



## **Daer Wind Farm**

### **Pollution Prevention and Incident Plan**

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**RWE Renewables UK Developments**

The RWE logo, consisting of the letters "RWE" in a bold, blue, sans-serif font.

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## Glossary of Terms

<b>Term</b>	<b>Meaning / Definition</b>
CAR	Controlled Activities Regulations
CEMP	Construction Environmental Management Plan
CRF	Clyde River Foundation
CoCP	Code of Construction Practice
DEFRA	Department for Environment, Food and Rural Affairs
DEMP	Decommissioning Environmental Management Plan
DWPA	Drinking Water Protected Area
ECoW	Ecological Clerk of Works
EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Plan
IEMA	Institute of Environmental Management and Assessment
KPI	Key Performance Indicator
MMM	Mitigation Measures Matrix
PCMP	Pollution Control Monitoring Plan
PIP	Pollution Incident Plan
PMO	Planning Monitoring Officer
PPIP	Pollution Prevention and Incident Plan
RAMS	Risk Assessment and Method Statement
SEMP	Site Environmental Management Plan (Operations)
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage
SWMP	Site Waste Management Plan
WRAP	Waste and Resources Action Programme

# 1 INTRODUCTION

## 1.1 Background and Objective

RWE Renewables UK Developments is proposing to develop a wind farm (the Development) in the Lowther Hills of South Lanarkshire and Dumfries and Galloway on land within the Daer Reservoir catchment, approximately 11km south of Elvanfoot in East Ayrshire. Appendix 1 provides details of the site location and proposed layout.

The aim of this Pollution Prevention and Incident Plan (PPIP) is to describe the control measures that will be adopted to protect water resources in the Dear Reservoir catchment, specifically the Scottish Water public water supply and support the mitigation proposals outlined in Chapter 8 (Hydrology, Geology and Hydrogeology) of the Environmental Impact Assessment Report (EIAR).

In developing the PPIP, special consideration has been given to the presence of Daer Reservoir catchment within the footprint of the wind farm development area. Daer Reservoir serves as a public water supply and the catchment is a designated Drinking Water Protected Area (DWPA). Daer Reservoir is the sole water supply source for Daer Water Treatment Works (WTW) that provides potable water to over 200,000 Scottish Water customers in local communities.

Both RWE Renewables UK Developments and Scottish Water have identified protection of water quality as being of paramount importance. A key objective of this Pollution Prevention Plan (PPIP) therefore is to identify and outline best practice measures to be adopted during the construction phase of the Development to prevent pollution of surface and ground waters environments and to protect the water supply interests of Scottish Water.

This PPIP has been developed in consultation with Scottish Water.

## 1.2 Approach

The PPIP is based on and informed by the following three guiding concepts:

1. The principles of prevention;
2. The pollutant linkage concept; and
3. Stakeholder consultation.

These concepts are discussed in the following sections.

### 1.2.1 Principles of Prevention

In the development and implementation of this plan, due regard has and will be given to the principles of prevention, in particular the following cascade:

- a. Avoiding and eliminating risks where practicable;
- b. Evaluation of unavoidable residual risks;
- c. Addressing risks at source (also see sub-section 1.2.2 below);
- d. Adaption of work to the local situation;
- e. Substitution of activities, substances, systems of work for safer options;

- f. Provision of risk mitigation and contingency; and
- g. Provision of training and instruction.

These principles have been used to develop a risk prevention approach to the activities described in section 3 below.

### 1.2.2 Pollutant Linkage Concept

A key risk assessment and management tool that has been used to inform the PPIP is the pollutant linkage concept. Many environmental risk assessments rely on assessing the likely presence and significance of a potential pollutant linkage. The source – pathway – receptor model is traditionally used to conceptualise the risk.

For a risk to exist there must be a hazard **source**, a **receptor** that may be impacted and a **pathway** connecting them; where a source - pathway - receptor relationship exists, a potential pollutant linkage exists. If the source, pathway or receptor is absent, no linkage exists and there is no likelihood or risk of impacting the receptor.

At any given site there may be several potential linkages and a hazard source may pose a risk to one or more receptors by one or more pathways. Similarly, a receptor may be at risk from more than one hazard source. A key risk management technique is to break any potential pollutant linkage.

Risk is often described as the likelihood of harm being realised from a hazard and expressed as a function of likelihood x severity. Another risk management protocol that has been adopted in the formulation of this plan has therefore been to identify and assess measures that would reduce both the likelihood of residual risks occurring and minimising the environmental impact in the event of an incident.

### 1.3 PPIP Status

This PPIP only applies to the construction phase and associated enabling works of the Daer Wind Farm Development within the Daer Reservoir catchment. Subsequent plans will be developed for the operational and decommissioning phases of the Development.

All construction works carried out by RWE Renewables UK Developments and their contractors on the Development site shall be conducted in accordance with this PPIP and approved Risk Assessments and Method Statements (RAMS). Any changes to the construction works which (i) are not included in the RAMS and (ii) may potentially have a materially detrimental impact on water quality will be discussed and agreed with Scottish Water in advance of such amended works being carried out. Any surface water monitoring (as described in section 5 below) shall be pre-agreed with Scottish Water.

If Scottish Water or the Construction Project Manager report that as a result of the construction works a pollution event has occurred that may negatively impact the water quality of Daer Reservoir or compromise the ability of Scottish Water to deliver potable water sourced from the reservoir, then only such part of the construction works to which the pollution event relates shall temporarily cease pending remedy of the situation. In such an event, RWE Renewables UK Developments and appointed Contractors will work with Scottish Water to take such action as may be necessary to remedy the situation in a timely

way. In the event of a dispute, SEPA will be consulted to determine the level of risk to the water supply.

