilities as outlined in the CEMP; and,
3. To support and augment the Environmental Officer through the provision of adequate resources and facilities in the implementation of the CEMP.

3.4 Environmental Officers

The Environmental Officer will be responsible for, but not limited to, the following activities:

1. Ensuring that the requirements of the CEMP are developed and environmental system elements (including procedures, method statements and work instructions) are implemented and adhered to with respect to environmental requirements;
2. Reviewing the environmental responsibilities of other managed Contractors in scoping their work and during contract execution;
3. To ensure that advice, guidance and instruction on all CEMP matters are provided to all their managers, employees, construction contractors and visitors on site;
4. Report to the Construction Manager on the environmental performance of Line Management, Supervisory Staff, Employees and Contractors;

5. Advise site management (including, but not limited to, the site Construction/Commissioning Manager) on environmental matters;
6. Maintaining environmental records;
7. Providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works;
8. Reviewing environmental management content of method statements;
9. Reporting environmental performance to the Site Manager;
10. Liaison with statutory and non-statutory bodies and third parties with an environmental interest in the Proposed Development;
11. Monitoring and completing the waste register and ensuring the correct waste management procedures are implemented (An example Site Waste Management Plan (SWMP) is set out in **Appendix D**);
12. Implementing and maintaining environmental controls on site. (Refer to **Appendix B** Environmental Inspection Schedule and details of what is included in method statements are set out in **Appendix E**).
13. Attending to any spills or environmental incidents that may occur on site. (Refer to **Appendix F** Pollution Prevention Plan, **Appendix G** Emergency Response & Environmental Plan);
14. Undertake site environmental monitoring and walk overs (Refer to **Appendix B** Environmental Inspection Schedule);
15. Ensuring correct procedures are followed in the event of environmental incidents (Refer to **Appendix C** Incident Report Form and **Appendix G** Emergency Response & Environmental Plan).

3.5 Site Supervisors

Site Supervisors are required to:

1. Promote a Health & Safety culture on site, to read, understand and implement the CEMP;
2. Know the broad requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance;
3. Ensure that environmental matters are considered when considering Contractors' construction methods and materials at all stages;
4. Be aware of any potential environmental risks relating to the site, plant or materials to be used on the premises and bring these to the notice of the appropriate management;
5. Ensure plant suggested is environmentally suited to the task in hand;
6. Co-ordinate environmental planning of all construction activities to comply with environmental authorities' requirements and with minimum risk to the environment. Give Contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists;
7. Where appropriate, ensure Contractor's method statements include correct waste disposal methods;
8. Be aware of any potential environmental risks relating to the Contractors and bring these to the notice of the appropriate management; and,
9. Ensure materials/waste register is completed as appropriate.

3.6 Site Personnel

All Contractors, and other site personnel, on the project will adhere to the following principal duties and responsibilities:

1. To support and promote the Health & Safety culture on site.
2. To co-operate fully with the General Contractor and the Environmental Officer in the implementation and development of the CEMP at the site;
3. To conduct all their activities in a manner consistent with regulatory and best environmental practice;
4. To participate fully in the environmental training program and provide management with any necessary feedback to ensure effective environmental management at the site; and,
5. Adhere fully to the requirements of the site environmental rules.

3.7 Ecological Clerk of Works (ECoW)

An Ecological Clerk of Works (ECoW) will be employed to ensure that all works are undertaken in line with the mitigation outlined in the Ecological Assessment Report. Further details are outlined in Section 8.

3.8 Team Structure & Distribution List

All personnel working on the project will be responsible for the environmental control of their own work and will perform their duties in accordance with the requirements of the CEMP (as updated) and in compliance with the controls referenced therein.

A distribution list for the CEMP should be developed when all contact names and companies are known. The purpose of the distribution list is to establish communication channels that will enable more effective control of environmental-related issues. The distribution list should identify individuals and organisations that have received or will receive a copy of the construction stage CEMP for implementation.

Individuals of importance could include the developer, the environmental consultant, lead contractors, subcontractors, and any appointed environmental managers (or other identifiable titles for the persons in charge of implementing the contents of the construction stage CEMP).

The distribution list will be established prior to commencement of construction by the appointed contractor. Prior to commencement of construction, all roles and responsibilities should be confirmed in the CEMP as updated. **Table 3.1** shows a template for project roles and responsibilities and can act as a template for the distribution list for the CEMP.

Table 3.1: Role, Company, Named Contact & Contact Details

ROLE	COMPANY	NAMED CONTACT	CONTACT DETAILS
Construction Director	Write name of company here	Write name of person here	Write phone number here
Construction Manager	Write name of company here	Write name of person here	Write phone number here
Environmental Officer	Write name of company here	Write name of person here	Write phone number here
Site Supervisors	Write name of company here	Write name of person here	Write phone number here
Site Personnel	Write name of company here	Write name of person here	Write phone number here

ROLE	COMPANY	NAMED CONTACT	CONTACT DETAILS
Health & Safety Representative (May be combined with Construction Manager role)	Write name of company here	Write name of person here	Write phone number here
Other specialists as required (e.g. geotechnical, drainage/civil engineer)	Write name of company here	Write name of person here	Write phone number here
Other specialists as required (e.g. geotechnical, drainage/civil engineer)	Write name of company here	Write name of person here	Write phone number here
Other specialists as required (e.g. geotechnical, drainage/civil engineer)	Write name of company here	Write name of person here	Write phone number here
Other specialists as required (e.g. geotechnical, drainage/civil engineer)	Write name of company here	Write name of person here	Write phone number here
Other specialists as required (e.g. geotechnical, drainage/civil engineer)	Write name of company here	Write name of person here	Write phone number here
Environmental Protection Agency (EPA)	**Notifying the EPA on 1890 33 55 99** **Any spillages / pollution incidents should be reported to the EPA hotline within 30 minutes of the incident occurring unless it is not safe to do so**		

Notifying the EPA*: To notify the EPA by telephone, operators may call EPA HQ at 053 916 0600 or their Regional EPA Office. The EPA's business hours are 09:00 – 17:00 Monday to Friday except Public & Bank Holidays. Outside of these hours, contact the EPA on any of the above numbers or on our dedicated Low Call number 1890 33 55 99. Our Out of Hours line is open 24 hours a day, 7 days a week. To leave a message, please hold for a choice of the three options. Please be aware that all after-hour calls are recorded.*

Option 1 – *Non-emergency notification. This is for non-urgent incidents, which will be received by an EPA inspector on the next working day.*

Option 2 – *Emergency incident. This is an urgent notification of a significant incident at a licensed site or environmental pollution, which will be forwarded to an EPA manager for rapid response.*

The Project Supervisor Construction Stage as appointed has ultimate responsibility for the successful environmental performance of the Proposed Development through appointment and management of subcontractors and environmental specialists, as required, as detailed in Table 3.1. Specifically, this includes:

1. Project Supervisor Construction Stage & all sub-contractors will need to **comply with all** relevant environmental legislation when carrying out work on the site;
2. **Definition** of environmental standards and requirements for the contractors throughout the contract stages;
3. **Acting as a point of contact** for consultation and feedback with landowners/occupiers, statutory and non-statutory consultees, other interested parties and the public;

4. **Auditing** of the performance of sub-contractors;
5. **Environmental monitoring and reporting (in conjunction with Environmental Officer)** - Environmental issues relevant to the project will be discussed during weekly Site Progress Meetings attended by the Site Manager and Environment Manager. Environmental performance will also be discussed at regular HSEQ meetings. This will include dissemination and discussion of the findings of audits, environmental reports and other inspections where appropriate. Other responsibilities are as follows:
6. **Health and Safety** - The site will be managed by a project management team who will be responsible for the Health and Safety of all personnel on site.
7. **Site Rules** - All personnel must comply with the rules and regulations laid down in the appropriate site rules.
8. **Induction and signing in and out** - All visitors to the site will be required to sign in and out and all personnel working on the site will be subject to an induction by the Project Supervisor Construction Stage.
9. **Training** - All construction staff, including sub-contractors, would receive structured training on the requirements of the CEMP and the associated environmental control plans, as developed. They would also be required to attend a site induction which would include the key environmental issues identified for the Proposed Development. The briefing would emphasise the methods and working practices which must be employed to protect the environment, including emergency procedures for reporting and dealing with environmental incidents. Records of training and those attended will also be retained.

4 Communications

Effective communication is essential to ensure the appropriate employment of environmental standards and relaying of information, reports/assessments and data. The following points are some of the key forms of communication required:

1. **Statutory and Non-Statutory Bodies** - During the construction works, communication may be required with external parties such as, statutory authorities, interest groups and the public/business owners. Communication may take the form of scheduled meetings, site visits and written correspondence.
2. As the project progresses, there may be a requirement by the client, his representatives and any appointed contractor to clarify potential issues with relevant statutory bodies – including those with an environmental remit.
3. Detailed in Table 4.1 is a basic list of statutory bodies with an environmental remit within the Republic of Ireland and the local authority area who may require consultation – in particular during the construction phase of the project. Also provided is a link to their internet sites from which useful information and contact details of these organisations can be obtained.
4. This list will be reviewed by the contractor, added to or amended if required. This list therefore should not be seen as a definitive list.
5. It should also be noted that there are a wide range of non-statutory bodies within the Republic of Ireland who play an active role in protecting the environment. These organisations are not listed in this CEMP as yet but will be if required e.g. perhaps to seek further clarification.
6. **Public/businesses** - The Site Manager shall ensure that the public/businesses are kept informed of operations that may have an effect upon them. This may involve letter drops and meetings to keep local commercial premises owners up to date with progress with the Proposed Development and any new operations that are to be carried out. The Site Manager will provide details of contacts within the project team for the public/businesses to contact should any issues arise;
7. **Consents, Licences and Permits -** The provisions for controlling, pumping and discharging water will be agreed with the Environmental Protection Agency (EPA). The Contractor will ensure that any licences required are in place;
8. **Changes in legislation or guidance** - Legislative changes or proposed improvements to manage processes on site that have a bearing on the commitments given in the supporting environmental documents or other consultations will be communicated by the Site Manager to the Client and;
9. **Meetings & Records** - Environmental issues relevant to the project will be discussed during weekly Site Progress Meetings attended by the Site Manager and Environment Manager. Environmental performance will also be discussed at regular HSEQ meetings. This will include dissemination and discussion of the findings of audits, environmental reports and other inspections where appropriate.

Table 4.1: Basic List of Statutory Bodies with an Environmental Remit

Organisation	Website Address
Environmental Protection Agency (EPA)	https://www.epa.ie/
Waterways Ireland	https://www.waterwaysireland.org/
Inland Fisheries Ireland	https://www.fisheriesireland.ie
Irish Water	http://www.water.ie
Office of Public Works	https://www.gov.ie/en/organisation/office-of-public-works/

5 Pollution Control and Contingency Plan

5.1 Legislation

Current legislation has been taken into consideration during the production of this OCEMP. The legislation covers all relevant areas including water pollution, wildlife species protection, waste and noise. In the case of the Proposed Development, the following legislation has been considered:

- The Local Government (Water Pollution) Act 1977;
- The Local Government (Water Pollution) (Amendment) Act 1990;
- EC (Water Policy) Regulations 2003, as amended (including S.I. No. 52/2025 – EU (Water Policy) (Amendment) Regulations 2025);
- The Wildlife Act 1976 (amended 2000);
- EC (Birds and Natural Habitats) Regulations 2011 (amended 2015);
- Protection of the Environment (POE) Act 2003;
- Environmental Noise Regulations 2006;
- Environmental Protection Agency Act 1992; and
- Waste Management Acts (WMA) 1996 to 2005.

5.2 Guidance

The Environmental Protection Agency has produced Pollution Prevention Guidelines (PPGs). The most relevant guidelines to the Proposed Development include:

- IPC Guidance Note – Guidance Note on Storage and Transfer of Materials for Scheduled Activities (EPA 2004) (amended 2012, 2013). This guidance note covers tanks, bunds and pipelines which store or transmit potentially polluting substances.
- National Hazardous and Waste Management Plan 2014-2014 (EPA 2014). The plan details guidance on how to prevent, reduce and collect hazardous waste.

Key guidance from other bodies that are relevant to the Proposed Development construction phase include:

- Best Practice Guide BPGCS005 – Oil Storage Guidelines;
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects;
- Construction and Demolition Waste Management – a handbook for Contractors and Site Managers; and
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development.

UK Pollution Prevention Guidelines have also been considered in the production of this plan. The Pollution Prevention Guidelines (PPGs) and their successor documents, the Guidance for Pollution Prevention (GPPs), published by the Scottish Environment Protection Agency (SEPA), the Northern Ireland Environment Agency (NIEA), and formerly the Environment Agency (EA) in England, are considered guidance documents that reflect current good practice and are not applicable to the Republic of Ireland but are a good source of information and guidance.

GPPS are downloadable in full from this link: http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

5.2.1 GPP01 Understanding your Environmental Responsibilities – Good Environmental Practices

The basis of any good environmental performance is compliance with environmental regulations. You must be aware of your environmental responsibilities and make sure that you operate in a completely legal way.

The site and activities will only cause a risk to the environment or people if it has all three parts of the pollutant linkage present i.e. a source, a pathway and a receptor. Measures should be put in place to prevent or minimise or mitigate the effects of any risks and thereby break the pollutant linkages between these three.

It offers advice on drainage from site. Drains are common pathways for dirty water to enter the environment and cause pollution so it should be known where drains are situated and where they lead to reduce the risk of pollution. All premises should have a drainage plan to guide any activities. This guidance covers on-site water treatment facilities such as septic tanks, package treatment plants or oil separators. It also mentions Sustainable Drainage Systems (SuDS) which can be used to treat lightly contaminated water.

Safe storage of fuels, oils, chemicals and other materials can be achieved by planning storage areas, using suitable containers, containing leaks and spills and overseeing deliveries. GPP 01 also contains information on waste handling, storage and minimisation as poorly managed wastes, including both direct and indirect waste, can pollute the environment. In this context everyone has a duty of care to ensure waste is produced, stored, transported and disposed of without harming the environment. Hazardous or special waste must be dealt with differently to non-hazardous waste. It also covers how to correctly dispose of your waste and measures that must be taken.

Dealing with pollution incidents starts with preparation, planning and training which is discussed in this guidance. It recommends the implementation of plans, analysing risks such as flood and fire risks and having spill kits and pollution control equipment at the ready to ensure that everybody knows what to do in the case of an emergency. Following the guidance in this GPP can help reduce or eliminate the negative impacts that may arise.

Spill kit must be kept on site with sand, earth or commercial products for the containment of fuel and other material spillages. All staff will receive appropriate training in the use of these kits and are to be made aware of where the kit is stored. In the event of a spillage of oils or chemicals resulting in contamination of water courses or damage to habitats, the following procedure will be adopted:

- The appropriate spill kit is to be deployed immediately, and the site manager is to be informed.
- The incident is to be recorded within the site logbook.
- In the event of contaminants being discharged directly to water courses, or in the event of significant spillage (in excess of 10 litres), the EPA is to be contacted on **1890 33 55 99.**

Figure 5.1: Example Spill Kit

A way of ensuring awareness of impacts is to develop a suitable Environmental Management System (EMS). An environmental management system (EMS) is similar to other management systems, such as those that manage quality or safety. It assesses business' strengths and weaknesses and helps identify and manage environmental risks/opportunities. This guidance covers the different types of EMS.

5.2.2 GPP02 Guidance for Pollution Prevention Above Ground Oil Storage Tanks

This Guidance for Pollution Prevention is written for anyone who:

- Intends to install or replace above ground oil storage tanks
- Has existing oil storage tanks on their site to help look after their oil safely.

Following this guidance will help look after above ground oil storage tanks safely and minimise the risk of causing pollution.

Oil is one of the most common pollutants and therefore it is important to have adequate insurance cover which should include:

- environmental clean-up for accidental oil loss, or deliberate oil loss through vandalism
- a high enough liability limit to cover you if neighbouring land, premises and/or boreholes are affected
- the costs of cleaning up oil on your own property

Insurers may not settle a claim if the oil tank and associated pipework which leaked did not comply with the applicable oil storage regulations.

Oil tanks connected to fixed combustion appliances, like central heating boilers and cookers, need to comply with the building regulations that apply in the UK. When deciding where to put the tank, environmental high-risk locations should be avoided and areas at risk from flooding. It is important to check which type of oil storage is best suited, recommendations for which are included within the guidance.

There are manufacturing and quality standards for different types of tanks and your tank manufacturer, supplier or installer should advise you on the minimum design and manufacturing standards under the appropriate accredited quality assurance scheme. It should comply with BS EN ISO 9001. These include single skinned tanks, double skinned tanks and integrally bunded tanks.

It may be a legal requirement to have secondary containment or bunds, which must hold at least 110% of the volume of oil the tank is designed to contain. Tanks should be installed by a competent person who is registered with a professional scheme for the type of tank you're having installed.

Valves, filters, sight gauges, vent pipes, or other tank ancillary equipment, not including the fill pipe, draw-of pipe or pumps for oil with a flashpoint less than 32°C, must be within the secondary containment system, so any discharges of oil are retained. In terms of pipework, it is suggested that underground pipework is avoided where possible. All above ground pipework must be protected against corrosion, positioned or protected to minimise the chances of damage by impact or collision and supported so it is secure and can't come loose.

It is essential to ensure safe deliveries to the tank. Tanks should be labelled with the capacity and type of oil they contain. The area around your tank where deliveries are made and, if applicable, oil is dispensed should have an impermeable surface and be isolated from surface water drainage systems.

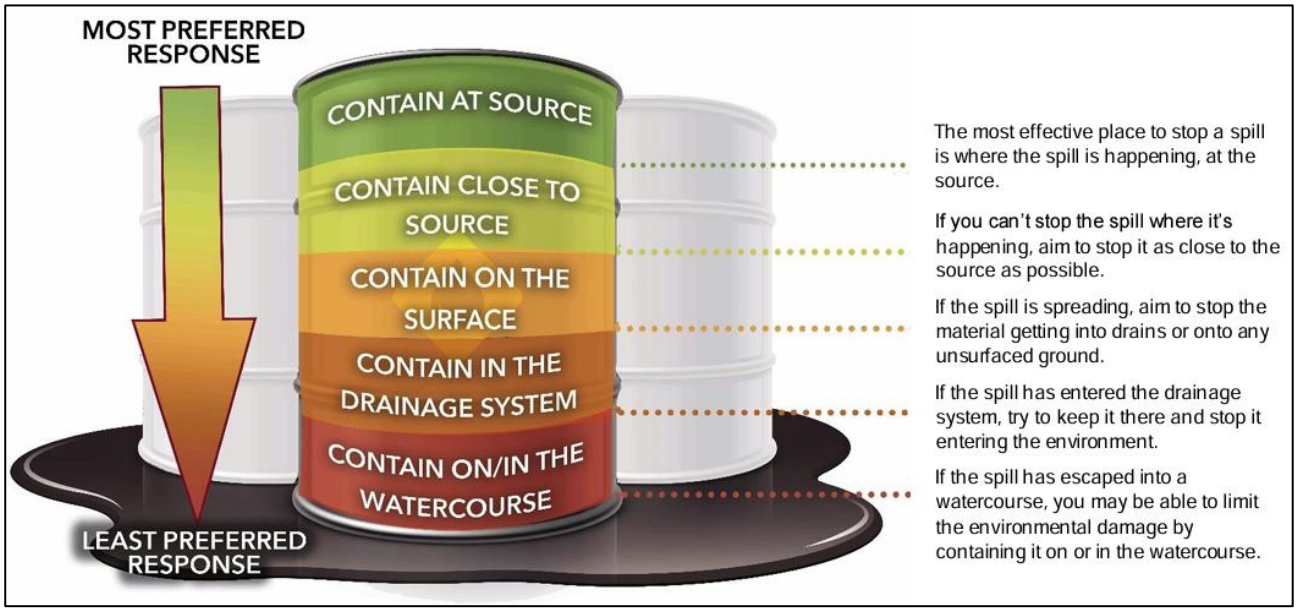
It is important to monitor the legal compliance of existing tanks with Building regulations or OSR.

As well as tanks mobile bowsers can be used to store oil. Mobile bowsers are oil storage containers that can dispense oil and are designed to be moved, either being towed or lifted onto another vehicle, but which can't move under their own power. Requirements for these are available within this guidance.

Oil storage areas should be secured to prevent theft and vandalism. Permanent taps or valves through which oil can be discharged to open areas should be locked when not in use. Display a notice telling users to keep valves, nozzles and trigger guns locked when they're not in use. Pumps should also be protected from unauthorised use. If the Oil Storage Regulations apply, you must ensure you protect the containers and the secondary containment system.

In the event of an oil spill, take immediate action to stop the oil getting into any drains or watercourses or soaking into the ground, as per **Figure 5.2**. Keep a spill kit with commercial sorbent products, sand or earth close to oil storage areas to deal with spills. Make sure all personnel know how to use it safely. If oil soaks into the ground, a professional company should remove the soil soaked in oil, so it doesn't cause long term pollution.

Figure 5.2: Pollution Control Hierarchy



5.2.3 GPP 03 Guidance for Pollution Prevention Use and Design of Oil Separators in Surface Water Drainage Systems

Oil separators (also known as oil interceptors) are fitted to surface water drainage systems to prevent pollution from oils and to prevent disruption to sewage treatment works. They are designed to separate the oil from the water, and to collect the oil for removal. They can be installed at the point where potentially contaminated water leaves a site, and protect water courses, groundwater, land, Sustainable Drainage Systems (SuDS) or the sewer system. They are often used to contain leaks from vehicles and plant, and where oils are handled and accidental spills are possible.

They are used anywhere there is a risk of oil entering surface waters or sewers from rainfall runoff, petrol station forecourts or vehicle refuelling sites, or any other site where there is a risk of oil contamination.

SuDS can be used to manage runoff from site and can reduce the overall impact on the environment. On High-risk sites they can provide further treatment below an oil separator. SuDS should be considered on all sites. The guidance covers other techniques for low risk and high risk sites as well as what to do in terms of discharges from sites.

In many cases sites change ownership and there is often little information available on the size, type, condition or even existence of separators. New owners or tenants of a site, should establish Baseline Asset information to confirm that any separator/s present on site are fit for purpose and adequately sized and type for the current activities.

Existing sites may move site boundaries, change or move processes on site. Sites should be re-assessed for separator requirement when any significant changes are undertaken to ensure adequate protection is provided.

This GPP advises that SuDS should be incorporated into the surface water drainage whenever possible, and in Scotland and Wales this is a legal requirement for new developments. This may remove the requirement for an oil separator, if the surface water leaving site is only very lightly contaminated.

The UK has adopted a two-part European Standard (BS EN 858-1:2002 and BS EN 858- 2:2003) for the design, use, selection, installation, operation and maintenance of prefabricated oil separators. It must be ensured that these standards are adhered to with when fitting an oil separator. There are

Class 1 and Class 2 separators. If too much oil is allowed to accumulate inside a separator it will not work effectively, and oil will escape. To avoid this, full retention separators must be provided with an automatic closure device.

Separators must have automatic warning devices or alarm systems to provide visual and audible warning (if necessary to a remotely located supervisory point) when the level of oil reaches 90 per cent of the oil storage volume under static liquid level conditions. This automatic warning device tells the operator that the separator is in need of immediate emptying for it to continue to work effectively.

All separators that comply with the European Standard will have been given a nominal size (NS) based on a standard test procedure. The formulae to calculate the nominal size of both a bypass separator and a full retention separator can be found within this guidance as well as the formulae to calculate both the oil storage capacity and silt storage capacity. The minimum working capacity (which excludes any provision for silt deposition) of a separator should be 1,000 litres; though for forecourts, it is likely that risk assessment will indicate the need for a larger separator. For bypass separators, the minimum capacity is defined as the working capacity of the oil separating chamber only.

To prevent pollution and minimise your costs, you need to manage your separator effectively. Every six months, or in accordance with manufacturer's instructions, experienced personnel should:

- Physically inspect the integrity of the separator and all mechanical parts
- Assess the depth of accumulated oil and silt
- Service all electrical equipment such as alarms and separator management systems
- Check the condition of any coalescing device and replace it if necessary
- Clean the sampling shaft if required.

It covers waste management with reference to the Duty or Care for waste legislation. This section reinstates points from GPP 01 such as dealing with hazardous waste.

5.2.4 GPP05 Guidance for Pollution Prevention Works and Maintenance in or Near Water

This guidance is for anyone carrying out works or activities in or near the water environment. Such activities have the potential to cause pollution, transfer non-native species and can impact on the bed and banks of a watercourse.

Potential environmental risks when working in or near water include:

- Silt
- Cement and concrete
- Chemicals and solvents
- Bridge cleaning debris
- Herbicides
- Invasive Non-Native Species (INNS)
- Waste materials (including hazardous waste or special waste in Scotland)

Even if the works that are carrying out are required because of an emergency, this Guidance for Pollution Prevention should be followed as closely as possible.

Good soil use and management is crucial to preventing silt pollution which is a major cause of environmental incidents. It can harm water quality, damage and kill aquatic life by smothering and suffocation and can cause flooding by blocking culverts and channels.

Activities that cause silt pollution include:

- Run-off from exposed ground/stockpiles
- Plant washing, roads and river crossings
- Dredging
- De-watering/ pumping excavations

Where run off water is contaminated with silt or other pollutants such as oil this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. Discharges to the water environment may require formal approval from the environmental regulator. The choice of method for the treatment and disposal of contaminated water will depend on:

- the volume of water
- the area of land available for storage, treatment or discharge
- the amount and type of silt
- the presence of other substances in the water
- the conditions of any consent or authorisation.

Contaminated water treatment and disposal options include:

- Sustainable Drainage Systems

  The most effective SuDS use a series of drainage components to imitate natural drainage rather than traditional end-of-pipe drainage solutions.

- Settlement lagoons/tanks

  To be effective a settlement lagoon or tank should retain contaminated water long enough for silt to settle out. The length of time will depend on the type of silt

- Filtration

  If you do not have the space for lagoons and the water is contaminated with coarse silt only (not fine clay silts), you may be able to use tanks filled with filter material.

- Pump to grassland

  This method of disposal is only suitable for water contaminated with silt only and you must have permission from your environmental regulator and landowner.

- Discharge to sewer

  Discharges to foul sewer will require the permission of the local water and sewerage provider.

- Tanker off site

  If no other disposal routes are available, then contaminated water can be collected by tanker for authorised disposal off-site.

Concrete, cement and grouts are very alkaline and corrosive and can cause serious pollution to water. Concrete, cement and grout mixing and washing areas must therefore meet certain requirements which can be found in this guideline. Wash waters from concrete and cement works should never be discharged into the water environment as this could have serious impact on the water quality and ecology.

Guidance on bridge maintenance and structures over water discusses pollutant containment during maintenance and advised methods of paint removal, surface cleaning and painting.

Information on **pesticides** including the required equipment and methods of spraying is found in section 6. If it is decided to use a pesticide in or near water, approval is needed from an

environmental regulator before use, however it should always be considered alternative ways of controlling pests and weeds in or near water.

This guidance covers INNS and how to eliminate the risk of transferring water and soil potentially containing plant or animal diseases, or invasive non-native species, to or from the development site.

Legal waste storage and disposal are essential for effective pollution prevention. This reinstates what is outlined in other GPPs concerning Duty of Care and storage and disposal of hazardous waste.

5.2.5 GPP06 Guidance for Pollution Prevention Working at Construction and Demolition Sites

This guidance is for anyone carrying out works or activities on construction or demolition sites. Any building or development works are considered to be construction sites. Such activities have the potential to cause pollution and harm to the environment.

On construction and demolition sites there are forms of pollution that are classed as a statutory nuisance, noise being the largest cause of complaint. Activities that can cause nuisance should be regularly monitored and it should be checked that measures put in place to reduce or eliminate nuisance are working. This guidance covers how to minimise nuisance in terms of operating vehicles and machinery and the importance of informing neighbours.

Section 2 managing water on construction sites discusses ways in which to minimise 'dirty' water such as: reducing the area of stripped soil, stop water entering working areas, keep nearby roads clean, and protecting watercourses. Water can be treated through on site treatment methods or alternative treatment methods such as Sustainable Drainage Systems, settlement lagoons or tanks, filtration and the use of oil separators. Water can also be recycled through various methods including rainwater harvesting, wheel washing systems and recycling concrete wash down water.

Where run off water is contaminated with silt or other pollutants, such as oil, this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. There it must be established what the most appropriate method of water disposal is from site. The various methods discussed are as follows:

- pumping to grassland,
- discharging to sewers and
- collection by a tanker for disposal off-site.

Protecting soils is essential for many environmental, social and economic functions. This guidance offers information on how to protect soils and prepare a soil resource plan. Before starting work on a contract, a soil survey should be carried out. It outlines how the criteria to create good stockpiles and how to deal with contaminated land. If unexpected contamination is discovered on site, stop works and seek advice from an environmental regulator or the local district council. At times it may be necessary to import or export soil from sites, under these circumstances refer to this guidance for the measures that should be followed including information on surplus soil for use off-site, topsoil from outside the site and using soils from brownfield or industrial sites.

Other areas such as archaeology, unexplored ordnance, invasive non-native species and pesticides must be considered when working on construction and demolition sites. In terms of the environmental and fire protection, this GPP discusses safe delivery access, maintenance, and security requirements before deciding where to put any permanent or temporary oil storage facilities. Fuel stores should be in dedicated areas specifically designed and constructed to be safe and secure. When using and handling oil and fuel on site, dispensing and refuelling must be taken into account alongside the regular inspection and maintenance of all storage facilities. On construction and demolition sites it is important to be aware of asbestos in terms of waste management, to prevent any adverse health effects.

Cement, concrete, and grouts are highly alkaline and corrosive and can cause serious pollution to the ground and watercourses therefore advise on working with these materials on site and near water courses is provided. All chemicals and hazardous substances should be stored away from watercourses, drains and areas where there is risk of damage from impact or collision.

Pollution incident response plans should be produced to identify the possible pollution incidents and outline the actions necessary to minimise pollution any caused. This is a site-specific document. All environmental incidents should be immediately reported to the relevant environmental regulator.

5.2.6 GPP08 Guidance for Pollution Prevention Safe Storage and Disposal of Used Oils

This guidance is for anyone who stores and disposes of used oils. The guidance applies to activities ranging from a single engine oil change to those of large industrial users.

Disposing of domestic used oil from households refers to engine oil and used cooking oils and fats. Used oils such as engine or gearbox oil from vehicles of machine maintenance should be taken to specific oil banks to be recycling. Used cooking oils and fats should be allowed to cool before separating them for collection and should not be poured down the sink. They can be recovered in local authority food waste collections or disposed of in the general household waste through being soaked into normal household rubbish or putting them into rigid plastic containers.

Used mineral oil from commercial and industrial sources will be classified as hazardous/special waste. It must be managed in accordance with the relevant regulations which impose legal requirements for its movement, recovery and disposal. Used oil is a useful substance that can be recycled and reused or recovered and used as a fuel to save resources; it should be treated as such. Cooking oils from commercial users can be collected by specialist contractors and recovered by manufacturers of biofuels.

Sites such as garages can generate large quantities of used oil. This oil must be collected by a registered waste carrier. Electrical transformers may use specialist oil. When spent, used transformer oil is always a hazardous/special waste.

In terms of storing waste oil and associated pipework in all cases care must be taken to avoid spillage when transferring waste oil to storage facilities. Any spills should be dealt with using absorbent materials. The environmental regulators recommend that waste oil tanks should be installed and pipework above ground whenever possible. This enables regular maintenance checks to be carried out more easily, allowing leaks to be identified earlier. This document offers guidance on above ground storage, on site storage of waste oils, underground tanks and pipes and the disposal of waste from bunded areas.

Regardless of whether they are covered by specific on-site waste oil storage legislation, all oil storage facilities must be sited on an impervious base within an oil-tight secondary containment system such as a bund. Where oil is stored within a bunded area, rainwater and oil residues can build up. This build-up reduces the storage capacity of the bund and you should remove it regularly by bailing from the sump or using a manually operated pump. This residue is likely to be contaminated with oil and, as such, may be hazardous/special waste.

The storage of used oils below ground poses a potential threat to groundwater. All new tanks must be double skinned with a suitable leak detection device. If you do not have a continuous leak detection system you must test:

- Pipework before use
- Pipework with mechanical joints every 5 years
- All other pipe work at least every ten years.

5.2.7 GPP20 Guidance for Pollution Prevention Dewatering Underground Ducts and Chambers

This guidance is for utilities and contractors who often need to remove a build-up of water from underground ducts and chambers. The volume of water is usually below 5m^3, but can be contaminated with:

- Silt
- Oil
- Various chemicals

If the water is not dealt with correctly there is a risk of pollution to surface waters and groundwater. Discharge should directly to a watercourse unless this has been agreed with your environmental regulator. If the water or silt is contaminated it could be classed as hazardous/special waste. WM3 can be used to help classify the resulting waste and to determine whether it is hazardous/special waste. Advice from an environmental regulator should be attained if in doubt about the classification of the materials.

There are alternative options that don't involve a discharge to ground or water including design through pumping to a foul sewer or by removal to a waste or treatment facility. If possible, design and construct ducts and chambers that prevent the ingress of water. If water is likely to enter the structure sloped can be used on the base of the chamber and include a sump where water can collect.

Alternatively, any accumulated water should be pumped to a foul sewer if possible. This will ensure that any contamination is treated before it is discharged. If there is no access to a foul sewer, and a sample of the water has either:

- Silt in suspension;
- An unusual colour; and
- An unusual odour.

Water should be removed by pumping to suitable containers or to a tanker. This must then be taken to a licensed waste disposal site and transported by a suitably licenced waste carrier.

If contamination is suspected where there is no odour or colour present, for example from metals or organics, samples should be analysed by a lab.

You must comply with the requirements of the Duty of Care Regulations. There is a legal responsibility to produce, store, transport and dispose of controlled waste without harming the environment.

If no foul sewer is available it can be discharged to land or water. Before discharging water from a duct or chamber it is your responsibility to make a thorough check of the quality of the water. If the water is clean accumulated water without silt and if it is possible to remove light contamination, then pumps can go directly to surface waters or to a surface water drain. If possible, water should be pumped across a grassy strip to remove any silt.

5.2.8 GPP21 Guidance for Pollution Prevention Pollution Incident Response Planning

These guidelines set out best practice for producing an incident response plan to deal with an environmental incident on your site. Following such a plan will help you to prevent or reduce environmental damage if such an incident occurs. The guidelines set out:

- why you need a plan

- what information you should include
- who should be involved in its production
- what the plan should look like by providing a template.

It is important to minimise the risk of pollution to protect the environment and human health. If pollution is caused, one can be liable to enforcement action by the local Environmental Regulator.

This guidance is for:

- site operators of industrial and commercial premises to help them produce an incident response plan.
- other organisations, authorities and individuals whose site or operations pose a potential risk to the environment and who should have an incident response plan.
- the Fire and Rescue Service and others who may be involved in the production of, and/or have an interest in such plans, for example the Health and Safety Executive, Maritime and Coastguard Agency, Government Decontamination Service, public health officials and insurers/underwriters.

The guidelines are aimed at sites which are not already required, as a condition of a permit, to prepare pollution incident response plans. If you operate a site that is required to have a pollution incident response plan, then one should speak to their environmental regulator about the specific requirements for site. Contact details are listed at the end of these guidelines.

The Pollution Incident Response Plan could be designed to deal with environmental incidents on site, or it could be part of a more comprehensive incident response plan for the site, for example Control of Major Accident Hazards (COMAH) on-site and off-site plans.

The planning cycle consists of 5 stages:

- Assess the risks on site

  Identify all potential risks to the environment from the materials, processes and activities on your site. Refer to GPP1, GPP18 and GPP28.

- Gather information and prepare your plan

  This includes a cover page, external and internal contacts list, site chemical products and waste inventory, pollution prevention equipment inventory, site plan and drainage plan.

- Activate your plan and seek responses

  Once plans have been developed, develop supporting emergency procedures to check the plan works if there's an incident. Make sure all relevant staff and contractors are aware of these procedures and the plan.

- Test plans and train your staff

  Once the plan has been completed test it regularly by carrying out exercises. At some sites, for example COMAH sites, it is a legal requirement.

- Review plans and update it

  The plan must remain effective and up to date, so record any lessons learnt from exercises or actual incidents. Use these recommendations, or comments from staff and contractors, to improve any developed plans.

Once any relevant comments have been considered, distribute copies of the completed plan to the relevant organisations.

5.3 Emergency Procedures

A Site Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and emergency services. A Pollution Incident Emergency Response Plan would be developed in accordance with the guidance set out by the Environmental Protection Agency (EPA). **Appendix G** of this OCEMP contains an example Emergency Response & Environmental Plan. The Environmental Emergency Plan would set out the procedures to be followed and measures to be implemented in the event of a pollution incident. These incidents may be the result of:

- **delivery and use of materials;**
- **spillages of oils or chemicals;**
- **discharge of silty water or other pollutants to watercourses;**
- **flooding event; and,**
- **fire (emissions to air).**

Emergency procedures are developed to support the response plan. The procedures define the circumstances when the plan should be activated and include:

- **the names and contact details of staff trained in incident response,**
- **clearly defined roles and responsibilities,**
- **the types and location of emergency response equipment available,**
- **the location of the emergency assembly point, and,**
- **Procedures for recovering spilled product.**

Responsible staff will be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Site Manager.

The Environmental Manager will observe the test and to report on results. Any corrective actions are taken forward for review and approval.

Should an emergency incident occur, the Environmental Manager will be notified immediately. The emergency response will be co-ordinated by the Site Manager.

Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation and shall be put into place, having regard for the sensitivities of the environment.

A record of the emergency incident will be kept to show the nature of the corrective action undertaken. (See **Appendix C** for an example template).

Appendix G of this OCEMP contains an example Emergency Response & Environmental Plan. All relevant staff would be trained in how and when to contact the emergency services, EPA and other organisations identified in the Environmental Emergency Plan.

5.4 Oil Storage and Refuelling

Oil storage and refuelling areas will not be located close to any local watercourses or any drainage ditch which feeds into a watercourse. The following measures must be implemented.