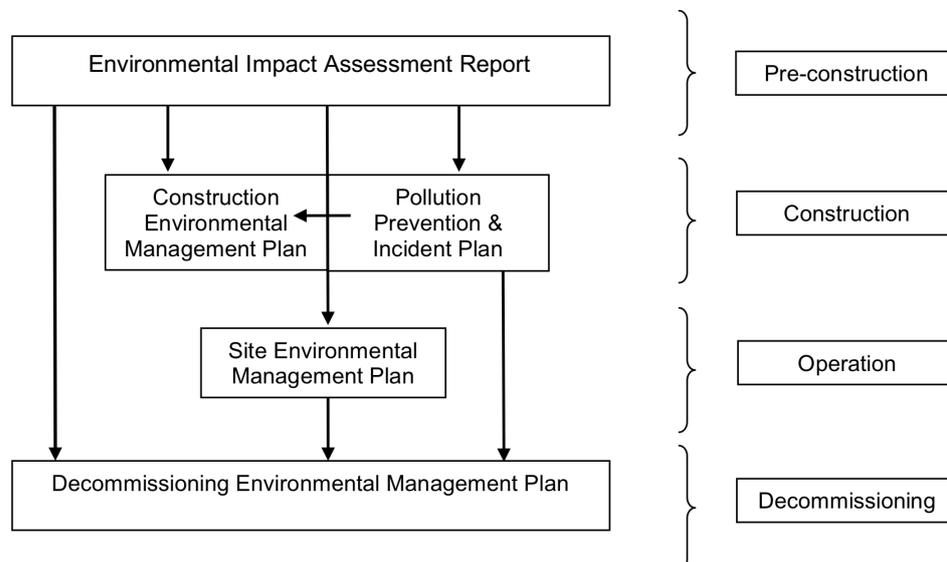
#### 1.4 Structure and Scope of the PPIP

The PPIP comprises three sub-plans:

- **Pollution Prevention Plan;** this describes the controls and mitigation to be adopted in connection with the wind farm construction activities in order to prevent or mitigate potential adverse effects on the quantity and/or quality of surface or groundwaters on the site;
- **Pollution Incident Plan;** this describes arrangements to be followed in the event of a pollution incident and outlines protocols to be adopted in relation to the response, investigation, reporting and clean-up of pollution incidents; and
- **Monitoring Plan;** this describes environmental and pollution control monitoring arrangements to be adopted in relation to surface and groundwaters and in the context of the PPIP.

The scope of this PPIP does not include addressing risks associated with the decommissioning or operational phases of the wind farm; these will be addressed separately in an Operational and Decommissioning Environmental Management Plan for the site in compliance with any Consent conditions.

Relationships between key environmental documents and phases of the wind farm are outlined below in Figure 2.



**Figure 2. Relationship between key environmental management documents and windfarm development phases**

This draft PPIP will be updated following review of Chapter 8 of the EAIR and receipt of consultation comments from the stakeholders. The PPIP will be used to inform the Construction Environmental Management Plan (CEMP).

Chapter 8 of the EIAR identifies predicted construction effects including impacts on surface water quality and flows and also outlines mitigation and enhancement measures. Detailed site specific prevention and mitigation measures will be captured in approved RAMS

generated for the main wind farm activities at the time of construction (section 2.3 below refers).

### **1.5 Limitations**

This PPIP has been drafted with information made available to AA Enviro at the time of preparation to address potential impacts on water quality associated with the construction phase of the Development.

### **1.6 Associated Documents**

- Daer Wind Farm Environmental Impact Assessment Statement.

### **1.7 Site Walkover**

To inform the development of this PPIP, a general site walkover was undertaken on 14 May 2019. A photo-log of proposed water quality monitoring locations is presented in Appendix II.

## 2 MANAGEMENT ARRANGEMENTS

### 2.1 Introduction

This section describes the environmental management arrangements to be adopted in connection with the PPIP and covers roles and responsibilities, work control arrangements, induction, training and competence and coordination and communication.

### 2.2 Roles and Responsibilities

The key roles and responsibilities in relation to environmental management are described in the following sub-sections.

#### 2.2.1 RWE Renewables UK Developments Ltd (the Client)

RWE Renewables UK Developments is ultimately responsible for the effective resourcing of the Development through appropriate instructions and commissions, to ensure the environmental requirements identified in the PPIP are undertaken and for ensuring that construction activities comply with the requirements of the PPIP. RWE Renewables UK Developments may designate appropriate personnel to act on their behalf.

RWE Renewables UK Developments will have responsibility for:

- Overall environmental performance of the Development including management of complaints and non-compliances;
- Ensure that the appointed Contractor has adequately trained and competent personnel and resources to implement their responsibilities under this PPIP and that arrangements are in place to monitor compliance;
- Maintaining regular liaison between all parties on site to ensure adequate precautions are taken to minimise the impact on the environment;
- Ensuring water quality monitoring and site environmental inspections are performed and all issues raised are addressed promptly; and
- Conducting regular site meetings and discussing any water quality and pollution issues arising, ensuring suitable resolution as appropriate.

RWE Renewables UK Developments through their appointed Construction Contractor will promote environmental aims and behaviours through the development and application of “best practice” to ensure that in carrying out the works the environmental controls are maintained. A list of relevant best practice guidance documents is provided in Appendix III.

#### 2.2.2 Construction Contractor (the appointed Contractor)

The appointed Contractor(s) for the works will prepare written Method Statements for all construction works that have the potential to give rise to pollution of surface or ground waters. The Method Statements will be based upon Risk Assessments to prevent pollution and to incorporate environmental mitigation and control measures where required.

The Construction Contractor will appoint a Construction Site Manager who will be responsible for the implementation and maintenance of a Construction Environmental

Management Plan (CEMP) as outlined in section 3.3 below and for issuing Permits to Work following review of RAMS.

The Construction Site Manager or delegate responsibilities will include:

- Ensuring that the CEMP is adequately resourced and delivered;
- Compliance with and ensuring that there are adequately trained and competent personnel with sufficient resources to implement the objectives of this PPIP;
- Considers and assesses all environmental risks and takes steps to prevent or mitigate any incidents during the construction stage of the Development;
- Carries out Risk Assessments and identifies prevention and mitigation controls to be implemented during the construction of the Development as documented in activity Method Statements;
- Acts as the primary point of contact for and has overall day to day responsibility for the management of environmental issues associated with the Development;
- Reviews RAMS documentation prepared by sub-contractors;
- Implements any agreed program of environmental mitigation works;
- Ensuring environmental inductions are carried out for all personnel working on site and that appropriate environmental meetings / tool box talks are held as required with attendance records maintained;
- Establishing pollution incident response arrangements that are adequately resourced and tested;
- Ensuring that all environmental incidents and near misses are reported in line with the agreed escalation procedure and those investigations are carried out where required and that corrective and preventive actions raised are closed out;
- Ensuring environmental inspections and non-compliance monitoring and reporting are undertaken, including for sub-contractor activities; and
- Reporting monthly on-site statistics, key information and KPI's relating to environmental management and pollution control.

### **2.2.3 Ecological Clerk of Works**

An Ecological Clerk of Works (ECoW) will be appointed during the construction phase. The responsibilities of the ECoW will include:

- Reviews site inductions and provides information regarding site environmental aspects;
- Considering and advising on the environmental/ecological impact implications of any micro-siting proposals;
- Assist and advise construction management team members in reviewing Contractors' environmental documentation with particular emphasis on RAMS, CEMP, environmental regulations and requirements and management of environmental risks;
- Carries out regular inspections of the construction site including monitoring of implementation and maintenance of pollution control / mitigation measures;
- Advise the Construction Project Manager and their contractors on compliance with statutory environmental requirements; and
- Attends progress and coordination meetings.

#### **2.2.4 Scottish Water Environment Manager (SWEM)**

RWE Renewables UK Developments will appoint an appropriately experienced and qualified professional to act on behalf of Scottish Water. The SWEM will have responsibility for monitoring compliance with the PPIP during construction. The SWEM shall:

- Monitor and inspect all construction related activities on the site to the extent agreed with Scottish Water to minimise the potential for pollution;
- Review and approve Method Statements and associated Environmental Risk Assessments for all activities with the potential to cause pollution.
- Provide advice in connection with pollution prevention and control;
- Highlight public water supply operational concerns and inform site working practices to mitigate potential impacts on the delivery of Scottish Water public water supply obligations;
- Liaise with the Construction Project Manager, Scottish Water, Ecological Clerk of Works (ECoW), Planning Monitoring Officer (PMO), or any other stakeholder representative as directed by the Construction Project Manager.
- Report to Scottish Water as may be required on a day to day basis and formally on at minimum six weekly basis or as otherwise agreed or required.

#### **2.2.5 Construction Project Staff**

The Construction Project Manager will implement an induction process that will be required to be attended by all Construction staff working on-site, including sub-contractors. This will ensure that each person understands that they have:

- A duty to protect the environment;
- Responsibility for reporting any environmental incidents, near misses or concerns;
- Responsibility for complying with specified systems of work; and
- The required training, qualifications, and where necessary certification, to be employed to carry out specialised environmental tasks.

#### **2.2.6 Construction Project Manager**

The Construction Contractor will appoint a Construction Project Manager who will be responsible for the maintenance of a Construction Environmental Management Plan (CEMP) as outlined in section 3.3 and for issuing Permits to Work following review of Contractor Method Statements and associated environmental Risk Assessments.

### **2.3 Work Control Procedures**

The Construction Project Manager shall ensure that all site works will be undertaken in accordance with an approved Method Statement and associated environmental Risk Assessment as applicable. These will include but not necessarily be limited to:

- Site investigations and survey works;
- Borrow pit operations;
- Establishment of temporary site compounds and lay-down areas;
- Construction or upgrade of access roads;
- Watercourse crossing and installation of culverts and bridges;

- Construction of turbine base foundations and hardstandings;
- Delivery, assembly and erection of turbines;
- Installation of cable tracks;
- Removal of temporary infrastructure and reinstatement;
- Surface water and sediment management;
- Management of waste;
- Wastewater (sewerage and foul waters) management;
- Delivery and storage of fuel, oils and chemicals<sup>1</sup>;
- Refueling<sup>2</sup>; and
- Contingency / emergency response plan.

Method Statements will:

- Describe how the specific task/operation will be carried out;
- Include an environmental Risk Assessment for the task/operation identifying the significant environmental effects relevant to the works;
- Identify the requirement for environmental mitigation and controls or the need for a task/operation specific procedure;
- Incorporate and document the environmental controls into Method Statements, including a list or description of pollution prevention / mitigation controls;
- Provide for control and treatment of any discharges or run-off;
- Provide a map or adequate description illustrating the location of the activity / operation;
- Provide drawings to support the Method Statement where required; and
- Take into account Scottish Water's 'List of Precautions for Watercourses / DWPA's - windfarms' (attached as Appendix IX).

Method Statements and the associated Risk Assessments will be maintained in a Method Statement Register.