- **Dedicate specific areas for oil storage and refueling, bunds sized to contain 110% of fuel storage capacity.**

- **The contractor will use fill point drip trays, bunded pallets and secondary containment units.**
- **The site will be enclosed and secured, and fuel storage areas will be secondarily secured.**
- **All fuel; oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring.**
- **Storage of COSHH items is not permitted and only brought to site as required, where small portable machines are to be fueled up a drip tray is used.**

5.5 Concrete Pouring

Concrete, cement and grouts are very alkaline and corrosive and can cause serious pollution to water. The following measures shall be followed on-site during construction and pouring of concrete:

- Ensure that concrete pours are contained within the working area and do not enter any watercourses or surface water drains.
- When mixing grout on site, construct a suitable barrier around mixing areas, supply lines and around working areas to prevent its escape.
- Trucks, hoppers, mixers and concrete pumps that have contained concrete must be washed out in a contained area, see 'management of concrete wash out areas' below.
- All concrete pours will be carried out under supervision.
- Pours will be properly prepared to avoid run off (shuttering, mud matts, membranes used) and waste.
- **Pouring of concrete should not take place when heavy rain is imminent.**

Wash down water arising from the washing of equipment that has come into contact with concrete will be collected in an impervious container.

5.6 Stockpiles

Management of stockpiles in accordance with best practice should include where possible 10 metre buffer zone between the stockpile and any watercourse. If required additional mitigation such as silt fencing at the toe or geotextile wrapping of the stockpiles should be considered to manage contaminated run off. The following measures are proposed in relation to stockpiling of materials:

- Locate stockpiles out of the wind or provide wind breaks to minimise dust generation
- Keep stockpiles to minimum practicable height and use gentle slopes
- Minimise the storage time of materials on site
- Store materials away from the site boundary
- Minimise the height of fall of all materials
- Avoid spillage, and clean any spill up as soon as possible
- Good soil handling and storage methods including protection of stockpiles with geotextiles.

Stockpiled material is located more than 10m away from the exclusion zone around the water body.

5.7 Silt Management

Good soil use and management is crucial to preventing silt pollution which is a major cause of environmental incidents. It can harm water quality, damage and kill aquatic life by smothering and suffocation and can cause flooding by blocking culverts and channels. The following will be implemented on-site:

- Do not allow water containing silt or mud to discharge directly to any waterway.
- Minimising the amount of time stripped ground and soil stockpiles are exposed.
- Only removing vegetation from the area that needs to be exposed in the near future.
- Using geotextile silt fencing at the toe of the slope, to reduce the movement of silt; this should be installed before soil stripping has begun and vehicles start tracking over the site.
- Plant washing is carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain.
- Where run off water is contaminated with silt or other pollutants such as oil this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment.
- Silt controls in place to prevent silt entering watercourses or drains.
- Silt treatment options can be complex or relatively simple depending on the volume of water, the amount and type of silt and the type and size of site. Whichever method is used, an area where water can be undisturbed for a period of time. These facilities must be correctly installed, routinely maintained and inspected to ensure they’re working efficiently.

6 Environmental Performance Management

6.1 Environmental Risk Register

The Environmental Manager/Officer should prepare and maintain an Environmental Risk Register having regard for legal requirements, project environmental commitments the potential for aspects of works to cause significant environmental impact.

The Environmental Manager should record responsibilities assigned for actions required for mitigation and control of the environmental risks in the Environmental Risk Register.

The Environmental Risk Register will be subject to regular review by the Environmental Manager together with the Site Manager.

6.2 Consents

Copies of legal consents, permits and licences obtained will be held in the site environmental file by the Environmental Manager.

6.3 Method Statements and Risk Assessments

Specific environmental risks will be assessed during preparation of method statements. Actions and environmental constraints associated with specific construction operations will be included in method statements, field control sheets and activity plans where appropriate. Generic environmental requirements will be included in all method statements. Details of what should be included in method statements are set out in **Appendix E**.

6.4 Inspections

Routine inspections to check that pollution control measures are in place will be undertaken by the Environmental Manager, who will produce weekly inspection reports. Daily inspections will be made by the supervisors during each shift and any environmental problems or risks that are identified will be actioned as soon as is reasonably practicable. Any issues arising from the daily inspections will be notified to the Environmental Manager. **Appendix B** of this OCEMP details an example environmental inspection schedule.

6.5 CEMP Review Programme

The CEMP is a **'live'** document that will be updated by the Contractor and reviewed by the Environmental Manager on a monthly basis as a minimum. The CEMP will also be reviewed following any environmental incidents which require the works methods to be updated or changed.

6.6 Notices of Non-Conformance

In instances where the requirements of the CEMP are not upheld a non-conformance and corrective action notice/procedure will be produced. The notice/procedure will be generated during the inspections conducted by the Supervisors, the Site Manager, Environmental Manager or any external third-party audits.

The Site Manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming. An incident report form is set out in **Appendix C**.

6.7 Complaints Handling

The response to any complaints will be managed by the Site Manager, who will inform the Environmental Manager of any environmental complaints. A Complaints Register will be maintained to detail the name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover.

The Environmental Manager will ensure that all environmental complaints and concerns will be responded to in 24 hours. An example complaints form is contained with **Appendix B1** of this OCEMP.

6.8 Key Performance Indicators and Objectives

The Contractor should set environmental objectives in order to continuously improve environmental performance on the site. The Contractor will set objectives based on each significant environmental impact and they will be reviewed, and revised if necessary, on a monthly basis. Procedures, monitoring requirements and key performance indicators will be measured against achievable targets.

7 Work Programme

7.1 Proposed Programme of Works

The Proposed Development will be constructed in accordance with the drawings submitted in support of the planning application. The construction phase of the Proposed Development is anticipated to cover a period of up to eight months. During this period, there will be a combination of HGVs for the component deliveries and cars/vans for construction staff. HGV movements are expected to be most intense throughout the stage of construction, tailing off towards the final weeks. Car/van movements are expected to be constant throughout.

The following activities will be undertaken during the construction phase:

- Erecting construction traffic signage;
- Creation on internal site tracks;
- Sustainable Drainage Systems (SuDS) installation;
- Erecting security fence;
- Erecting temporary construction compound;
- Site preparation, including mowing and marking out if required;
- Piling the frame supports into the ground;
- Affixing the mounting frames and panels;
- Concrete base formation for the transformers;
- installation of transformers;
- Cable route trenching and cable laying;
- Connecting cables and backfilling trenches; and
- Removal of construction compound.

7.2 Construction Hours

It is assumed that the construction hours will be:

- **07:00 to 19:00 Monday to Friday;**
- **From 08:00 to 16:00 on Saturdays,**
- **No construction works on Sundays and Bank Holidays.**

Outside of these times works are limited to a) commissioning and testing and b) Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer retrospectively notifies Offaly County Council of such works within 24 hours of their occurrence.

7.3 General Site Set Up

7.3.1 Site Construction Compound

There will be a temporary site compound in in the Proposed Development during the construction period. Please refer to Figure 4 for the location of the temporary compound.

- All construction support activities will be controlled within the site construction compound including;
- A site office;
- Containers to facilitate storage of panels and tools;
- Areas of parking;
- Fuel storage container;
- Kitchen;
- Chemical toilets; and,
- An area of storage for sand to facilitate cable laying.

The temporary compound will be constructed using a geogrid base, or similar, to facilitate removal and reinstatement.

7.3.2 Waste Disposal

The proposal will not generate any waste. Toilet facilities on-site will be self-contained to be appropriately disposed of off-site by qualified contractors. Any hardcore associated with the reinstatement of temporary construction compounds will be removed and disposed of appropriately.

7.3.3 Plant and Equipment

The plant and equipment likely to be associated with the construction process is set out as follows:

- JCB Diggers;
- Dump trucks;
- Vibrating roller;
- Piling machine(s);
- Telehandler(s);
- Crane; and
- Fuel bowser.

7.3.4 Site Clearance

The Proposed Development site comprises agricultural grassland. Disturbance of the land during construction will be minimal as it is proposed the panels will not be placed on the entire site area and rather there will be spacing between the rows and field boundaries to allow for separation distances.

7.4 Construction Traffic

The Proposed Development requires an estimated total of 10-30 staff to be on site at any one time during the scheme construction. Construction staff will typically arrive in teams of 3-5 persons in working vans. Whilst the number of construction staff will vary across the construction phase, in accordance with a worst-case scenario approach, this assessment considers the above referenced maximum peak period. During these months there will be up to 30 construction staff arriving on site per day with an area of the site's temporary construction compound to be used to park vehicles. Allowing for 10 staff vehicles arriving in teams of 3 staff, this equates to 10 staff vehicles arriving at the site and 20 two-way staff vehicle trips per day.

These construction staff and HGV traffic movements will all be scheduled to occur outside of the traditional commuter peak periods of 08:00 - 09:00 and 17:00 - 18:00. Workers are predicted to arrive between 07:00 and 08:00, leaving site before 17:00 or after 18:00 in the evening. HGV deliveries will arrive/depart during the working day (out of the AM/PM commuter peaks) and in accordance with the outline Construction Traffic Management Plan (CTMP). It should also be noted that the construction phase impact upon the surrounding road network will be temporary, and the volumes of traffic described above are entirely within the range of normal fluctuations in daily traffic that would be expected upon the road network.

7.4.1 Proposed Access

The new access point has been designed following the Geometric Design of Junctions DN-GEO-030601 guidelines, supported by swept path analysis demonstrating that the largest construction vehicles can safely enter and exit the site entrances, confirming the design's suitability. The CDP states that visibility splays of 120m by 2.4m are standard for Local Primary Roads, while visibility splays of 60m by 2.4m are standard for Local Tertiary Roads).

The proposed site access will be located on Derrygrogan Little Road. The access was designed to achieve a visibility splay of 2.4m x 160m. A swept path analysis was also undertaken to assess the manoeuvring of HGVs into and out of the site. To accommodate the site access 14.8m hedgerow will need to be removed.

Detailed designs for the access point will be completed following the grant of planning permission. The connection between the new access point and the public highway will be constructed in accordance with the Transport Infrastructure Ireland (TII) Specifications for Road Works Series 900.

7.4.2 Deliveries

Delivery of equipment and materials will be carefully controlled and managed at the site. Access and egress to the proposed area will be managed by the General Contractor. Delivery times will be planned in advance.

7.4.3 Internal Service Tracks

New internal tracks will be built to facilitate construction, operation, maintenance, and decommissioning of the solar panels and related infrastructure. These tracks will be 4 meters wide, with increased width at bends. All new tracks will be unpaved and constructed using local stone. To minimize the depth of track construction, geosynthetic reinforcement or soil stabilisation techniques may be employed. The surface will consist of compacted granular material (crushed rock) with an approximate thickness of up to 0.3 meters, depending on ground conditions.

7.4.4 Temporary Traffic Construction Measures

Within the site itself, a construction compound area will provide an area for loading and unloading of vehicles and will provide a turning area to allow vehicles to exit the site in forward gear, in line with Offaly County Council requirements. All delivery drivers and construction workers will be advised of the construction route prior to making their delivery or commencing work. Due to the movement of construction traffic, a speed limit will be implemented on site for health and safety reasons. It is also proposed that temporary signage be located in the vicinity of the site access during the construction period to warn drivers of the site entrance, as shown in **Figure 8.3** below.

Figure 7.1: Temporary Signage at Site Access

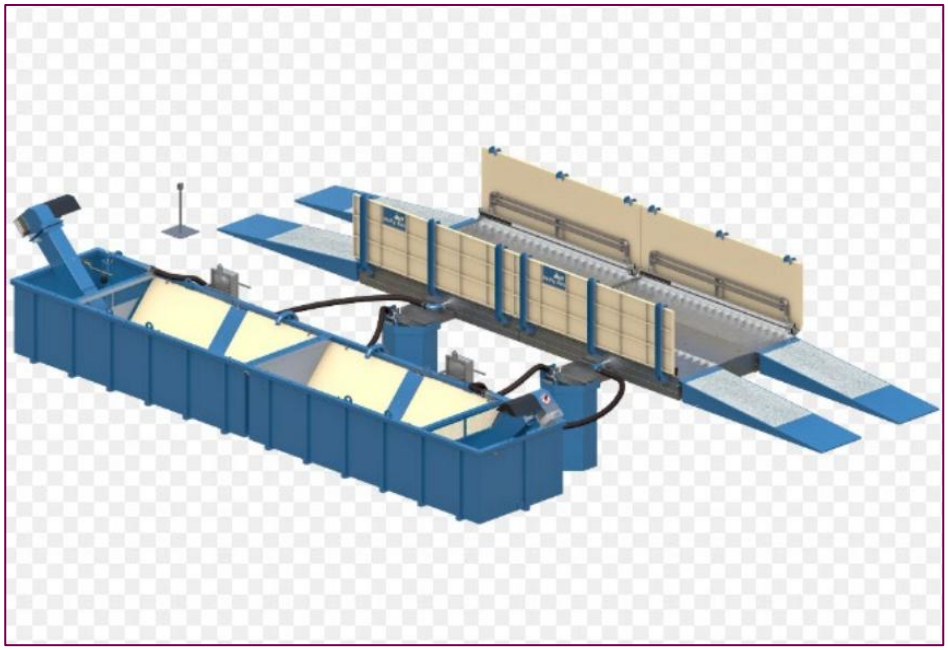
The Site Manager for the project will undertake the transport co-ordination role for the site. In this respect, their main responsibilities will include:

- Vehicle scheduling;
- Checking for scheduled road works that could disrupt arrivals;
- Checking for scheduled refuse collections to avoid conflict with HGV deliveries within built up areas;
- Handling any complaints; and
- Acting as a point of contact for employees, contractors and the general public.

7.4.5 Vehicle & Wheel Wash Facility

A temporary wheel wash system with overground settlement tank will be installed at the construction exit points from the site to prevent soil from being carried onto the public road network. The overground settlement tank will be used within the wheel wash system in order to contain the washings and remove solids and oils from the water either through commercially available systems or a bespoke system developed. The wash water can then be discharge to sewer under agreement with the EPA or tankered off site for authorised disposal. The effectiveness of the wheel wash facilities will be monitored throughout the construction of the development.

Figure 7.2: Example Wheel Wash



To reduce the pollution risk from the wheel wash the contractor will make sure that the following principles are adhered to:

- plant and wheel washing is carried out in a designated area of hard standing at least 10 metres from any surface water drain;
- settled solids are removed regularly; and,
- discharge of contained water goes to foul sewer (if possible and following testing) with prior permission from the EPA or tanker off site for authorised disposal.

7.5 Services

Note that in relation to working near services such as electricity, gas, water etc, liaison will take place with the service provider.

All utility services discovered adjacent to the site will be treated as "live" until proven otherwise and the co-ordination of switchovers and temporary disruptions for new constructions will be undertaken in accordance with the standard procedures of the relevant statutory authorities.

7.6 Construction Site Security

Throughout the construction phase, adherence to high standards of Health and Safety for all construction workers, site visitors and members of the public will be of paramount importance. All construction activities will take place in the context of the relevant Republic of Ireland Health and Safety legislation.

As such, it is important that the construction site is secured adequately to ensure that uncontrolled access e.g. by children or vandals, is restricted as much as possible. As well as the potential health and safety risk from uncontrolled access, it is recognised that one of the biggest causes of pollution events from construction sites is due to the activities of vandals.

7.6.1 Lighting

During the construction phase of the Proposed Development, an effort will be made to keep the use of artificial lighting to a minimum, this will be achieved by limiting dawn or dusk working. Where artificial lighting is required, where practical use deflectors or angle lighting away from the water course to minimise disturbance.

7.6.2 CCTV Cameras

For security purposes there will be CCTV cameras placed strategically throughout the development site. These will be pole mounted to height of 3.5m, be directed along fence-lines and utilise infra-red technology.

Cameras are designed to not move either intentionally or unintentionally due to adverse weather conditions or animal activity.

8 Environmental Mitigation Measures

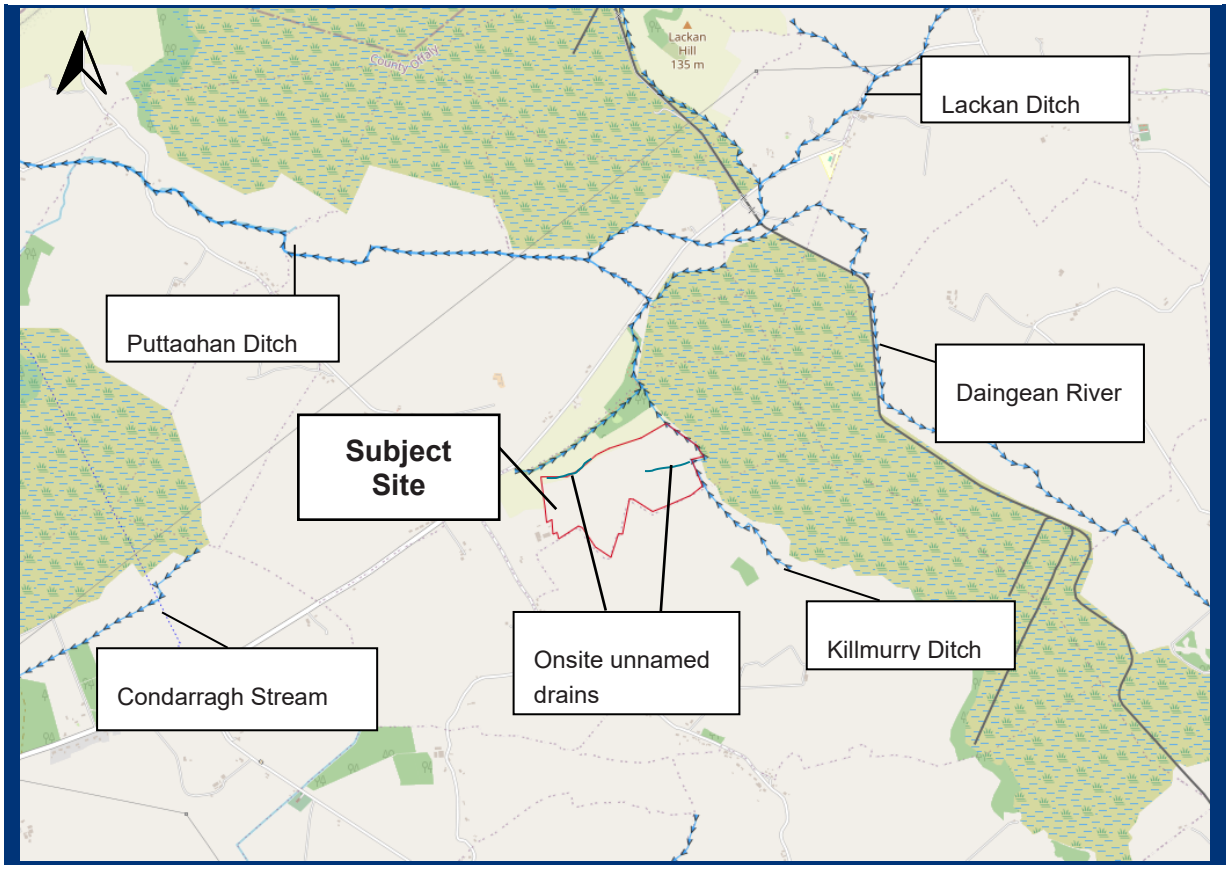
Supporting environmental assessments (submitted in support of the planning application) have been undertaken which have assessed the likely impacts that the Proposed Development may have on the environment. Those supporting environmental assessments also propose mitigation measures to reduce the magnitude of effect of those likely impacts. Sections 8.1 - 8.6 details mitigation measures proposed for the Development.

An environmental inspection schedule is set out in **Appendix B**. An incident report form is set out in **Appendix C**. A site waste management plan (SWMP) is set out in **Appendix D**. An Emergency Response & Environmental Plan is located in **Appendix G** of this document. Details of what should be included in method statements are set out in **Appendix E**.

8.1 The Water Environment

Development Plans, available in Appendix A indicate two drainage ditches on site. These comprise of a ditch running from the central to the eastern boundary and a ditch running on the northern boundary. Environmental Protection Agency (EPA) Mapping indicates that Killmurry Drain is located east of the site boundary, running from the southeast to the northeast. This is hydraulically linked to a tributary of the Silver River (Puttaghan Ditch) approximately 145 m north of the site, running northeasterly through Killmurry bog approximately 95m north of the site. This converges with the main river approximately 5km northwest of the site. The River Daingean runs approximately 1.03km east of the site, running in a southeasterly direction. **Figure 8.1** displays the locations and flow direction of watercourses within 2km of the site.

Figure 8.1: Locations and flow direction of watercourses (Extracted from EPA river network)



No significant artificial watercourses / features (e.g. canals, reservoirs) have been identified within 1km of the Proposal Site. The Grand Canal is approximately 3.2km south of the Proposal Site.

The Proposal Site and the surrounding area lies within Hydrometric Area No. 25, Lower Shannon (Water Framework Directive) Catchment Area and within the Tullamore sub catchment 'SC_010'.

The Proposal Site is mostly within the Silver (Tullamore)_020 river sub basin. The west of the site is within the Tullamore_030 river sub basin.

8.1.1 Mitigation Measures

Suitable protection for watercourses potentially affected by the works will be installed prior to relevant works proceeding. These measures will be in-line with Environmental Protection Agency (EPA) Pollution Prevention Guidelines. Protection measures will include:

- Plant and equipment will be stored on dedicated hardstandings within the construction compound. This will minimise the risk of pollution caused by leakages occurring out of hours. Drip trays will be used where appropriate.
- All plant and equipment will utilise biodegradable hydraulic oil.
- Spill kits will be readily available to all personnel. The spill kits will be of an appropriate size and type for the materials held on site.
- Diesel fuel will be stored in a bunded diesel bowser which will be located within a fenced off area in the construction compound.
- Refuelling and maintenance of vehicles and plant will take place in designated areas of hardstanding.
- All other chemicals will be stored within a storage contained with an accompanying COSHH Datasheet.
- Wastewater from the temporary staff toilets and washing facilities will be discharged to sealed containment systems and disposed via licensed contractors.
- Early seeding of embankments near watercourses would be undertaken to reduce the potential for sediment run-off.

All staff on site will be made aware of the pollution prevention measures being implemented throughout the construction and decommissioning phases using appropriate toolbox talks and the site induction.

8.2 Drainage

The greenfield nature of the Proposal Site means that surface water will slowly soak into the ground (infiltrate), be intercepted by vegetation or run off by way of overland flow, according to the soil characteristics and following the topography of the site. Greenfield runoff rates for the site have been calculated using the calculations for 1ha using the IH124 Method.

The site is underlain by Till derived from limestones, underlain by bedrock visean limestone and calcareous shale. Infiltration is proposed for the transformers, and the access track should be comprised of permeable material, which will allow water to infiltrate the underlying ground under greenfield rates.

A description of the drainage strategy for the proposed development is provided below. The Drainage Strategy drawing is presented within **Appendix A**.

8.2.1 LV/MV Transformers

There will be 7no. LV/MV Transformers on the Proposal Site that could potentially give rise to a total of 103.5 m^2 of new impermeable surfaces (approximately 14.79m^2 for each LV/MV Transformers).

In order to attenuate flows from the 1 in 100-year + 20% climate change event, each LV/MV Transformers is to be placed adjacent to a 14.79m^2, 300mm deep gravel infiltration trench with a 30% void ratio, each providing 1.32 m^3 of surface water attenuation.

What would otherwise be topsoil will be replaced by gravel, which has 30% more porosity and storage capacity than the existing topsoil would have. Surface water storage volume calculations were undertaken using rainfall data provided by the Irish Meteorological Service. All designs are subject to detailed design.

Due to the small size of the units, and the widespread nature of their locations across the development, it is impractical to connect them into a drainage scheme also given the proposed gravel subbase would have a betterment on porosity. Water runoff from these buildings will slowly drain into the underlying geology through infiltration. Each transformer may have an associated 1.5 m width walkway (if required) on either side. However, these will be a permeable structure and not considered to impede drainage.

8.2.2 Solar Arrays

The majority of the solar farm will be occupied by solar arrays. Although arrays have a large land take, the actual ground impact is negligible. The only intrusion will be from the pile-driven posts. There will be one post for about 6-7 panels, so there is likely to be 6-7m between each post. Posts are made of galvanised steel and are not solid poles. Traditional fixed solar arrays have a surface area ground impact in the range of 0.0012m^2 – 0.0014m^2.

Solar panels will be mounted on galvanised metal mounting frames which will be supported by posts piled into the ground at a depth of up to c. 1.5m. The direct impacts from the piling are considered to be minimal due to the small total area covered, with each pile having a diameter of 0.1m and an area of disturbance of 0.008m^2.

Piling is anticipated to be done by a c. 2.95 tonne pile driver with rubber tracks. The relatively low weight of the vehicle (compared to standard agricultural vehicles which are currently on use on the Application Site) and the rubber tracks (as opposed to tyres) indicate that its activity is not expected to have any impact upon potential sub-surface remains. A standard agricultural vehicle will also be used to move panels on areas without an access track where this is required. This vehicle will be of similar weight and specifications as other agricultural vehicles which are commonly used on the land.

As a result of the construction of the solar panels, some rainfall will be intercepted by the surface of the arrays before reaching ground level. Intercepted rainfall will either run down the face of the panels and drip onto the ground or will be lost due to evaporation. Without mitigation, there is a risk of erosion on the ground on which rainwater drips. This could then result in the formation of rivulets which could increase the speed at which runoff discharges from the Site.

8.2.3 Access Tracks

The surfacing of access tracks is subject to detailed design. The access tracks should be constructed using permeable material, to ensure surface water can infiltrate into the ground. The access tracks will be permeable and not require formal drainage.

8.2.4 Mitigations

8.2.4.1 Clean Water Diversion

Where feasible, clean water (e.g. water that has yet to come into contact with any disturbed construction or working areas), will be kept separate from the watershed or intercepted by the solar farm construction drainage.

Up-gradient cut-off ditches and water diversion measures will be installed in order to intercept and divert clean water around construction compound area. These measures will be installed ahead of the main construction works. This will reduce or prevent the amount of potential silt-laden or polluted water that might require treatment.

Clean runoff that has been diverted around an area of working should be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques.

Sediment control measures, such as silt traps, gravel, sand bags, anchored straw bales or silt fencing might be required at the discharge point to prevent erosion at the outlet and aid dispersion of the diverted water.

8.2.4.2 Silt Control

Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in the solar farm construction.

Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags etc.) that might need to be deployed onsite, will be removed on completion of the works.

Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the Application Site.

8.3 Ecology

8.3.1 Ecological Clerk of Works (ECoW)

An Ecological Clerk of Works (ECoW) will be appointed (**prior to the commencement of any works**) to provide advice both pre-construction and during construction in relation to relevant international and national legislation relating to the protection of ecology; to provide advice on the timing of works and the implementation of mitigation measures; to apply for relevant derogation licences if applicable; to monitor identified works; and to produce site inspection reports. No development activity, including ground preparation or vegetation clearance shall take place until a competent ecologist has been appointed as an ECoW and the details, roles and responsibilities of the ECoW submitted to and approved by the local Council.

An ECoW is a person who has the ecological qualifications, training, skills and relevant experience to undertake appropriate monitoring and to provide specialist advice to site personnel on the necessary working practices required to safeguard ecological features on site and to aid compliance with any consents and relevant wildlife legislation. There may be more than one ECoW required depending on the specialist advice required throughout the project.

Table 8.1: Details of Ecological Clerk of Works (ECoW)

ROLE	COMPANY	NAMED CONTACT	CONTACT DETAILS
Ecological Clerk of Works	Write name of company here	Write name of person here	Write phone number here

8.3.1 Birds

Timing of works will ensure that the removal or management of vegetation including hedgerows / tree[1] and scrub will take place outside the bird breeding season, which extends between 1st March and 31st August inclusive, to ensure breeding birds are protected from harm. If pre-construction site clearance and removal of vegetation is deemed unavoidable within the bird breeding season an ECoW will undertake a survey to check for breeding birds immediately prior to works. If breeding birds are found to be present the ECoW will establish species-specific Ecological Exclusion Zones around active nests to ensure birds will be protected from disturbance or harm during works.

8.3.2 Mitigations

Mitigation measures recommended include:

- 2m and 5m field drain buffer;
- Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment;
- All excavations to be securely covered, or a suitable means of escape provided (ramp at 450) at the end of each working day to prevent accidental trapping of mammals;
- Security fencing to have a mammal gate at the bottom to allow free movement of mammals through the site;
- Construction works on site are to cease two hours prior to sunset;
- Otter pre-commencement survey prior to construction;
- Pre-construction breeding bird survey (if works are undertaken between March and August); and
- All trees assessed as having potential for roosting bats will be retained, with the exception of T7, T9 and T14 which may require trimming for access tracks. Therefore, it is recommended that a pre-construction PRF-Inspection survey is carried out 24-hours prior to proposed trimming works to check for roosting bats.

8.4 Contaminated Land

8.4.1 Potential Sources

There are a number of ways in which piling can cause contamination risks, however the site would need to be contaminated in the first instance. These possible scenarios include:

- Creation of preferential pathways, through a low permeability layer (an aquitard), to allow potential contamination of an underlying aquifer;
- Creation of preferential pathways, through a low permeability surface layer, to allow upward migration of landfill gas, soil gas or vapours to the surface;
- Direct contact of site workers and others with contaminated soil arisings which have been brought to the surface;

[1] In relation to tree removal, it is only anticipated that a single tree will be removed to facilitate access and provision of an internal track. No individual trees, group of trees or woodlands that are subject to or protected by a Tree Preservation Order are within proximity to the Proposed Development.

- Direct contact of the piles or engineered structures with contaminated soil or leachate causing degradation of pile materials (where the secondary effects are to increase the potential for contaminant migration);
- The driving of solid contaminants down into an aquifer during pile driving; and
- Contamination of groundwater and subsequently surface waters by wet concrete, cement paste or grout.

As the Proposed Development is on a greenfield site consisting only of agricultural land, the potential for effects due to contamination is assessed as low to negligible. Furthermore, the underlying soil and geology that has been outlined in the flood risk assessment, shows no potential for contaminants. With the pollution prevention measures outlined in this assessment, potential effects will be negligible.

8.4.2 Waste Management

There will be limited waste generated during the construction phase of the Proposed Development. The contractor on site during each phase will ensure that all waste will be disposed of responsibly from the site. Potential waste generated during the construction phase is likely to include:

- Wooden crates or cardboard boxes in which the building materials will be packaged. These will be removed from the site and recycled appropriately at regular intervals.
- Packaging materials from various components including cabling, mounting frames screws, etc. These will also be removed regularly and recycled.
- Aggregate and substrate from groundworks – soil will be excavated for the construction of the access tracks, construction slabs, cable trenches, sub stations and inverter and transformer units. All of which is expected to be reused on site. Any additional leftover soil will be disposed of appropriately.
- As the Proposed Development involves a minor amount of groundworks, any topsoil and subsoil extracted will be kept separate on site to ensure contamination does not occur and to avoid damage to soil quality and structure. Any excavated soil which is not re-used or dispersed across the site shall be stored on an impermeable surface at the site compound and covered in order to prevent silt runoff and dust creation. Any spoil storage will be done in accordance with the development buffers specified, i.e. 2m and 5m from field drains and ditches, 10m from the Arterial Drainage Scheme (ADS), etc. Spoil heaps will be deposited as per standard spoil heap ratios.
- Site office waste will be collected separately in order to maximise the potential for recycling.
- Any kitchen waste will be taken off site in refuse containers and disposed of off-site.
- Oils/fuels, paints, solvents or other chemicals.
- Burning of waste on site will be prohibited.

8.5 Noise

BS5228 gives recommendations for basic methods of noise and vibration control relating to construction and open sites where work activities/operations generate significant noise levels, including industry-specific guidance. The construction noise general mitigations which are applicable to the proposed development are detailed below.

8.5.1 Construction Noise General Mitigations

In order to ensure that there is no unacceptable noise impact at the nearest noise sensitive receptors during the construction phase, construction phase noise levels should not exceed the appropriate daytime noise threshold limit specified in BS5228:2009+A1:2014 (i.e. 65 dB daytime). It is assumed that there will be no evening or night-time construction phase activities. British Standard *BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites* outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures will be applied by the contractor where appropriate during the construction phase of the proposed development.

Examples of some of the best practice measures included in BS5228 are listed below:

- ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order;
- careful selection of quiet plant and machinery to undertake the required work where available;
- all major compressors will be 'sound reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use;
- any ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers;
- machines in intermittent use will be shut down in the intervening periods between work;
- ancillary plant such as generators, compressors and pumps will be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines will be placed away from sensitive locations, in order to cause minimum noise disturbance. Where possible, in potentially sensitive areas, acoustic barriers of enclosures will be utilised around noisy plant and equipment.
- Handling of all materials will take place in a manner which minimises noise emissions; and,
- Audible warning systems will be switched to the minimum setting required by the Health & Safety Executive.

In order to minimise the likelihood of complaints, Offaly County Council and affected residents must be kept informed of the works to be carried out and of any proposals for work outside normal hours. A complaints procedure must be operated by the Contractor throughout the construction phase. Best practice will therefore be implemented in order to minimise noise and vibration and comply with the contents and recommendations of the BS 5228 *"Code of Practice for Noise Control on Construction and Open sites".*

8.5.2 Execution of Works

All available techniques should be used to minimise, as far as is appropriate, the level of noise to which receptors in the neighbourhood of site operations will be exposed.

Measures which will be taken include the following.

- Hours of work will be restricted to 07.00 to 19.00 (Monday - Friday) and 08.00 to 16.00 (Saturday)
- Where reasonably practicable, quiet working methods will be employed, including use of the most suitable plant, and economy and speed of operations.
- Haulage vehicles will not arrive at or leave the site between 19:00 and 07:00 hrs.
- Noise will be controlled at source and the spread of noise should be limited (see Section 8.5.3)

8.5.3 Control of Noise at Source

Measures for the control of noise at source are detailed below, in accordance with BS5228-1. These noise control measures will be implemented as appropriate.

8.5.3.1 Reversing Alarms

The use of conventional audible reversing alarms can be a noise nuisance issue on some sites, the reversing alarms used on the proposed site will be of a type which, whilst ensuring that they give proper warning, has a minimum noise impact on persons outside the proposed site. Where practicable, alternative reversing alarm systems will be employed to reduce the impact of noise outside of construction sites.

8.5.3.2 Equipment Selection and Modification

Prior to the construction phase, the contractor will review the specification for all plant and equipment to be employed on-site to ensure that the quietest plant/equipment available is to be used. Modifications to plant and equipment to improve sound reduction will be implemented if required, but any alterations shall be conducted in consultation with the plant manufacturer.

8.5.3.3 Enclosures

As far as reasonably practicable, sources of significant noise will be enclosed. The extent to which this can be done depends on the nature of the machine or process to be enclosed and their ventilation requirements.

8.5.3.4 Silencers

For steady state continuous noise, it may be possible to reduce noise by fitting a more effective silencer system or by an acoustic canopy to replace the normal engine cover, if the item of plant is in a stationary position. On-site generators supplying electricity for electric motors will be suitably enclosed and appropriately located.

8.5.3.5 Damping

Noise caused by resonance of body panels and cover plates will be reduced, where practicable, by stiffening with additional ribs or by increasing the damping effect with a surface coating of special resonance damping material. Rattling noises will be controlled by tightening loose parts and fixing resilient materials between surfaces in contact.

8.5.3.6 Use and Siting of Equipment

Care will be taken to site equipment away from noise sensitive areas. Where possible, loading and unloading will also be carried out away from such areas. Machines will not be left running unnecessarily. Plant from which the noise generated is known to be particularly directional should, wherever practicable, be orientated so that the noise is directed away from noise sensitive areas.

Materials shall be lowered whenever practicable and shall not be dropped. The surfaces on to which the materials are being moved will be covered by resilient material.

8.5.3.7 Maintenance

Regular and effective maintenance by trained personnel is essential and will do much to reduce noise from plant and machinery. Increases in plant noise are often indicative of future mechanical failure.

Noise caused by vibrating machinery having rotating parts can be reduced by attention to proper balancing. Where relevant and practicable, frictional noise from the cutting action of tools and saws

will be reduced if the tools are kept sharp. Noises caused by friction in conveyor rollers, trolleys and other machines will be reduced by proper lubrication where necessary.

8.5.4 Controlling the Spread of Noise

8.5.4.1 Distance

Increasing the distance from noise-sensitive receptors is often the most effective method of controlling noise. Where possible, stationary plant such as compressors and generators will be located away from any noise-sensitive area.

8.5.5 Noise Thresholds

Noise thresholds represent the lowest thresholds (category A) as per the ABC method within BS5228-1. The thresholds corresponding to the relevant category are shown in **Table 8.2**.

Table 8.2: Construction Noise Threshold Values

Assessment category and threshold value period	Threshold value, in decibels (dB)		
(L_{Aeq})	Category A	Category B	Category C [C]
Night-time (23.00−07.00)	45	50	55
Evenings and weekends [D]	55	60	65
Daytime (07.00−19.00) and Saturdays (07.00−13.00)	65	70	75

A significant effect has been deemed to occur if the total L_{Aeq} noise level, including construction, exceeds the threshold level for the relevant category.

8.5.6 Communication

In order to minimise the likelihood of complaints, Offaly County Council and affected residents will be kept informed of the works to be carried out and of any proposals for work outside normal hours.

8.6 Air Quality

8.6.1 Construction Phase

During the construction phase there will be associated air quality and dust impacts that are typical of building developments. In order to avoid significant impacts from dust emissions during the construction phase, a series of mitigation measures are detailed. These are presented below (these mitigation measures form a Dust Management Plan (DMP).

This plan contains mitigation measures and industry standard good practice measures for reducing dust and emissions from vehicles. This is In line with Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction Sites (2024). This plan will be used to ensure that mitigation measures are appropriate and being applied rigorously and to provide early warning of increased dust emissions to inform the cessation or modification of activities prior to impacts occurring. General good practice guidance measures that will be implemented onsite to control dust and vehicle emissions are outlined.

8.6.2 Types of Particles

Dust is the generic term used to describe particulate matter in the size range 1-75 µm in diameter. Particles greater than 75 µm in diameter are termed grit rather than dust. Dusts can contain a wide range of particles of different sizes. The normal fate of suspended (i.e. airborne) dust is deposition.