## 2.4 Induction, Training and Competence

### 2.4.1 Site Induction

The site induction process provided by the Contactor shall contain information on the range of environmental issues which site personnel are likely to encounter during their work. The environmental component of the site induction will include reference, amongst other things, to:

- the sensitivity of the site, particularly relating to public water supply, fishery interests and the potential presence and implications of any European Protected Species;
- the PPIP and CEMP;
- work control arrangements, including duty to comply with Method Statements and Permit to Work procedures;

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<sup>1</sup> There shall be no bulk storage of fuel, chemicals or hazardous materials within the Daer Reservoir catchment unless agreed by Scottish Water.

<sup>2</sup> No refueling of mobile plant will take place within the Daer Reservoir catchment unless it can be demonstrated, to the satisfaction of Scottish Water, that it would be impracticable for certain vehicles to travel out-with the catchment for refuelling.

- outline requirements of key Method Statements such as storage and handling of fuels;
- key drainage issues on site and the implications of contaminating surface and groundwaters;
- mitigation measures to be implemented; and
- environmental emergency procedures including the pollution incident plan / emergency response plan, with required actions, contacts, and reporting and investigation procedures.

RWE Renewables UK Developments have an evaluation/pre-qualification process, which will ensure that the appointed Construction Contractor has the requisite environmental awareness and competence to undertake the works in what is a sensitive area. This will include evaluation of similar and previous work done and of the competence of individuals whose primary responsibility is for care of the environment on the project.

### 2.4.2 Training

Where it is identified that there is a need for additional environmental awareness training, the Construction Contractor will provide appropriate training for their staff to ensure full awareness of any specialist areas, over and above the requirements of site induction.

The training will include:

- General environmental awareness;
- Environmental emergency preparedness and response; and
- As required training on specific environmental issues.

Registers will be maintained by the relevant consultant or contractor to demonstrate when personnel have been provided with appropriate training and when they require refresher talks or courses.

Basic training on relevant environmental and sustainability topics will be provided by the contractor via toolbox talks to raise awareness of particular issues. Typical environmental TBTs available from CIRIA C692 Environmental Good Practice on Site are listed in Appendix VII. More detailed training requirements will be identified by the Construction Contractor depending on the needs for certain types of works to be undertaken.

## 2.5 Coordination, Communication and Liaison

Environmental meetings will be scheduled and established between the Construction Project Manager (or nominated representative), ECoW, SWEM and any other relevant representative of the project delivery team for the purposes of monitoring progress and documenting actions required to ensure compliance with the PPIP.

The Construction Project Manager will provide monthly (or as otherwise agreed) monitoring and progress reports to the Scottish Water representative.

The progress report will include details on:

- Progress and summary of key issues during the reporting period;
- Observations / comments in relation to inspections and environmental monitoring;

- Details of any significant environmental incidents or near misses resulting from the work, corrective actions taken and organisations notified; and
- Recommended actions to comply with the PPIP where non-compliance or pollution control concerns are identified.

The Project Manager will hold regular liaison meetings, which will be held with representatives of the key stakeholder organisations as required. Key issues covered will include:

- Review of inspection and monitoring reports;
- Environmental mitigation deployed and performance assessment;
- Environmental incidents and significant near misses;
- Specific topics (e.g. surface water discharges);
- Consents and permits (e.g. discharge and abstraction authorisations);
- Community liaison (including complaints); and
- Significant changes to working methods or procedures.

A variety of mechanisms will be used to communicate environmental information as detailed below.

Communication Mechanism	Details
Site Induction	All contractors attending site shall receive a site specific induction that describes the key site risks and how they are managed, the sensitivity of the site (DWPA) and outlines the emergency response procedures.
Site Notice Board	Notice boards will be established which display all relevant environmental information to make personnel aware of any issues or features of significance that they need to be aware of. This will include, but not be limited to, information about pollution prevention, location of spill kits, waste segregation, protected species, nature conservation issues, emergency response and 'good housekeeping' procedures.
Meetings	The Construction team will hold a weekly site meeting that all contractors must attend; the minutes shall be recorded and distributed to all the contractors involved in the works. Monthly management meetings will be held as described above.
Non Conformance Reports (NCRs)	NCRs are an effective way of communicating the findings of audits and inspections. RWE Renewables UK Developments will raise any NCRs applicable to the works and distribute to the relevant contractors.
Toolbox talks (TBTs) and posters	TBTs will be used to update site personnel with regard to any changes to legislation, site procedures or other requirements and refresher training. Posters will be placed on notice boards within on-site office accommodation, or other prominent positions on display to all project staff and visitors.

## 3 POLLUTION PREVENTION PLAN

### 3.1 Introduction

The following generic controls and mitigation measures will be adopted during the construction phase of the project in connection with potential sources of pollution identified in Chapter 8 of the EIAR. The scope covers typical issues associated with pollution control for standard wind farm construction activities and includes:

- Site investigation drilling and excavations;
- Surface water, erosion and sediment run-off management controls;
- Watercourse crossings and culvert installations;
- Construction / establishment of site compound, control building and substation;
- Construction, upgrading and maintenance of roads and tracks;
- Construction of cable tracks, turbine bases, and crane hardstandings;
- Delivery, storage, handling and use of chemicals and oils;
- Use of vehicles, plant and equipment;
- Refuelling;
- Waste management;
- Wastewater management (sewerage and foul waters);
- Borrow pit operations; and
- Concrete batching.

No forestry activities will be undertaken on the DWPA area. Issues in relation to the management of environmental nuisance, such as noise, dust, litter etc, do not fall within the scope of the PPIP but will require to be considered in the CEMP, section 3.3 below refers.

### 3.2 Pollution Prevention Controls and Mitigation Measures

Pollution prevention controls are mitigation measures incorporated into designs, specifications and Method Statements. In common with good practice, RWE Renewables UK Developments in association with the Construction Contractor will adopt the principles of prevention detailed in section 1.2.1.

In selecting mitigation measures, the following factors will be considered:

- What is going to be done, when and by whom and the practicality of the proposals;
- The effectiveness of the proposed measures in addressing the potential impacts;
- The timescales for the mitigation measures to become effective and the durability/longevity of the measures;
- Means of monitoring the effectiveness of the measures;
- Means of maintaining, removing and restoring the mitigation measures; and
- The cost-benefits of the proposed measures.

Generic mitigation measures to avoid adverse environmental effects and to meet regulatory and legislative requirements for the main activities identified in section 3.1 above are summarised in the Mitigation Measures Matrix (MMM), attached as Appendix VI. Specific mitigation measures will be confirmed by the Construction Contractor following a review of on-site proposals and incorporated into site specific Method Statements, which will include

a map, diagram or sketch where appropriate to illustrate potential pollution linkage components.

Methods Statements and associated environmental Risk Assessments for all activities with the potential to cause pollution will be reviewed by the SWEM (ref section 2.2.4).

### **3.3 Construction Environmental Management Plan**

The Contractor will prepare a CEMP prior to construction, taking into account the requirements of the EIAR and the PPIP. On completion of the construction phase, the Contractor will identify and record any residual environmental management issues to be incorporated into the SEMP as part of the project handover documentation. Similarly, the Operator will generate a SEMP for the operational phase of the wind farm, taking into consideration the hand-over issues and the requirements of the EIAR and PPIP.

The CEMP will at minimum record details of site environmental management arrangements, relevant environmental regulations and associated permits or consents, relevant site specific environmental issues and associated mitigation controls, emergency, incident and near miss procedures and monitoring and review arrangements.

## 4 POLLUTION INCIDENT PLAN

### 4.1 Introduction

The main potential for environmental incidents during construction on sites will generally be in relation to fuel/oil/chemical spills and sediment contaminated run-off. To a lesser extent, incidents may also arise from borrow pit activities, concreting activities, waste management failures, particularly in relation to a lack of a “Duty of Care”, incidents relating to sewage effluent disposal, oil water interceptors, incidents relating to protected habitats and species and incidents involving environmental nuisance concerns such as noise, dust, mud, litter and fly-tipping.

### 4.2 Incident Response, Remediation and Monitoring

The Contractor’s Construction Plan will include an Emergency Response Plan (ERP), which will detail management arrangements for any potential environmental emergency. The Contractor shall submit the ERP to the RWE Renewables UK Developments Construction Project Manager for approval and SWER for review. The ERP will include the emergency contact details for Scottish Water.

The Principal Contractor must ensure the ERP requirements are communicated to all staff on site.

The ERP will incorporate incident response procedures detailing what to do in the event of a pollution incident with associated investigation and reporting requirements. The procedures will include provision for the following incident components:

- Environmental incident response, remediation and monitoring; and
- Environmental incident reporting and investigation.

Whilst the Principal Contractor will align procedures to their management systems, minimum procedural requirements for each of these incident components are described below.

#### 4.2.1 Response Actions

In the event of an environmental incident the following action will be taken:

##### **Stop the hazard at source**

If safe to do so, actions will be taken to stop the source of the discharge / spill / leak, isolate the hazard area and cordon off to stop others from entering the area.

##### **Contain the hazard and break pollutant linkage pathways**

Routes to drains, gullies, ditches, etc will be blocked and the discharge / spill / leak will be prevented from migrating into watercourses (e.g. for oil spills booms and absorbents or other appropriate materials will be used) or cut-off ditches and collection sumps will be created. Containment for plant and equipment will be provided to prevent spill / leak migrating into the ground.

##### **Notify stakeholders**

At the first available opportunity, the Contractor Site Manager and ECoW will be contacted who will then determine the immediate response requirements and contact relevant stakeholders. A list of emergency / incident response contact numbers (including Scottish

Water emergency numbers) will be itemised in the CEMP and be available on-site notice boards. The list will be periodically reviewed and updated.

The following information will be provided when notifying environmental incidents:

- Name and contact details;
- Location (eg turbine number);
- Nature of incident and source and type of hazard if known;
- Volume (if appropriate);
- Immediate hazards or dangers;
- Status and safety of plant; and
- Potential pathway or route of spill migration and sensitive receptors.

Once the extent of the spill, the immediate safety hazards and the environmental implications have been established the Construction Manager and ECoW will assess the situation and decide whether the incident can be managed using internal resources or if a Specialist Contractor equipped to deal with major / specialist environmental incidents should be mobilised to the site.

#### **Clean-up and remediation**

Clean-up and remediation of contaminated surfaces by trained personnel will commence after successfully stopping the spill/leakage at source and containing the substance into a manageable or isolated area.

- As far as practicable, all solid surfaces will be cleaned with appropriate absorbent material until all reasonable traces of substance are removed. Where this is not possible/practical the area will be isolated, if necessary treated and monitored as required until the contaminant has degraded.
- Any oil present on water will be removed as far as practicable, such as by the use of absorbent booms, pads, wood chips or other appropriate absorbent material. Containment and absorbent booms and pads may need to be maintained, monitored and periodically replaced until the oil has degraded.
- Contaminated material will be removed immediately and temporarily placed in designated storage facilities for subsequent removal by approved waste management contractors and in compliance with regulatory consignment and duty of care requirements.