The rate of deposition depends largely on the size of the particle and its density; together these influence the aerodynamic and gravitational effects that determine the distance it travels and how long it stays suspended in the air before it settles out onto a surface. In addition, some particles may agglomerate to become fewer, larger particles; whilst others react chemically.

The effects of dust are linked to particle size and two main categories are usually considered:

- PM_{10} particles, those up to 10 µm in diameter, remain suspended in the air for long periods and are small enough to be breathed in and so can potentially impact on health; and,
- Dust, generally considered to be particles larger than 10 µm which fall out of the air quite quickly and can soil surfaces (e.g. a car, windowsill, laundry, general amenity).

The IAQM Guidance on the assessment of dust from demolition and construction sets out 350 m as the distance from the site boundary and 50 m from the site traffic route(s) up to 500 m of the entrance, within which there could potentially be nuisance dust (amenity) and PM_{10} effects on human receptors. For sensitive ecological receptors, the corresponding distances are 50 m in both cases.

8.6.3 Potential Impact of Suspended Particulates on Amenity

In terms of disamenity effects, residential dwellings are considered highly sensitive. In some instances, industrial and commercial premises may be considered highly sensitive receptors if they are particularly vulnerable to soiling effects. Dust arising from construction works can reduce amenity in the local community due to visible dust plumes and dust soiling. The generally coarser dust that leads to these effects may, therefore, be referred to as ‘disamenity dust’. The most noticeable air quality impact likely to arise during construction works activities is dust accumulation resulting from deposition, which can lead to disamenity due to the soiling of surfaces.

The UK Government Planning Portal does not define disamenity, but its literal meaning would be “impaired amenity” and from its definition of amenity could be considered to be a negative element or elements that detract from the overall character or enjoyment of an area. The Oxford English Dictionary defines disamenity as “the unpleasant quality or character of something”. For example, in relation to the impacts of landfill projects, DEFRA has described “disamenity” as nuisance caused by an activity such as noise, odour, litter, vermin, visual intrusion and associated perceived discomfort.

8.6.3.1 Limits for nuisance dust

In contrast to suspended particulate matter (PM), there are no UK or European statutory standards that define the point when deposited dust causes annoyance or disamenity. This is largely due to the difficultly in accurately determining human response to dust accumulation and soiling. There are a number of “custom and practice” thresholds in use. These however are based on rather old studies, incorporate large corrections and assumptions, are sometimes equipment-specific, and lack validation in current conditions. More recent guidance for the minerals industry for example, recommends that site-specific thresholds should be agreed between the site operator and the local planning authority, appropriate for both the site and its surroundings, taking into account baseline values.

Similarly, no firm guidance is available on significance criteria for frequency of disamenity dust episodes. Previous guidance suggested that a community may be prepared to tolerate an incident once a month, but not repeated incidents at frequencies of once or twice a week. There is, however, no contemporary evidence base to support this assumption.

8.6.4 IAQM Guidance

The documents referenced in this DMP are as follows:

- **Institute of Air Quality Management (IAQM) Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites;**
- **Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction.**

The type of activities that could cause fugitive dust emissions are: earthworks; handling and disposal of spoil; wind-blown particulate material from stockpiles; handling of loose construction materials; and movement of vehicles, both on and off site. The level and distribution of construction dust emissions will vary according to factors such as the type of dust, duration and location of dust-generating activity, weather conditions and the effectiveness of suppression methods.

The main effect of any dust emissions, if not mitigated, could be annoyance due to soiling of surfaces, particularly windows, cars and laundry. However, it is normally possible, by implementation of proper control, to ensure that dust deposition does not give rise to significant adverse effects, although short-term events may occur (for example, due to technical failure or exceptional weather conditions). The following mitigation measures and recommended best guidance will ensure the risk of dust impacts are controlled during the construction activities proposed as part of the development.

8.6.4.1 Responsibilities

It is the responsibility of the Site Manager or designated deputy to be fully aware of its contents, to provide relevant training to staff and to ensure that procedures are being implemented to achieve compliance with this Plan.

During the hours of operation the site will be supervised by at least one member of staff who is suitably trained and conversant with the requirements of this DMP with respect to:

- Operational controls and visual dust inspection;
- Site maintenance (site inspection checklist);
- Record keeping; and
- Emergency action plans.

The name of the person responsible for the implementation of the DMP will be named in the Final CEMP.

8.6.5 Proposed Mitigation Measures

Emissions from traffic generated by the construction phase of the Proposed Development are not anticipated to create any significant effects. Exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic are unlikely to make a significant impact on local air quality. Construction traffic movements and construction plant emissions are temporary, intermittent (exhaust emissions only when plant or traffic is running) and associated only with the specific construction phase of the Proposed Development. Normal construction techniques conforming to health and safety protocols will be in place to appropriately manage any potential adverse impact to amenity during these phases of development. Mitigation measures for the construction phase for air quality and dust are detailed in the following sections.

The following are general good practice measures that will be implemented onsite to control dust and vehicle emissions. The IAQM guidance outlines a number of mitigation measures for reducing impacts of fugitive dust from construction sites. Adoption of a number of these measures at the project site would reduce dust impacts to both personnel working at the site and off-site receptors. The mitigation measures are broken down in the following sections.

8.6.5.1 Communications

With respect to communications, the following will be implemented:

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary;
- Appropriate training will be provided to all staff to ensure that they are aware of and understand the dust control and other environmental control measures; and,
- Display the head or regional office contact information.

To be implemented before works commence on site and training given as appropriate by the Project Supervisor Construction Stage.

8.6.5.2 Site Management

With respect to site management, the following will be implemented:

- Record any exceptional incidents that cause dust and/or air emissions, either on or offsite, and the action taken to resolve the situation in an environmental logbook;
- Avoid site runoff of water or mud;
- Use covered skips;
- No bonfires and burning of waste materials on site.

To be implemented during works as required by the Project Supervisor Construction Stage.

8.6.5.3 Earthworks

Minimal earthworks are planned as part of the scheme including and where necessary the following will be implemented:

- Minimise drop heights from loading or handling equipment/materials and use fine water sprays on such equipment wherever appropriate;
- Dampening methods will be used where necessary; and,
- Methods and equipment will be in place for immediate clean-up of spillages of dusty or potentially dusty materials.

To be implemented during earthworks by the Project Supervisor Construction Stage.

8.6.5.4 Vehicle Movement and Vehicle Emissions

As with any site, there are associated vehicle movement, emissions and plant use. With respect to vehicle movement and vehicle emissions, the following will be implemented:

- Transportation of graded materials will be conducted in enclosed or sheeted vehicles;
- Ensure all vehicles switch off engines when stationary and not in immediate use - no idling vehicles (emissions to air controlled);
- All plant utilised should be regularly inspected (emissions to air controlled);
- Wheel washing equipment will be available and used on-site, as required to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. Wheel washing will likely be a water bowser and power spray. It will not have any cleaning additives and will drain into the temporary drainage feature at the site compounds.

- Visual monitoring of plant will include Ensuring no black smoke is emitted other than during ignition (emissions to air controlled); and,
- Ensuring exhaust emissions are maintained to comply with the appropriate manufacturers limits (emissions to air controlled).

To be implemented throughout by the Project Supervisor Construction Stage.

8.6.5.5 Complaints Procedure

All complaints received in relation to air quality and dust are during demolition and construction phases of the Proposed Development will be referred to the Project Supervisor Construction Stage.

Contact details of the Project Supervisor Construction Stage foreman will be visible and accessible to nearest surrounding receptors.

All complaints regarding dust emissions will be recorded and reported to the Site Manager, who will investigate the circumstances and ensure that the necessary corrective measures are taken.

Annex A

Visual Inspection Template

Note: This form is designed for general use and may not be exhaustive. Modifications and additions may be necessary to suit individual projects and to address specific environmental issues and associated mitigation measures.

Project :			Site Location :	
Construction Phase :				
Inspection Date :			Time :	
Inspected by :			Weather :	
Inspection Items	Yes	No*	N/A	REMARKS (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
Air Pollution and Dust Control	✓	✗		
1.1. Are stockpiles of dusty materials (size with more than 20 bags cement) covered appropriately?				
1.2. Notable dusty activities taking place?				
1.3. Are all vehicles carrying dusty loads covered over prior to leaving the site?				
1.4. Specifically, are demolition work areas watered? (e.g. trimming activities by using breaker, internal demolitions or cutting of materials being undertaken)				
1.5. Are dusty roads notable outside site footprint?				
1.6. Are dusts controlled during any onsite fabrication or cutting of materials?				
1.7. Are plant and equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)				
1.8. Is dark smoke controlled from any plant?				
1.9. Are there enclosures around the main dust-generating activities?				
1.10. Hoarding/screening provided along boundaries and properly maintained (any damage / opening observed, please indicate the location).				

1.11. Are speed control measures applied? (e.g. speed limit sign)				
1.12. Has site inspection on peripheries of the site been undertaken – any visible dust noted on cars, windows, window sills?*				
1.13. Are any skips on site covered?				
1.14. Are chutes enclosed and in use? Any visible dust from chute?				
1.15. Is site fencing, barriers and scaffolding clean?				
1.16. Others (please specify)				

Any "No" recorded represents the potential breach of mitigation advice and an improvement is potentially needed and details of nonconformity (NC) shall be recorded in the **Remarks column.*

***Sketch of Site visit if required**

Site Operative Signature		Date	
Reviewed by Project Manager (if not undertaken by Project Manager)		Date	

PLEASE KEEP ON FILE

9 Environmental Risk Assessment

An example environmental inspection schedule is set out in **Appendix B**. An example incident report form is set out in **Appendix C**.

10 Emergency Response and Environmental Plan

An emergency response & environmental plan is located in **Appendix G** of this document.

11 Site Waste Management Plan

An example site waste management plan (SWMP) is located in **Appendix D** of this document.

12 Final Comment

The Contractor is required to implement this Outline Construction Environmental Management Plan (oCEMP) to help ensure that construction activities are planned and managed in accordance with the environmental requirements identified within and the relevant guidance and legislation.

This is VERSION 01 of the oCEMP.

Future updates to the oCEMP will be sequential and be saved as such (i.e. VERSION 02, 03 etc.) and shall be adopted on site in full as a CEMP.

Appendices

Appendix A

Proposed Site Plans

Appendix B

Environmental Inspection Schedule

Environmental Inspection Schedule		**Site:**	
Inspected by:		**Date:**	
	Assessment Ratings *0 – Not in place = Non Compliance* *1 – In place but not full Compliance = Non Compliance* *2 – Full Compliance* ***Actions raised from this audit must be closed out within the agreed time scale with Offaly County Council.***	*0/1/2*	
1.0	***Emergency preparedness and incidents response***	*0/1/2*	*Comment*
1.1	*Is environmental response equipment held on-site?*		
1.2	*Where is it located?*		
1.3	*Is it all in working order?*		
1.4	*Can site staff operate the equipment?*		
2.0	***Environmental Incidents***	*0/1/2*	*Comment*
2.1	*Have any incidents been reported?*		
2.2	*Have all such incidents been investigated?*		
2.3	*Have they all been documented?*		
2.4	*Have all relevant parties been made aware of any incident?*		
2.5	*Has the Incident Report Form* ***(Appendix C)*** *been completed ?*		

3.0	***Hazardous Materials Storage***	*0/1/2*	*Comment*
3.1	*Are hazardous materials kept in secure areas?*		
3.2	*Are stores of fuels or oils bunded?*		
3.3	*Has any damage occurred to Mobile Bowsers or tanks?*		
3.4	*Are containers/drums labelled with content and capacity?*		
3.5	*Are drip trays empty of water ?*		
3.6	*Are hoses inside bunds/cabinets ?*		
3.7	*Are spill kits fully stocked and have all staff been trained to use equipment ?*		
3.8	*Has an individual been appointed for the safe handling of fuels ?*		
4.0	***Waste minimisation***	*0/1/2*	*Comment*
4.1	*Are all waste containers covered and labelled?*		
4.2	*Is waste segregated correctly ?* *Do skips need to be emptied ?*		
4.3	*Have waste skips been located on-site?*		
4.4	*Are different waste types segregated for recycling?*		
4.5	*Are staff and contractors encouraged to recycle? Is relevant signage in place*		
4.6	*Has litter been removed from site and the external boundary*		
4.7	*Is all appropriate duty of care documentation in place i.e. waste licence, Carrier's licence all kept on file ?*		

4.8	*Does the external appearance of the site present a positive image of the industry?*		
4.9	*Does the site appear well organised, clean and tidy?*		
4.10	*Does the appearance of all facilities, stored materials, vehicles and plant make a positive impression?*		
5.0	***Water Discharges & Pollution Control***	*0/1/2*	*Comment*
5.1	*Are there any de-watering activities conducted on-site?*		
5.2	*Any visible signs of spillage on site (fuel, oil, lubricants etc)? Including from machinery and plant.*		
5.3	*GPP guidance being followed as stipulated in CEMP/CEMP ?* ***1.Annotated Sketch if appropriate of any spillage and clean up detailed***		

6.0	***Site Boundary & Access***	*0/1/2*	*Comment*
6.1	*Site boundary fencing in place ?* *No visible signs of breaches*		
6.2	*Site signage and information boards in place ?*		
6.3	*Appropriate sign in followed and appropriate health and safety followed ? Hi-vis, boots, hard hat worn for site visit. Appropriate PPE and H&S recommendations for this site in particular.*		
7.0	***Land contamination***		
7.1	*Has any unforeseen historical land contamination been discovered on-site?* *IF yes, please detail.* ***Annotated Sketch if Appropriate***		

7.2	*Has this been managed?* ***Please detail***
8.0	Site Photographs – labelled, detailed and saved on file
8.1	**SITE PHOTOS TO BE TAKEN DURING CONSTRUCTION PHASE (From first commencement of works). These will include; boundary photographs, internal roadways, fuel storage areas, pollution control in place (inc. spill kits), spills, waste storage areas, recycling signs, machinery.**
8.2	*Have site photos been taken of any specific environmental incidents ? If yes please details:*
8.3	*Have site photos been stored on file, labelled and dated ? Please ensure this is completed*
Corrective Action Plan relating to this environmental inspection schedule:	

		Site :	Actionee	Target date (if not immediate)	Close out by Actionee	Issue dealt with ? Y/N
	Count	Proposed Corrective Action				
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
Managers use only		**Follow up Action from Incidents?**		**Closed out by Manger**		
Acknowledged		Signed:		Signed:		

PLEASE KEEP ON FILE with other completed environmental inspections

Appendix B1
Complaints Form

	Complaints Form
	Make the complaints log available to the local authority when asked
1.	Have any complaints been received? If so please detail
2.	The name and contact details of the complainant:
3.	Date and time of the complaint:
4.	Nature of complaint:
5.	Action taken to resolve issues:
6.	Date of complaint handover:
7.	Name of person addressing the complaint: Company: Signature:

Appendix C

Incident Report Form

OCEMP

INCIDENT DATE	INCIDENT TIME	REPORT DATE	REPORT TIME

INCIDENT OWNERSHIP		
DIVISION	SUB-DIVISION	UNIT OR DEPT

DESCRIPTION OF WHAT HAPPENED

EXACT INCIDENT LOCATION			
On or Off Site		**Location**	**Sub-Area**

PERSON INVOLVED

CATEGORY OF PERSON [✓]									
Employee	[ ]	Contractor	[ ]	Visitor	[ ]	Environmental	[ ]	Mem of. Public	[ ]

NATURE OF INVOLVEMENT [✓]					
Witness	[ ]	First Person on Scene	[ ]	Other	[ ]

PERSON'S NAME					
Name:	Mr/Mrs/Miss/Ms	First Name:		Last Name:	

OTHER INFORMATION

Site Manager in attendance (if applicable)	
Reported in Duty Log/Site Book?	Yes [ ] No [ ] N/A [ ]

TYPE OF INCIDENT [✓]					
Breach of Limits/Licence Cond.	[ ]	Oil & Chemical Storage	[ ]	Spillage/Spillage Response	[ ]
Waste Storage & Disposal	[ ]	Serious Public/Other Complaint	[ ]	Water Abstraction/Disposal	[ ]
Third Parties and Supply Chain	[ ]	Smoke, Fumes & Odours	[ ]	Natural Envnment & Wildlife	[ ]
Light Pollution	[ ]	Noise Nuisance	[ ]	Other	[ ]
If "Other" please describe:					

Is this a reportable incident?	Yes [ ] No [ ] Unknown [ ]
If "Yes" which agency	

What are the actual or foreseeable potential consequences known at this time? [✓]					
Prosecution	[ ]	Enforcement Notice (Imp/Proht)	[ ]	Civil Claim	[ ]
Clean-up/Restoration	[ ]	Breach of Licence Requirements	[ ]	Adverse Publicity/Reaction	[ ]
Adverse Customer Reaction	[ ]	Contamination of Water	[ ]	Habitat or Species	[ ]
Health Effects	[ ]				

Please provide any other relevant information

What immediate actions have been taken?

INCIDENT REPORTED BY		
Name	Telephone No.	Date

Appendix D

Site Waste Management Plan (SWMP)

In the course of the Project, it is estimated that the following quantities of C & D Wastes/material surpluses will arise:

C & D Waste Material	**Quantity** (tonnes)
Clay and Stones	To be completed for Final CEMP
Concrete	To be completed for Final CEMP
Masonry	To be completed for Final CEMP
Wood	To be completed for Final CEMP
Packaging	To be completed for Final CEMP
Hazardous Materials	To be completed for Final CEMP
Other Waste Materials	To be completed for Final CEMP
TOTAL Arisings	To be completed for Final CEMP

Proposals for Minimisation, Reuse and Recycling of C & D Waste

a. C & D Waste will arise on the Project mainly from excavation and unavoidable construction waste/material surpluses/damaged materials.

b. The Contractors Purchasing Manager etc. shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

c. Excavated soils will be carefully stored in segregated piles on the site for subsequent re-use/removed from site for direct beneficial use elsewhere.

d. Concrete waste will be recycled where possible or source segregated/collected in receptacles with mixed C & D Waste materials, for subsequent separation and recovery at a remote facility.

e. Masonry and wood will be source segregated/collected in receptacles with mixed C & D Waste materials, for subsequent separation and recovery at a remote facility.

f. Packaging will be source segregated for recycling or return to suppliers.

g. Hazardous wastes will be identified, removed and kept separate from other C & D Waste materials in order to avoid further contamination.

h. Other C & D Waste materials will be collected in receptacles with mixed C & D Waste materials, for subsequent separation and disposal at a remote facility.