#### **Monitoring**

Spill / leakage sites will be monitored regularly, initially on a daily basis until the site has stabilised. Depending upon the nature of the site location and incident, spill materials may require to be replaced. Once the spilled material has been cleaned as far as reasonably practical and there is no longer a significant risk to receptors, residual spill response materials will be removed. Contaminated spill materials will be handled as described above.

A summary indicative spill response flow chart is illustrated in Appendix IV.

### **4.3 Incident Reporting and Investigation**

All environmental incidents will be investigated to establish where possible the underlying root cause of the incident. A list of indicative incident categories has been provided in Appendix V. Measures to remedy and prevent a recurrence will be identified by the incident owner, with target dates and responsibilities for any close out actions documented.

All environmental incident reports will be signed off by the ECoW, prior to distribution to the Construction Project Manager and other relevant personnel if required. Details of all incident reports will be maintained in a register. The incident register will be periodically reviewed by the ECoW to establish if there are any patterns or trends to reported environmental incidents. Where patterns or trends are identified, action will be taken to prevent further similar incidents.

Lessons learned from the review of near miss and incident reports will be communicated by means such as TBT's, notices or meeting discussion items and all appropriate method statements will be updated accordingly.

### **4.4 Incident Response Training and Testing**

All personnel working on site will receive basic spill response training as part of the site induction. Personnel with responsibilities dealing with environmental incidents and for handling hazardous liquids with the potential to cause pollution (such as fuelling operations, oil change maintenance operations) will have received specialist spill response training. Records of spill response training shall be documented and maintained and available for inspection. A list of indicative Toolbox Talks that will be provided is detailed in Appendix VII.

The ECoW will be responsible for periodic testing of emergency procedures, including spill response. Records of emergency response training will be documented and retained on site for review.

### **4.5 Contingency**

#### **4.5.1 Spill kits**

Spill kits / spill response materials will be available within all site vehicles, at the site control compound / building and at designated locations throughout the wind farm where oils, fuels or potential polluting chemicals are located, stored or used near sensitive receptors. The location of spill kits will be marked on the site location plan attached to the CEMP.

Contents of vehicle spill kits as a minimum will contain absorbent pads, putty, protective gloves and absorbent socks. These kits will be used as first response or for the containment and clean-up of small spills.

Site based spill kits will be used to stop, contain and clean-up spills and will contain the following materials: suitable PPE, absorbent pads, socks, boom and cushions, sealant putty slab or mats. Submersible skirt containment booms will also be held within the site compound store.

Any contaminated spill material will be quarantined and disposed of in accordance with the CEMP and spill kit material replaced immediately from stock retained on site. Following an

incident the Construction Manager or delegate will assess quantities of remaining spill response materials to ensure the site retains adequate stocks.

When the Contractor mobilises to site, the Project Manager will ensure that contingency containment booms and silt fences or other identified mitigation will be positioned below working areas prior to work starting to act as contingency protection for Daer Reservoir.

#### 4.5.2 Specialist contractor(s)

The Contractor will have a contingency plan involving the procurement of the services of a specialist oil/fuel pollution clean-up contractor to deal with major incidents and those which site personnel are not able to deal with. The specialist contractor performing this service will be made familiar with the logistics of the site through the induction process and site visit and be available to respond on a 24 hour / 365 day basis. Contact details for the specialist contractor will be detailed in the CEMP emergency response plan.

#### 4.5.3 Scottish Water Emergency Planning

In the event that an incident occurs that has the potential to impact the water quality of Daer Reservoir, the Contractor must notify Scottish Water immediately. The Contractor will be made aware of The Scottish Water Emergency Planning (Operational Incident Reporting Procedure) requirements, which specify the notification process for an operational incident.

Scottish Water staff contacted will be responsible for escalating the incident within Scottish Water, via the 24/7 Business Alert System; this will ensure activation of Scottish Water emergency procedures and co-ordination of response.

In accordance with the Scottish Water incident notification process, attempt will be made to contact at least one of the Scottish Water contacts as detailed in the table below.

Asset Type Affected	Sequence	Scottish Water Contact
<b>Water Supply Assets</b>  (e.g. Water Treatment Works)	1st	SW contact agreed at work pre-planning stage and/or at site set-up (details added to SHOUT poster)
	2nd	Water Operations Area Team Leader
	3rd	Water Operations Area Team Manager
	4th	Water Operations Area Manager

In the event that a Scottish Water contact cannot be reached, the Scottish Water Contact Centre number will be used.

Scottish Water SHOUT posters (as detailed in Appendix VIII) will be populated, communicated to site personnel and displayed on site.

## 5 MONITORING PLAN

### 5.1 Introduction

This section describes the pollution control monitoring protocols that will be adopted including the sampling and inspection of site watercourses and issues to be covered during routine surveillance inspections.

### 5.2 Surveillance inspections and site audits

Surveillance inspections and site audits will be undertaken on a regular and routine basis. The Construction Manager or delegate and ECoW will be responsible for undertaking and documenting site surveillance inspections and audits. Issues that will be covered include:

- Watercourses below working areas;
- Mitigation and pollution control measures;
- Surface water and sediment run-off;
- Hazardous materials (oil, fuels, chemicals etc);
- Waste;
- Wastewater (foul drainage);
- Management controls (inductions etc);
- Compliance assessments (PPIP, Method Statement's, Consents etc);
- Emergency response, incidents and complaints; and
- Environmental nuisance (litter, fly-tipping, noise, dust, mud, odour).

During the construction phase, daily visual inspections will be undertaken of watercourses and environmental mitigation controls below working areas by the Contractor, which will be supplemented by inspections undertaken by the ECoW or other designated personnel. Records of inspections will be retained and made available to Scottish Water on request.

### 5.3 Water quality monitoring

RWE Renewables UK Developments will undertake to commission a water quality sampling programme which will involve the collection and analysis of 12 baseline water samples prior to site works commencing (collected on a monthly basis over 12 months to capture seasonal variations), during construction and for 12 months following commissioning and handover. Following 12 months post construction monitoring, the results will be reviewed to establish if monitoring should continue. Thereafter, monitoring will be reviewed on a six monthly basis (if required) up to a maximum of two years post construction.

Extractive water samples will be collected on a monthly basis from the monitoring locations described in sub-section 5.5 below and shown on Figure 1 (Appendix I).

As a minimum, the analysis will include:

- pH;
- Conductivity;
- Alkalinity
- Colour;
- Total Organic Carbon;

- Turbidity;
- Suspended Solids;
- Manganese (total and soluble);
- Iron;
- Aluminium; and
- Total Petroleum Hydrocarbons.

A summary pro-forma checklist will be used to record information such as prevailing weather and flow conditions and any pertinent unusual observations. Samples will be collected, stored and delivered to an approved laboratory for analysis in accordance with good practice. Subject to site assessment confirming suitable monitoring locations, in-situ semi-continuous water quality monitoring sondes will be deployed in the Black Burn and Crook Burn during the construction phase to monitor for pH, electrical conductivity and turbidity.

Where water quality concerns are identified by Scottish Water, additional (more frequent) samples at these and other locations within the supply catchment may need to be collected and the analytical suite listed above may require to be expanded to include additional parameters. If particular activities warrant more intensive monitoring, RWE Renewables UK Developments will commit to undertake additional monitoring, the scope of which will be agreed on a case by case basis.

RWE Renewables UK Developments will provide Scottish Water with the results of the monitoring on a monthly basis.

#### 5.4 Monitoring locations

Indicative monitoring locations for water quality samples, macro-invertebrate and electro-fishing surveys have been identified and will be validated following site reconnaissance to confirm suitability in terms of safe access, habitat quality and proximity to key wind farm development activities.

Indicative monitoring locations are listed below in Table 5.1. A control watercourse (Sweetshaw Burn, Plate 1, Appendix II), adjacent to, but which will not be impacted by the wind farm development, will be monitored as a control location.

Table 5.1 Indicative water quality monitoring locations

Name of Watercourse	National Grid Reference (indicative)
1. Sweetshaw Burn downstream of access track (Plate 1) (Control)	NGR NS 9853 0896
2. Tributary of Daer Reservoir downstream of access track (Plate 2)	NGR NS 9877 0825
3. Shiel Burn at Black Burn confluence (Plate 8)	NGR NS 9873 0760
4. Black Burn upstream Shiel Burn confluence (Plate 7)	NGR NS 9871 0761
5. Crook Burn at Daer Reservoir (Plate 9)	NGR NS 9714 0632

## Appendix I

**Figure 1. Site plan with indicative monitoring locations**  
(Reproduced by kind permission of RWE)

**Project:**  
**Daer Wind Farm, South Lanarkshire/Dumfries & Galloway**

**Title: Figure 1. Indicative Site Layout with Shiel Burn Crossing**

- Key**
- Proposed water quality monitoring point
  - Site boundary
  - Proposed turbine \*
  - Proposed permanent anemometry mast
  - Proposed crane hardstanding
  - Proposed permanent track
  - Proposed temporary track
  - Proposed access from public road
  - Proposed indicative areas of cut/fill earthworks
  - Proposed temporary construction compound
  - Proposed substation, control building, energy storage & compound
  - Proposed borrow pit search area
  - Shiel Burn watercourse crossing

Turbine	Easting	Northing
1	299455	602522
2	300111	607970
3	299851	607249
4	299329	606646
5	298901	607099
6	299494	605398
7	298138	607604
8	297970	607086
9	298166	606462
10	298185	605981
11	298439	605196
12	298639	604642
13	298505	604105
14	298618	603575
15	298729	603082
16	297818	603681
17	297325	604275

\* Maximum turbine dimensions - HH: 102.5, RD: 185, TH: 180.  
 Candidate turbine model - SG 155 6.6 MW.  
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Scale @ A3: 1:50,000