Excavation soils and C & D Waste-derived aggregates are considered suitable for certain on-site construction applications. It is proposed that the following quantities, corresponding to all C & D Waste arisings from the project, will be used within the works and beyond the site confines:

Standard form that will be completed by the contractor on-site: Proposals for Beneficial Use/Management of C & D Material Surpluses/Deficits and Waste Arisings on and off the Project

C & D Waste Type	**Clay and Stones** (t)	**Concrete** (t)	**Masonry** (t)	**TOTALS**
Earthworks	To be completed for Final CEMP			
General Fill/Hardcore				
Pipe Bedding				
Selected Trench Backfill				
Fill to Structures				
Beneath Road Structure				
Other Site Use A				
Other Site Use B				
Off-Site Use				
TOTAL				

It is anticipated that waste materials will have to be moved off site. It is the intention to engage specialist waste service Contractors (as required), who will possess the requisite authorisations, for the collection and movement of waste off-site, and to bring the material to a facility which currently holds a Waste Licence/Waste Permit. Accordingly, it will be necessary to arrange the following waste authorisations specifically for the Project:

Specific Waste Authorisations Necessary for the Scheme

Authorisation Type	Specific Need for Project (Yes/No?)
Waste Licence	Yes No
Waste Permit	Yes No
Waste Collection Permit	Yes No
Transfrontier Shipment Notification	Yes No
Movement of Hazardous Waste Form	Yes No

Assignment of Responsibilities

a. The appointed contractor shall be designated as the Responsible Person and have overall responsibility for the implementation of the on-site Waste Management Plan.

b. The Responsible Person will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan.

c. At the operational level, a site manager/foreman from the main contractor and appropriate personnel from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Waste Management Plan are performed on an on-going basis.

Training

a. Copies of the Waste Management Plan will be made available to all personnel on site (as required).

b. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions.

Site Waste Management Plan Checklist

Planning and preparation

- ☐ Have you set aside time to prepare your SWMP?
- ☐ Have you considered the construction methods and materials that you can use to reduce the amount of waste your project produces?
- ☐ Have you thought about ordering materials that have less or reusable/returnable packaging?
- ☐ Have you recorded all of your waste reduction decisions in your plan?

Allocation responsibility

- ☐ Has someone with authority been assigned overall responsibility for the SWMP?
- ☐ Have you included a declaration from the client and Project Supervisor Construction Stage in your SWMP?

Identifying your waste

- ☐ Have you assessed the waste produced at each stage of the project- the types, how much and when, including the processes involved?
- ☐ Have you identified which workers will produce waste?

Managing your waste

- ☐ Has an area of the site been set aside for storing new materials and waste, including separate containers for different types of waste? You must store new materials separately from waste, and make sure storage areas are secure against vandalism.
- ☐ Have you set targets for the different types of waste likely to be produced by the project? Include targets for the amounts of each waste type to be reused, recycled and disposed of.
- ☐ Have measures been put in place to deal with expected and unexpected hazardous waste?
- ☐ Have you considered whether you can reuse materials either on-site or off-site?
- ☐ Have you considered on-site and off-site processing and reuse of materials?

Disposing of your waste

- ☐ Have you considered how you will dispose of liquid wastes such as wash-down water and lubricants?
- ☐ Have you got agreement from your water and sewerage operator for trade effluent discharge?
- ☐ Are you complying with your duty of care, including waste transfer notes or consignment notes for all movements of waste from your site and checking the details of those removing the waste?
- ☐ Has someone been made responsible for checking that loads of waste leaving your site are accurately described, and waste transfer notes and consignment notes completed correctly?
- ☐ Have you checked that every waste carrier you use is registered with your environmental regulator?
- ☐ Have you checked that all sites receiving your waste have the appropriate permits, licences or registered exemptions?
- ☐ Have you identified your nearest waste sites? Use our Waste Directory (http://ww.netregs.org.uk/library_of_topics/waste/waste/_site_directories.aspx).
- ☐ Have you considered how to reduce disposal costs by reusing or recycling waste materials with a commercial value?

Organising materials and waste

- ☐ Have you assessed the quantities of materials you need to order to reduce over-ordering and site waste?
- ☐ Can you return unused materials to the supplier, sell them or use them on another job?
- ☐ Have you considered using recycled materials?
- ☐ Can you return unwanted packaging to the supplier for reuse or recycling?
- ☐ Will you separate different types of waste to enable you to get best value from good waste management practices?
- ☐ Have you labelled containers and skips clearly to avoid confusion? Colour coding you containers could help.

- ☐ Are your storage areas secure and weatherproof to prevent wind and rain damaging your materials?
- ☐ Have you covered or nettled any loose materials to prevent them being spread and possibly causing pollution?
- ☐ Is everyone who will handle waste aware of the SWMP requirements?

Communicating and training

- ☐ Have you planned site inductions and toolbox talks for all site staff?
- ☐ Are contractors and subcontractors trained and aware of their responsibilities?
- ☐ Have contractors and subcontractors understood and agreed the SWMP?
- ☐ Are SWMP requirements built into contracts?
- ☐ Are you carrying out spot checks and monitoring your staff regularly to make sure they are following procedures?

Measuring and monitoring your waste

- ☐ Are you updating your plan every time waste is removed from your site?
- ☐ Are you checking the SWMP regularly and making sure targets are being reached?
- ☐ Are the agreed waste management procedures being checked and monitored regularly?
- ☐ Are you producing regular reports on waste quantities, treatment/disposal routes and costs?
- ☐ When construction is underway, are you making notes of problem and recording them for your next plan?

Appendix E

Construction Method Statement

A Construction Method Statement (CMS) is a key tool for delivering environmental management during the construction phases of a project. It sets out the mechanisms by which the various construction activities would be managed to comply with the relevant environmental legislation and best practice to minimise the impacts and effects on human receptors and environmental receptors. It provides the framework for recording environmental risks and also defines the measures required to mitigate and monitor construction effects, including the mitigation measures set out in the associated supporting environmental documents and assessments. It also outlines provisions for auditing and reporting and sets out action to be taken to resolve any corrective actions arising during the course of construction. The purpose of the CMS is to:

- record environmental risks and identify how they would be managed during the construction period;
- provide a means of identifying environmental commitments, objectives and targets;
- provide a means of monitoring and reporting performance against the objectives and targets;
- provide a framework to ensure that all parties are aware of their responsibilities;
- establish a checklist of control procedures which can then be integrated into an overall environmental management protocol;
- describe how construction activities would be undertaken and managed in accordance with the obligations of environmental legislation and policy, and the requirements of environmental regulatory authorities;
- provide detailed environmental mitigation measures for reducing the potential for environmental impacts during pre-construction and construction; and,
- highlights that some activities may require consents or licences.

Common Working Methods and Pollution Control

The following mitigation will be employed as best practice construction measures:

- EPA's advice on pollution prevention guidance will be followed.
- The period of time that the stockpiles and ground are exposed will be kept to a minimum where possible and ideally the minor earthworks and disturbance shall be reinstated as soon as possible.
- Pollution spill kits will be on site and any soils contaminated with fuel or oil will be removed to a suitable landfill site. All site staff will be trained in the use of spill kits.
- Regular inspections of machinery onsite - Check construction vehicles/machinery leaks and supply spillage contingency kits and adequately maintain vehicles/machinery.
- Any temporary waste generated during construction for welfare facilities (e.g. portaloos) will be removed by a registered waste carrier to a licenced disposal site.

Ensure that all personnel involved in earthworks which could pollute the water environment are aware of their statutory responsibly not to cause water pollution or damage habitats. All such persons should be aware, and should make their employees aware, of the likely causes and consequences of environmental pollution and should be familiar with any control measures and emergency procedures to be deployed.

A suitable buffer between location of any refuelling, storage of oil/fuel, concrete mixing and washing areas and any watercourses or surface drains present on site or adjacent to site is defined. Other important aspects that will be adhered too are:

1. Regular inspections of machinery onsite.

2. Emergency spill procedures in place.
3. A suitable buffer between location for storage of excavated spoil and construction materials and onsite watercourses.

Site Specific - Overview of Proposed Work Activities

An overview of the work activities involved in the proposed development is provided below.

- Site Offices / Staff Welfare Units and Storage Compound to be established – will include security / perimeter (board) fencing.
- Site Clearance
- Topsoil/earth stripping and site levelling / earth moving
- Construction of new landscaped areas
- Foundation trenching
- Topsoil import
- Establishment of foundations for landscape features
- Electricity supply
- Importation of building materials by HGV – anticipated to be blocks / bricks, pipe work, sand, cement, concrete
- Storage of landscape materials – note some materials are likely to be used immediately, with no requirement for onsite storage
- Landscaping and Signage - Planting of site with species noted in landscape plan
- Any site compound will be located in an area well away from sensitive environmental areas.

Note that it will be a key element of all earthworks management to ensure that the risk of pollution to any watercourse is minimised.

At this stage it is not known what plant and machinery would be used for the construction activities involved in the development of this site. The choice of plant and machinery will be made by the appointed contractor, but is likely to include at least the following:

- Excavators
- HGV / dumper trucks / skip lorries
- Pneumatic drills / hammers (handheld)
- Generators
- Works vans and 4WD vehicles

Method statements are widely used in construction as a means of controlling specific health and safety risks that have been identified (usually following the preparation of a risk assessment), such as lifting operations, demolition or dismantling, working at height, installing equipment, the use of plant, and so on.

A method statement helps manage the work and ensures that the necessary precautions have been communicated to those involved. The process of preparing a written method statement provides evidence that:

1. Significant health and safety risks have been identified.
2. The co-operation of workers has been ensured.
3. Safe, coordinated systems of work have been put in place.

4. Workers have been involved in the process.

Method statements are not a definitive requirement, however they are identified by the Health and Safety Authority (HSA) as an effective means of assessing risks, managing risks, collecting workers' views and briefing workers.

The format in which method statements are prepared, reviewed and used should be set out at the outset of a project, perhaps within the **Project Execution Plan (PEP),** ensuring not only that the method statement is produced by a competent person, but that it is peer-reviewed as part of the **quality assurance (QA) system** prior to its use.

This method statements is written by a competent person who is familiar with the process being described and may need to be agreed between the client, Project Supervisor Construction Stage and contractor. The HSA suggests that those preparing method statements should consider:

1. Is there a safer way of doing this task?
2. Will workers actually implement the controls as planned?
3. Do controls make the job difficult or inconvenient?
4. Are there small changes that will improve the intended method?
5. How will controls work in adverse conditions?
6. Will workers require additional briefing or instructions?

The contents of a method statement will vary with the work process being described, however, it may contain:

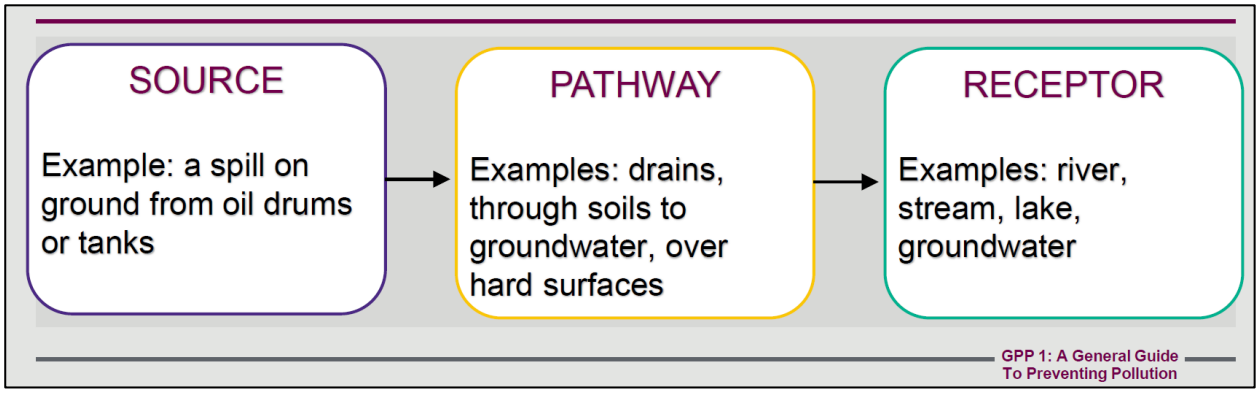
1. Details of the organisation in control of the activity.
2. Details of the individual responsible for the activity.
3. A description of the activity.
4. A description of how the work will be managed.
5. The location of the activity, its boundaries, means of access and how it is segregated from other activities.
6. Plant and equipment required.
7. The procedure for changing the proposed method of work if necessary.
8. A step-by-step description of the activities to be undertaken.
9. Precautions necessary to protect workers, and other people that could be affected, including personal protective equipment and ventilation requirements.
10. Training procedures.
11. The need for specially trained operators for certain activities.
12. Emergency procedures, including the location of emergency equipment.
13. The handling and storage of materials and pollution prevention procedures.
14. Temporary works designs.
15. The method for safeguarding existing structures.

This method statement incorporates those recommendations.

General mitigation and control measures to be employed (as appropriate)

Pollution Prevention

It is important to understand how activities could affect the environment and cause pollution. Pollution linkages and pathway are shown below:



Example of a pollution linkage using the source > pathway > receptor model

The site and activities will only cause a risk to the environment or people if all three parts of the pollutant linkage present i.e. a source, a pathway and a receptor. Any surface water drains go directly to a watercourse and therefore should only carry clean uncontaminated rainwater.

A: Silt Pollution

This CMS recognises - Exposed ground and stockpiles: Planning for intense and also prolonged wet weather is considered in the project and employment of relevant pollution mitigation measures including:

1. minimising the amount of time stripped ground and soil stockpiles are exposed;
2. only removing vegetation from the area that needs to be exposed in the near future;
3. seeding or covering stockpiles;
4. Using geotextile silt fencing at the toe of the slope, to reduce the movement of silt;
5. if applicable, collect run-off in lagoons and allow suspended solids to settle before disposal;
6. divert clean water away from the area of construction work in order to minimise the volume of contaminated water.

This CMS recognises - On-site working: The movement and maintenance of plant on site can generate silt and oil contaminated water, or introduce non-native species from other sites. Sources of silt (e.g. plant and wheel washing, site roads, river crossings) carry a high risk of causing pollution. **Plant and wheel washing** - To reduce the pollution risk, make sure that you consider all relevant measures, including:

1. plant and wheel washing is carried out in a designated area of hard standing at least **10 metres** from any watercourse or surface water drain.

Silt causes lasting damage to river life such as fish, insects and plants and can also build up to cause flooding. Water containing silt should never be pumped or allowed to flow directly into a river, stream or surface water drain. Silty water can arise from dewatering excavations, exposed ground, stockpiles, plant and wheel washing. The mitigation measures set out in this document will help insure siltation episodes are highly unlikely.

B: Disposal of Contaminated Water

Where run off water is contaminated with silt or other pollutants such as oil this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. It is essential to minimise the volume of clean water that becomes contaminated, by diverting clean water

away from working areas. The choice of method for the treatment and disposal of contaminated water will depend on:

- **the volume of water**
- **the area of land available for storage, treatment or discharge**
- **the amount and type of silt**
- **the presence of other substances in the water**
- **the conditions of any consent or authorisation.**

Discharge to sewer during construction - Discharges to foul sewer will require the permission of the local water and sewerage provider.

Tanker off site during construction - If no other disposal routes are available then contaminated water can be collected by tanker for authorised disposal off-site. This may be a costly option and must be discussed with your environmental regulator at the scoping stage of your project. You must comply with your Duty of Care obligations and obtain Waste Transfer Notes for any waste leaving site.

C: Concrete, Cement and Grout

Concrete, cement and grouts are very alkaline and corrosive and can cause serious pollution to water. Concrete, cement and grout mixing and washing areas should:

- **be sited on an impermeable designated area;**
- **be sited at least 10 metres from any watercourse or surface water drain to minimise the risk of run off entering the water environment;**
- **have settlement and re-circulation systems for water reuse, to minimise the risk of pollution and reduce water usage;**
- **have a contained area for washing out and cleaning of concrete batching plant or ready-mix lorries;**
- **collect wash waters that cannot be reused and, where necessary;**
- **discharge to the foul sewer (you must have permission from the local water and sewerage provider for this) or contain wash water for authorised disposal off site.**

D: Oils & Chemicals

Storage Fuel, oil and chemical storage - must be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. Detailed guidelines concerning above ground oil storage tanks are available (GPP2). Leaking or empty drums must be removed from the site immediately and disposed of via a registered waste disposal contractor.

Security - All valves and trigger guns should be protected from vandalism and unauthorised interference and should be turned off and securely locked when not in use. Any tanks or drums should be stored in a secure container or compound, which should be kept locked when not in use. Bowsers should be stored within site security compounds.

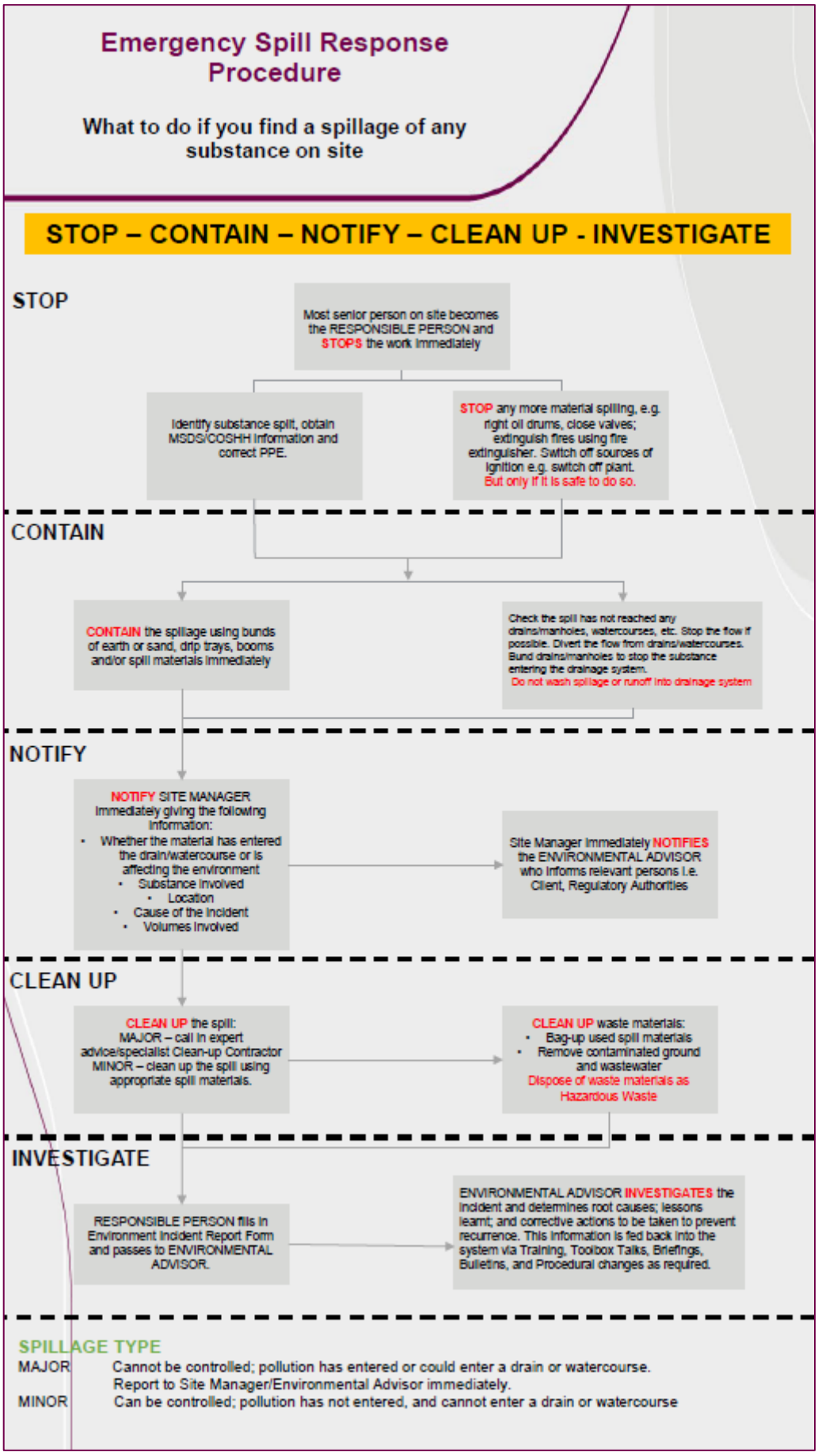
Refuelling - The risk of spilling fuel is at its greatest during refuelling of plant. Where possible, refuel mobile plant in a designated area, preferably on an impermeable surface well away from any drains or watercourses. Keep a spill kit available and use a bunded bowser. Never leave a vehicle unattended during refuelling or jam open a delivery valve. Check hoses and valves regularly for signs of wear and ensure that they are turned off and securely locked when not in use. Diesel pumps and similar equipment should be placed on drip trays to collect minor spillages or leaks. These should be checked regularly, and any accumulated oil removed for appropriate disposal.

INCIDENT RESPONSE - You should immediately report any environmental incidents by calling the EPA on

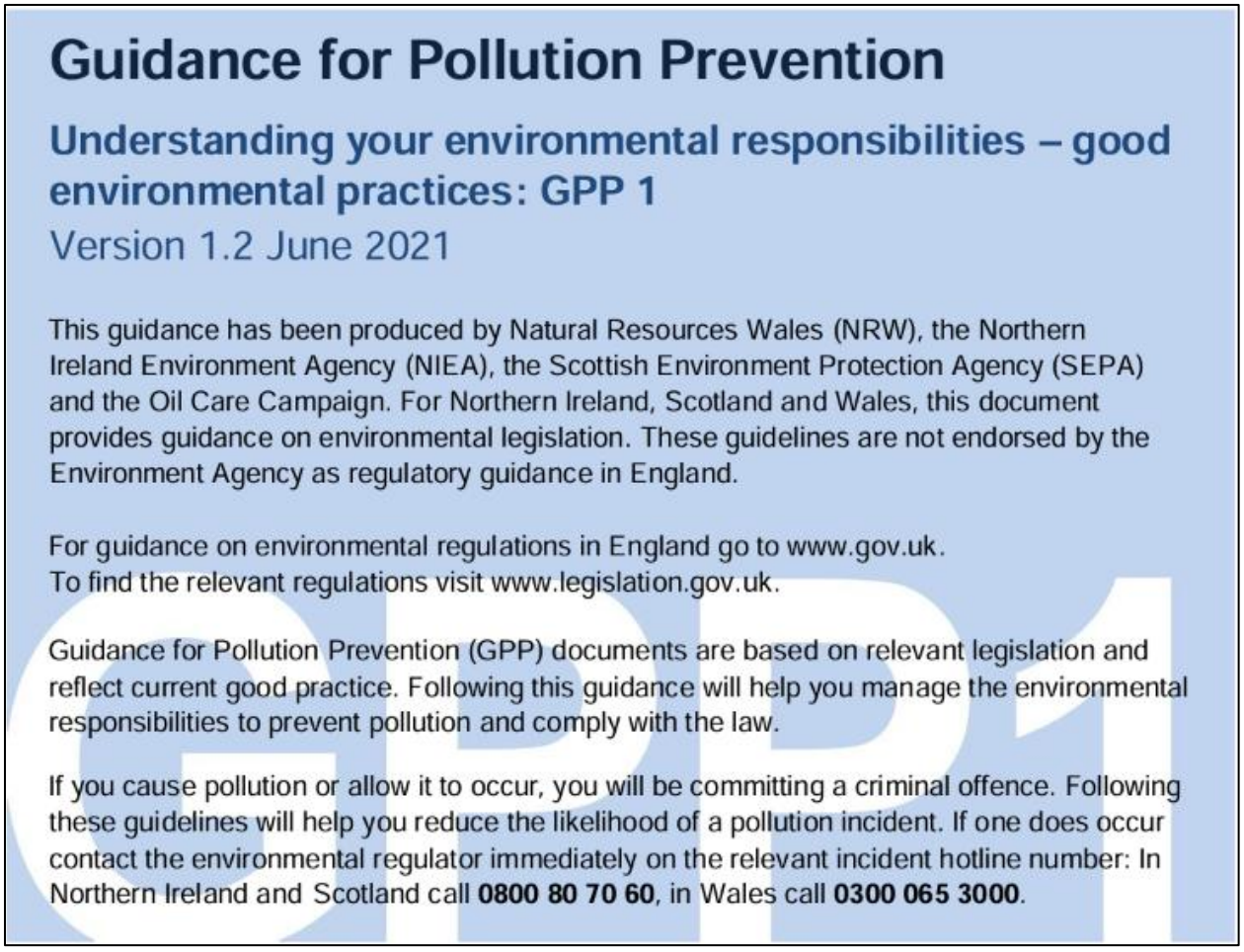
0818 33 55 99

Appendix F

Pollution Prevention Plan


Emergency Spill Response Procedure
What to do if you find a spillage of any substance on site
STOP – CONTAIN – NOTIFY – CLEAN UP - INVESTIGATE
STOP
Most senior person on site becomes the RESPONSIBLE PERSON and STOPS the work immediately
Identify substance spilt, obtain MSDS/COSHH information and correct PPE.
STOP any more material spilling, e.g. right oil drums, close valves; extinguish fires using fire extinguisher. Switch off sources of ignition e.g. switch off plant. But only if it is safe to do so.
CONTAIN
CONTAIN the spillage using bunds of earth or sand, drip trays, booms and/or spill materials immediately
Check the spill has not reached any drains/manholes, watercourses, etc. Stop the flow if possible. Divert the flow from drains/watercourses. Bund drains/manholes to stop the substance entering the drainage system. Do not wash spillage or runoff into drainage system
NOTIFY
NOTIFY SITE MANAGER immediately giving the following information:
Whether the material has entered the drain/watercourse or is affecting the environment
Substance involved
Location
Cause of the incident
Volumes involved
Site Manager immediately NOTIFIES the ENVIRONMENTAL ADVISOR who informs relevant persons i.e. Client, Regulatory Authorities
CLEAN UP
CLEAN UP the spill:
MAJOR – call in expert advice/specialist Clean-up Contractor
MINOR – clean up the spill using appropriate spill materials.
CLEAN UP waste materials:
Bag-up used spill materials
Remove contaminated ground and wastewater
Dispose of waste materials as Hazardous Waste
INVESTIGATE
RESPONSIBLE PERSON fills in Environment Incident Report Form and passes to ENVIRONMENTAL ADVISOR.
ENVIRONMENTAL ADVISOR INVESTIGATES the incident and determines root causes; lessons learnt; and corrective actions to be taken to prevent recurrence. This information is fed back into the system via Training, Toolbox Talks, Briefings, Bulletins, and Procedural changes as required.
SPILLAGE TYPE
MAJOR Cannot be controlled; pollution has entered or could enter a drain or watercourse. Report to Site Manager/Environmental Advisor immediately.
MINOR Can be controlled; pollution has not entered, and cannot enter a drain or watercourse

GPP 1: A general guide to preventing pollution



Guidance for Pollution Prevention

Understanding your environmental responsibilities – good environmental practices: GPP 1

Version 1.2 June 2021

This guidance has been produced by Natural Resources Wales (NRW), the Northern Ireland Environment Agency (NIEA), the Scottish Environment Protection Agency (SEPA) and the Oil Care Campaign. For Northern Ireland, Scotland and Wales, this document provides guidance on environmental legislation. These guidelines are not endorsed by the Environment Agency as regulatory guidance in England.

For guidance on environmental regulations in England go to www.gov.uk.
To find the relevant regulations visit www.legislation.gov.uk.

Guidance for Pollution Prevention (GPP) documents are based on relevant legislation and reflect current good practice. Following this guidance will help you manage the environmental responsibilities to prevent pollution and comply with the law.

If you cause pollution or allow it to occur, you will be committing a criminal offence. Following these guidelines will help you reduce the likelihood of a pollution incident. If one does occur contact the environmental regulator immediately on the relevant incident hotline number: In Northern Ireland and Scotland call **0800 80 70 60**, in Wales call **0300 065 3000**.

Section 1

Legal compliance

The basis of any good environmental performance is compliance with environmental regulations. You must be aware of your environmental responsibilities and make sure that you operate in a completely legal way.

Non-compliance brings the risk of enforcement action, possible fines and real damage to your reputation as a business.

Save money

Good environmental performance includes reducing waste, minimising energy and water use and taking steps to reduce other environmental impacts that your business might have. This creates a leaner and more efficient business with lower costs.

Manage risk

Businesses which manage the risks to their success are often better prepared to deal efficiently with problems when they happen. Managing risks gives you peace of mind and maximises your chances of running a successful business.

Enhance your reputation

Legal compliance and implementing good practice will improve your reputation with customers and your neighbours. Your environmental credentials can help you win contracts; an increasingly relevant part of the tendering process for many sectors.

Why we need to protect our environment

Pollution occurs when substances released to water, land or to air have a harmful effect on our environment. It can affect our drinking water supplies, people's health, business activities, wildlife and habitats, and our enjoyment and use of the environment. You might not see it, but you can pollute it.

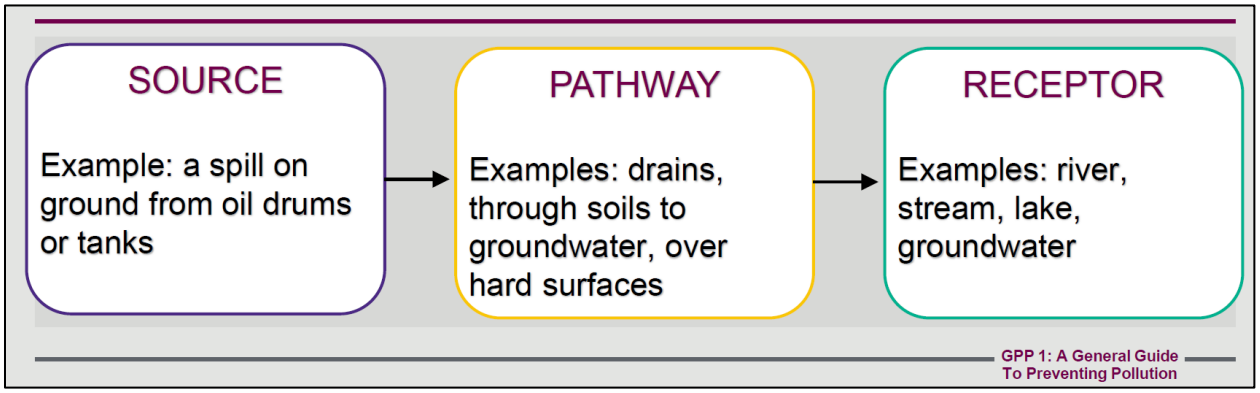
Pollution can happen accidentally or deliberately, and can come from a single place (point source) or from lots of different, possibly unknown and unconnected sources (diffuse sources).

Many different substances can cause pollution – common examples include:

- fuels and oils
- chemicals
- sewage
- farm manure
- slurry
- detergents
- milk
- fire-fighting run-off.

You should understand your premises and how your activities could affect the environment and cause pollution. Think about what pollution linkages you have.

Figure F2 Source, Pathway, Receptor



Your site and activities will only cause harm to the environment or people if you have all of these present: a source, a pathway and a receptor.

You should put in place measures to break the links or weaken the links between potential sources, the pathways and the final receptor.

By doing this, you can identify how to prevent or reduce the likelihood of pollution and reduce the impact of any problems which may occur.

Section 2

Where does “dirty water” come from?

Where does “dirty water” come from?

Almost all premises produce dirty water which could cause pollution if it enters rivers, streams, ditches or groundwater.

Dirty water comes from:

- Kitchens
- Bathrooms
- Toilet and laundry facilities
- Vehicle washing
- Rainwater run-off from dirty areas of your premises
- Rainwater run-off: spills from storage and delivery areas
- Liquid wastes or trade effluents from your business activities.

Many premises also store liquid materials such as chemicals, fuels and oils, milk or fertilisers which can spill, leak or release their contents if there is a fire or flood.

To protect your environment from spills, leaks and other accidents it is very important that you make sure that you know where your drains are, and where they go.

Drains - why are they important?

Drains are common pathways for dirty water to enter the environment and cause pollution. This can happen through wrong connections, spills and leaks, fires and poor or inadequate maintenance.

Your site can have two types of drain: surface water drains, and drains that connect to the sewer.

You must not allow dirty water to enter surface water drains

To reduce the risk of pollution, you should know where your drains are, where they go and correct any problems you may find, such as wrongly-connected pipes.

If you make changes to your premises, such as building an extension or changing activities, you should understand your drainage systems so you can manage these changes safely, cost-effectively and without causing pollution.

If you want to discharge anything other than clean rainwater runoff from your site onto land, or into a watercourse you must contact your environmental regulator (EPA) and get permission. You will probably have to treat any dirty runoff before you can discharge it. Contact details are at the end of this document. If you want to put dirty water into a sewer, you must contact your water and sewerage provider.

Where do your drains go?

All premises should have a drainage plan.

This will show where **surface water drains** are located and where they discharge to any nearby ditches, streams, rivers or other watercourses. This includes storm drains.

It will also show where **drains that connect to the sewer** are located. These can be sewers that remove dirty water only, or combined sewers, which take dirty water and runoff from some surface water drains to the sewage treatment plant.

This information should be available when you need it:

- when you plan activities on your site,
- when you to carry out inspection and maintenance of your drains
- when contractors or visitors need this information.

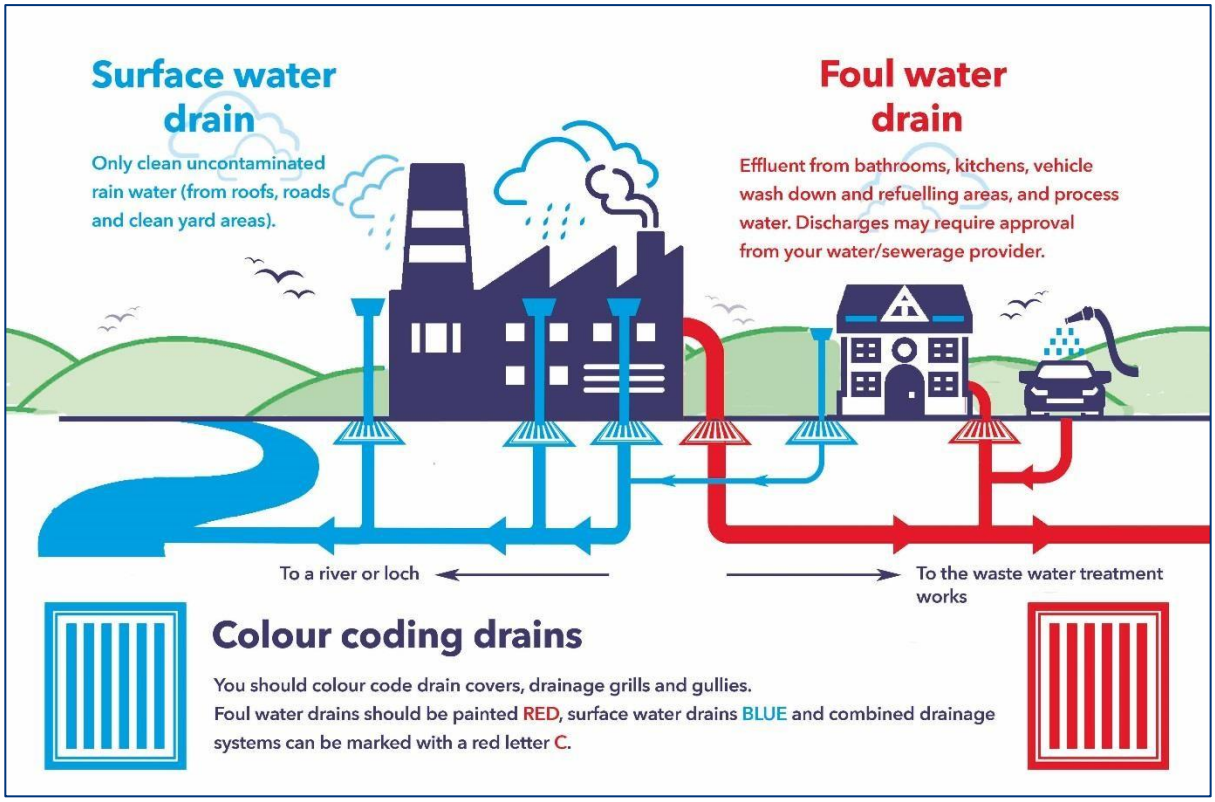
You can get help to work out where your drains are, and where they go, from:

- your sewerage provider
- your landlord
- a drainage consultant.

Produce a clear plan of your site, with all the drains identified, and include the direction of the drain, where it leaves your premises and where it goes. Include any nearby watercourses in your plan.

Colour code manhole covers and drains, **red for drains that lead to the sewer** and **blue for drains that lead to surface water.** This can prevent accidental contamination of the surface water drain.

Figure F3: Surface Water and Foul Water Drainage



On site treatment facilities

You might have treatment facilities on your site, such as septic tanks, package treatment plants or oil separators. Make sure that these are maintained properly as they can be a source of pollution if they are not working correctly.

Manufacturers will provide information on how to maintain these facilities, you should make sure you have this information available so you can correct any problems, or if you need to change your site layout.

SuDS

You might also use Sustainable Drainage Systems (SuDS) to treat lightly contaminated water that runs off your site. Speak to your environmental regulator before installing SuDS. It is important to make sure the system is properly maintained.

sSuDS can treat runoff where there is a possibility that runoff will collect light contamination, for example from car parks, and will trap and help break down these pollutants. SuDs will also reduce the risk of downstream flooding, and can add green space to built-up areas.

SuDS require a certain amount of land, and are not possible on every site. If you are designing new premises then consider SuDS from the outset. If you wash or clean vehicles on site then make sure runoff from this activity does not go into surface water drains. Make sure that you have permission from your sewerage provider if you want to discharge this runoff to the foul sewer.

More information on drainage

All GPPs can be found at: https://www.netregs.org.uk/environmental-topics/pollutionprevention-guidelines-ppgs-and-replacement-series/guidance-for-pollutionprevention-gpps-full-list/

- GPP 13 Vehicle washing and cleaning.
- GPP 3 Use and design of oil separators in surface water systems
- GPP 4 Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water.
- NetRegs SuDS https://www.netregs.org.uk/environmentaltopics/water/sustainable-drainage-systems-suds/

Section 3

You might store a number of different materials at your premises. Even materials that you think of as safe can cause serious damage to the environment.

Think of all the materials that arrive on your premises, including those delivered, collected, stored and handled by staff, and also by visitors or contractors.

Oils and chemicals are obvious sources of potential environmental harm, but other materials such as food and drink products and detergents can cause significant pollution. For example a spill of milk can cause more harm to a watercourse than the same volume of sewage.

Remember, you have already paid for these materials, and if you lose a quantity of them you are losing money. You will then also have clean-up costs. You also want to avoid any health and safety problems which could affect people on your premises or people nearby.

Plan your storage areas.

Make sure that you understand the risks associated with any materials you store on site. Suppliers will provide product information and highlight materials with particular risks associated with their storage or handling.

You must pay the same attention to the storage of waste, waste management companies can advise you about containers and storage areas.

Use your drainage plan to identify the safest places to store materials. Consider when and how you use these materials, and use this to plan your storage areas.

You should avoid storing materials:

- Near to open drains
- On bare ground; always use impermeable surfaces
- Anywhere near to watercourses, soakaways or other sensitive areas
- Anywhere there is a risk of flooding

Choose areas that are:

- Under cover – to prevent rainwater carrying pollutants away
- Bunded to prevent spills spreading
- In a safe place away from vehicles, to prevent collisions.

Leaks and spills can soak into unmade ground where there is a risk of pollution to groundwater. This can affect drinking water, and the clean-up can be a lengthy and expensive task.

Figure F4: Safe Storage, Bunded and Under Cover

Use suitable containers

Use containers that are suitable for the materials stored. Label them clearly and store them in a dedicated area.

Make sure your containers are in good condition by doing regular inspections. Any cracks or leaks can be dealt with before causing an incident.

Some materials must have specific storage, for example all kinds of oils and fuels.

Certain materials must be kept away from other materials to prevent reactions or fire.

Keep your storage areas secure, to prevent accidental damage, theft or vandalism.

You are responsible for clean-up costs even if the damage is caused by vandalism.

Contain leaks and spills

You can’t completely avoid spills and leaks, so put in place measures to reduce their likelihood and severity. You should be able to catch minor spills, leaks or overflows from your containers or stores, and be able to clean them up easily and safely.

Consider installing and maintaining secondary containment, such as a bund wall, or using bunded pallets. It's good practice for your secondary containment to be able to hold more than your tank or container is able to hold, commonly called 110% containment. In some cases this is a legal requirement, such as when storing oils. Secondary containment gives you time to either correct or minimise the problem and to get help.

Figure F5: Bunded Storage Drums and Containers

You should inspect and maintain your secondary containment so it's still effective, such as sealing any cracks or holes, making sure any walls or floors are rendered impermeable, and safely removing any rainwater from the secondary containment. If you store fuels or other liquids

in underground storage tanks (USTs) you must take care when installing these tanks, or when decommissioning or removing them. If not carried out properly, these activities can result in serious pollution of soil, groundwater and nearby water courses.

You and others on your premises should know where to find your spill kits, understand how to use them properly and understand how to store and use materials safely. Label your spill kits and check their contents regularly.

If you have a spill or any pollution incident, report immediately on **0818 33 55 99** (24 hours, 7 days a week) – your environmental regulator can advise you on what to do and can help to inform any other agencies that might be required.

Deliveries

Delivery and handling of materials can be risky, and delivery areas should be managed to prevent incidents.

Have procedures in place for safe deliveries, and make sure all your suppliers understand them. Supervise deliveries to make sure that procedures are followed.

Keep spill kits or appropriate clean-up equipment close to where deliveries are made, and make sure staff and suppliers understand how to use them.

Minimise the handling and movement of materials around your site by planning where deliveries take place. This reduces the risk of spills, and also saves time and money.

More information on storage of materials

All GPPs can be found at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/

GPP 2 Above ground oil storage tanks.

GPP 8 Safe storage and disposal of used oils.

GPP 13 Vehicle washing and cleaning.

GPP 21 Pollution Incident Response Planning.

GPP 22 Dealing with spills.

GPP 26 Safe Storage - drums and intermediate bulk containers.

Section 4

Minimising your waste (Appendix D details a SWMP)

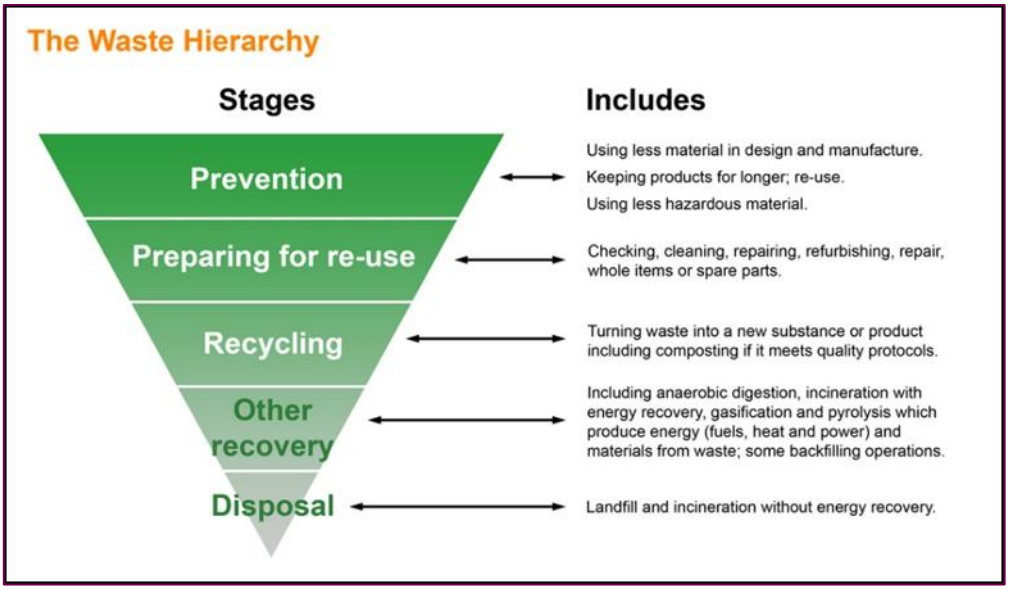
Everything you buy and use on your premises might end up as waste, from food to packaging to off-cuts. Do you know what wastes are you generating at each stage of your activities?

Poorly managed wastes can pollute the environment, for example through illegal dumping or leaking into the ground or watercourses.

You have a responsibility – called **the duty of care** - to ensure you produce, store, transport and dispose of waste without harming the environment. This includes waste you produce directly and indirectly, such as waste produced by a contractor doing work on your behalf.

Wastes which are most hazardous to the environment or human health, such as solvents, asbestos and oils must be managed differently from other wastes. You have a legal duty to understand what types of waste you produce and how you need to manage them.

Figure F6: The Waste Hierarchy



Reduce

There are a number of ways to reduce the amount of waste you produce. This ranges from simple measures such as purchasing goods with less packaging or buying in bulk, not in individual packs, to entirely redesigning your products and processes to eliminate waste.

Reuse

Identify goods or materials that can be reused, perhaps with minimal cleaning and preparation. Design for re-use, e.g. your packaging.

Recycle

Items that can't be re-used can often have the materials they are composed of recycled. Items made of a single material are easier, however you may be able to find a cheap way of removing recyclable parts from more complex items.

Recover

Rather than dispose of materials to landfill, it is sometimes possible to recover some value from them, even if this is just heat from burning them. Energy from waste plants convert the waste into heat and power.

Dispose

The least desirable destination for waste. A last resort if all other options have been tried and have not been feasible.

Storage and handling

Store waste in secure containers. If they contain liquids, make sure they don't leak. Where appropriate keep waste in containers with lids. This will prevent the wind blowing waste around your site and will keep the waste dry. Rainwater could pick up pollutants from the waste and this contaminated water would need to be managed as a waste too. Also, for example, wet cardboard weighs more than dry, and if soaked you could end up paying extra to have this material removed from your site.

Segregate your wastes

All businesses must segregate dry recyclable materials. Paper, cardboard, glass, metals and plastic must be segregated to allow for high quality recycling. Clearly label the containers for different materials, and make your staff aware so the right materials go into the right containers. Identify all the waste materials you produce, then identify those that can be reused or recycled.

Hazardous/special waste

Some types of waste, called 'hazardous wastes', or, in Scotland, 'special wastes', are very harmful to human health or to the environment. You must store, handle and dispose of these differently to non-hazardous wastes.

You must not mix different types of hazardous/special wastes together. Also, if you mix hazardous wastes with non-hazardous wastes then you must consider it all as hazardous/special waste. Consider the security of your premises too - any waste dumped on your property becomes your responsibility to remove, and it will cost you money.

Waste Disposal

You must only use a registered waste carrier to take your waste away. Check your environmental regulators website to find a list of all registered waste carriers. Ask where they will take your waste, and check that waste site is authorised to accept your type of waste. Not all waste management sites can accept all types of waste.

You can transport your own business waste to a site for recovery or disposal, but you will need to register with your environmental regulator. If waste is removed from your site you must complete a Waste Transfer Note, and keep your copy for 2 years. If the waste removed from your site is hazardous/special waste then you must complete a Consignment Note and keep your copy for at least 3 years.

More information on waste management

Check if a waste carrier is licensed:

Registered waste carriers/transporters

https://www.epa.ie/our-services/licensing/waste/

Section 5

Preparation

Take time to consider all areas of your premises or site. Think about where things could go wrong and why. Consider fire, flooding, accidents, vandalism, leaks and spills and how materials and waste are moved around your premises.

Dealing with incidents mean significant disruption to your activities. The better prepared you are the less downtime you will experience. Preparing and incident response plan can save time and effort and will reduce the cost of dealing with an incident. Remember, you are responsible for any contractors working on your behalf, so you must make sure you give them clear work instructions and supervise them appropriately.

Planning and training

The best way for you to cope when problems and emergencies arise is to plan. Well managed premises are less likely to have problems in the first place. You should create and implement an **incident response plan**. You may even have a legal responsibility to make a plan. It should include procedures to deal with problems and emergencies and importantly include a copy of your drainage plan.

Implement plans

Make sure everyone on your premises understands what to do in case of an emergency. Include advice to visitors and contractors. Keep a copy of your plan offsite, so you can always access it. Regularly train staff and review your plans on a regular basis to make sure they are fit for purpose. Make sure the plan is updated if there are changes to your premises, or you change the materials or processes you carry out.

Flooding

You can check whether you are at risk from flooding on the flood maps available from your environmental regulator. You will also be able to sign up for free flood warnings direct to your phone.

Fire

Contact your local Fire and Rescue Service and ask them to visit and give you advice of fire safety and fire prevention. They can help you draw up a fire response plan for your premises.

Spill kits and pollution control equipment

Keep spill kits close to areas where there is a risk of spills, for example near to oil storage areas. Make sure these are maintained and restocked after any incident. Train staff in when and how to use them.

Have pollution control equipment that is appropriate to your site, your activities, and the risks they pose.

If you have an incident

Notify the EPA on

0818 33 55 99

Your environmental regulator can offer advice on what to do and can inform any other agencies that may be required.

More information on dealing with pollution incidents

All GPPs can be found at: https://www.netregs.org.uk/environmental-topics/pollutionprevention-guidelines-ppgs-and-replacement-series/guidance-for-pollutionprevention-gpps-full-list/

GPP 21 Pollution Incident Response Plans GPP 22 Dealing with spills

Flood maps and guidance

Flood Maps Ireland

https://www.floodinfo.ie/about_floodmaps/

Offaly County Council Fire Service

Fire and Rescue contact information

https://www.offaly.ie/c/fire-emergency-management/

Appendix G

Emergency Response & Environmental Plan

The contractor will be responsible for the preparation and implementation of the spillage response procedure. The key issues to consider for the spillage response procedure include:

1. If the main contractor already has a standard spill response procedure in operation then this should be amended to reflect the local conditions on site;

2. It will be important to ensure that the Environmental Manager is notified of all incidents where there has been a breach in agreed environmental management procedures;

3. As a general rule the following principles should apply In the event of an environmental emergency:

    a. If SAFE, stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers. Inform Engineer immediately.

    b. IF SAFE (USE PPE), contain the spill using the absorbent spill material provided. Do not spread or flush away the spill. Cover or bund off any vulnerable areas where appropriate.

    c. If possible, clean up as much as possible using the absorbent spills materials. Do not hose the spillage down or use any detergents.

    d. Contain any used absorbent material so that future contamination is limited.

    e. Notify the Construction Project Manager and environmental officer so that used absorbent material can be disposed of using a specialist contractor.

4. The Construction Manager, in conjunction with the contractor's environmental manager, will develop and test, through exercises, the Emergency Spillage Procedure to ensure that appropriate measures to prevent and mitigate damage due to accidents and spillages are in place.

5. Testing of the Emergency Spillage Procedure shall be recorded on the relevant environmental control form.

6. Inform all personnel about the spill response procedure through toolbox talks and/or induction training. Consider the need for refresher training on long-term construction projects.

7. Use reminder posters, identifying the key essential elements of the spill response procedure, located in appropriate areas such as fuel storage areas, mess cabins, security points or on the back of toilet doors.

8. Example control containment measures for different pollutants are given below:

Control/Containment Measure	Pollutants				
Spill on ground	**Concrete / cement**	**Paints**	**Oils**	**Silt**	**Detergents**
Sand	✓	✓	✓	×	✓
Straw bales	×	×	✓	✓	×
Absorbent granules	×	×	✓	×	×
Geotextile fence	✓	×	×	✓	×
Drip trays	×	✓	✓	×	×
Pads/rolls	×	×	✓	×	×
Drain seal	✓	✓	✓	✓	✓
Earth bunds	✓	✓	✓	✓	✓
Spill in water					
Straw bales	×	×	✓	✓	×
Pads/rolls	×	×	✓	×	×
Booms	×	×	✓	×	×
Stop further spill contain and inform appropriate personnel immediately	✓	✓	✓	✓	✓

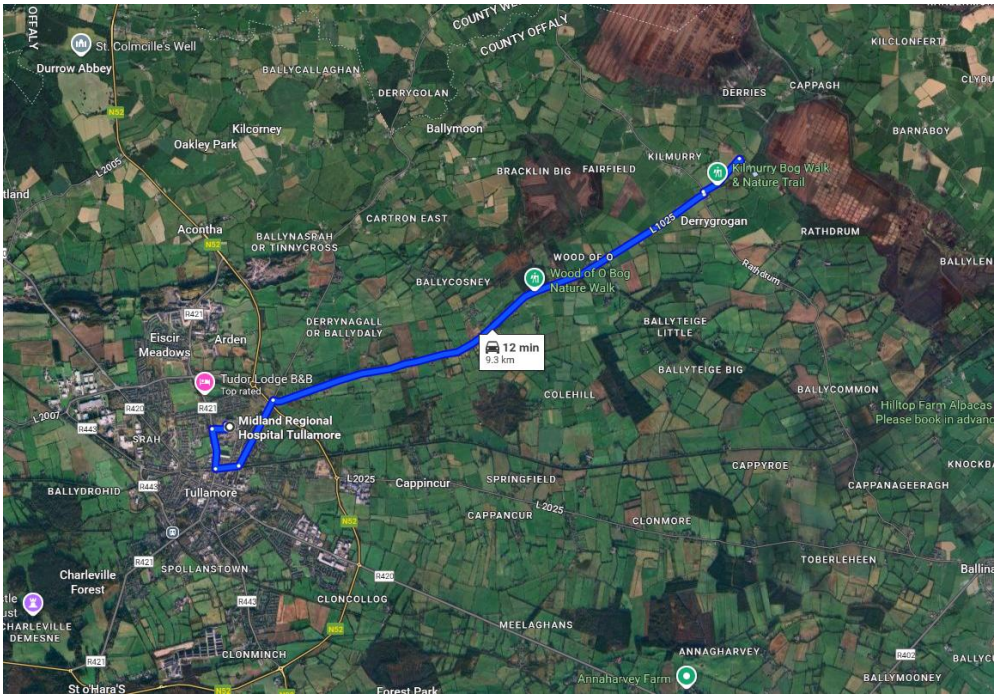
In the event of a significant spill contact the **EPA Low Call Number (0818 33 55 99)**

It will be important to incorporate the names and telephone numbers of others you need to inform (includes alerting people out of hours) and who should contact them within the spillage response plan.

Further issues to be considered when the main contractor is preparing an emergency spill response plan include:

- Details of a professional 24-hour call-out clean-up service e.g.: Alpha Environmental Systems Ltd. Tel +44 (1506) 637340
- Ensure sufficient types and quantities of spill response equipment are available on site. Keep spill kits where spills may occur, e.g. at refuelling points or on plant working near a watercourse.
- Material safety data sheets and COSHH assessments will assist in identifying appropriate spill measures for dealing with hazardous materials.
- Dispose of used spill response material appropriately, e.g. oily granules or pads should be bagged up and placed in the designated waste skip.

EMERGENCY SERVICES & IMPORTANT TELEPHONE NUMBERS

Emergency Contact Details	
Emergency Services	**999**
Nearest hospital – Midland Regional Hospital Tullamore Arden Rd, Puttaghan, Tullamore, Co. Offaly, R35 NY51, Ireland	
EPA Low Call Number	**0818 33 55 99**

Contractor Contacts: (Out of Hours)	
Construction Director	TBC
Construction Manager/Site Manager	TBC
Environmental Manager	TBC

Incident response plan KEY POINTS (From: GPP 21: Pollution Incident Response Plans)

Pollution Incident Response Plan Checklist

Procedure	Included?
Clearly define **when you will activate the plan**. This will depend on the nature of your site and the type of the incident.	
Ensure all relevant staff know how and when to **contact other emergency** responders: emergency services, environmental regulator, local authority, sewage undertaker and others identified in your plan.	
Agree **contact procedures**, if possible, with nearby properties, downstream or downgradient abstractors (from surface water and groundwater), agricultural land or environmentally sensitive sites that could be affected by an incident on your site.	
Put in place **staff evacuation procedures** – your local authority emergency planning department will help you with these.	
Identify any special methods you need to deal with **substances** posing particular health or environmental risk.	
Develop a **firefighting strategy** with your local fire and rescue service; if a controlled burn is an agreed option, state this clearly. The same applies to the use of foam (see **reference 1: Controlled Burn** for further advice).	
Train your staff in **the use of spill kits**, drain blockers and other pollution control equipment and the operation of pollution control devices.	
Identify procedures for recovering spilled product and the safe handling and **legal disposal of any waste** associated with the incident.	
Have staff available who are trained to deal with **media enquiries**.	

From: Guidance for Pollution Prevention Dealing with spills: GPP 22 October 2018 (Version 1)

PRINT OUT AND DISPLAY SIGN (To be located throughout site)

Spill Response Procedure

If the spill cannot be safely contained or if the spill is causing a threat to life, evacuate the area and call **999** from a safe location

IF SAFE TO DO SO

STOP > CONTAIN > NOTIFY > CLEAN-UP

STOP

- Stop work immediately
- Stop the leak or eliminate the source of the spill
- Eliminate ignition sources and provide natural ventilation

CONTAIN

- Use pollution control equipment (e.g. spill kits, drip trays, bunds of earth and sand) to contain the spill
- Check the spill has not reached any drains, water courses or other sensitive areas
- Cover all drains / manholes to prevent the spill from entering the drainage system

NOTIFY

- Once the spill has been contained notify your emergency contact. Details at the bottom of this page

CLEAN-UP

- Attempt to soak up the spill using absorbent material
- Always follow your Duty of Care for waste when disposing of contaminated materials including spill kit / equipment.

EMERGENCY CONTACT DETAILS (Complete with your business details)

Name	Telephone	Nearest Spill Kit

EPA's Pollution Hotline Number

0818 33 55 99