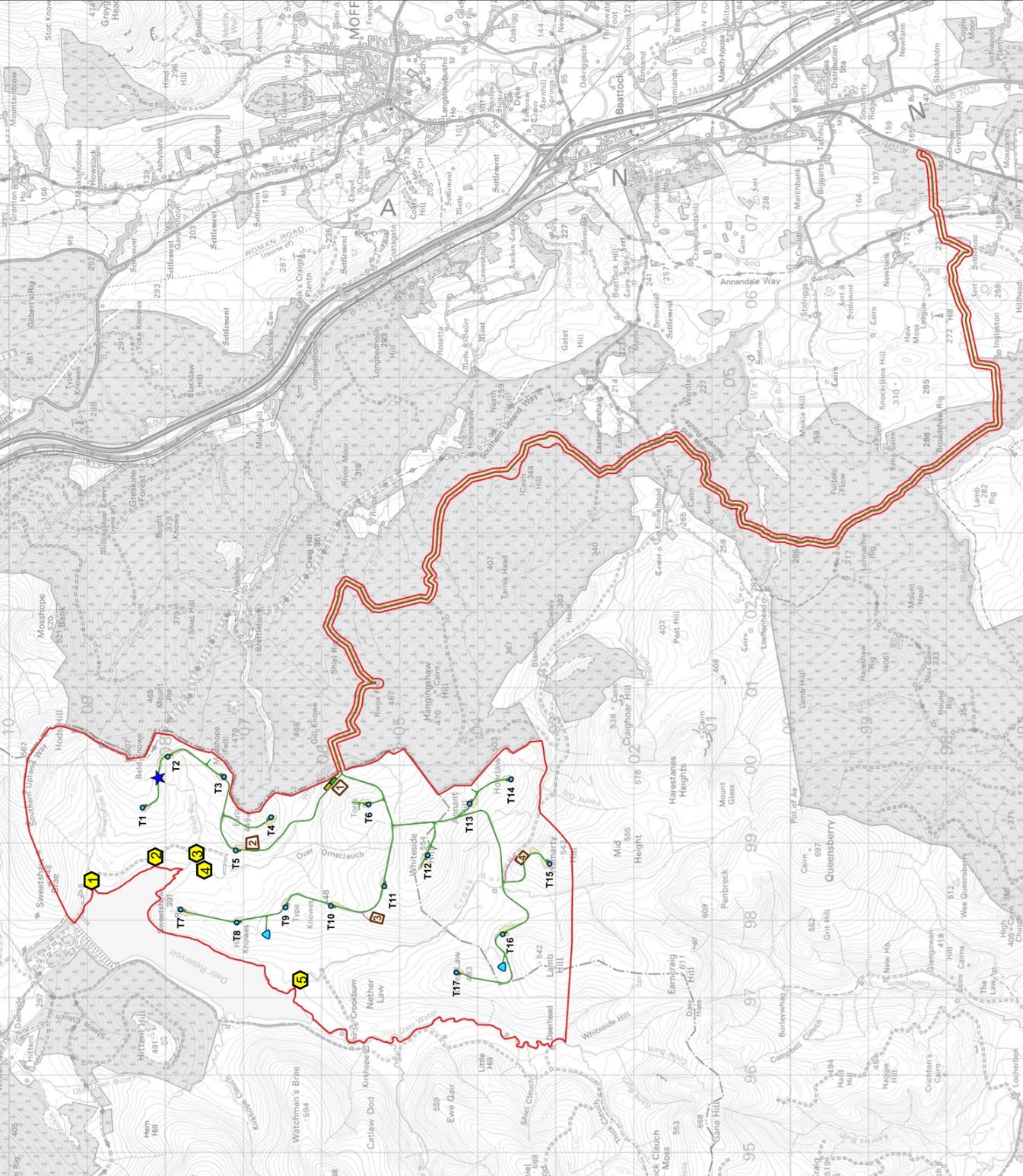
Coordinate System: British National Grid



Date: 08-10-20 Prepared by: DH Checked by: KL

Ref: GB200492\_M\_154\_A Layout: 070720\_171\_A

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## Appendix II

### Site walk-over photo-log



Plate 1. Sweetshaw Burn downstream of access track



Plate 2. Tributary of Daer Reservoir downstream of access track

<b>Daer Reservoir Wind Farm PPIP</b>			
<b>Site:</b>	Daer Reservoir	<b>Date:</b>	14.05.2019
<b>Project No:</b>	AAe128C	<b>Ref:</b>	Appendix II



Plate 3. View from north-western Met Mast to Daer Reservoir (Shiel Burn catchment)



Plate 4. Confluence of White Burn and Over Ormscleuch

<b>Daer Reservoir Wind Farm PPIP</b>			
<b>Site:</b>	Daer Reservoir	<b>Date:</b>	14.05.2019
<b>Project No:</b>	AAe128C	<b>Ref:</b>	Appendix II



Plate 5. View from Whiteside Hill to Daer Reservoir (Crook Burn catchment)



Plate 6. View from south-eastern Met Mast to Daer Reservoir and Sweetshaw Rig

<b>Daer Reservoir Wind Farm PPIP</b>			
<b>Site:</b>	Daer Reservoir	<b>Date:</b>	14.05.2019
<b>Project No:</b>	AAe128C	<b>Ref:</b>	Appendix II



Plate 7. Black Burn upstream Shiel Burn confluence



Plate 8. Shiel Burn at Black Burn confluence

<b>Daer Reservoir Wind Farm PPIP</b>			
<b>Site:</b>	Daer Reservoir	<b>Date:</b>	14.05.2019
<b>Project No:</b>	AAe128C	<b>Ref:</b>	Appendix II



Plate 9. Crook Burn at Daer Reservoir



Plate 10. View to Crook Burn and The Knows from western side of Daer Reservoir

<b>Daer Reservoir Wind Farm PPIP</b>			
<b>Site:</b>	Daer Reservoir	<b>Date:</b>	14.05.2019
<b>Project No:</b>	AAe128C	<b>Ref:</b>	Appendix II

## Appendix III

### List of Guidance Documents

#### General

- SEPA/SNH/Scottish Renewables/Forestry Commission Scotland, Good practice during wind farm construction
- GPP 1 Understanding your environmental responsibilities – good environmental practices
- PPG 6 Working at construction and demolition sites
- GPP 13 Vehicle washing and cleaning
- Scottish Renewables/SEPA (2012) Developments on Peatland: Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste
- Scottish Natural Heritage (SNH)/ Forestry Commission Scotland (FCS) (2010) Floating Roads on Peat
- SNH/SEPA (2011) Developments on Peatland: Site Surveys and Best Practice
- SEPA, (2010) Regulatory Position Statement – Developments on Peat.

#### Water Pollution

- GPP 5 Works and maintenance in or near water
- CIRIA C532 Control of water pollution from construction sites – guidance for consultants and contractors
- CIRIA C648 Control of water pollution from linear construction projects
- WAT-SG-32 SEPA Guidance on the special requirement for civil engineering contracts
- PPG 3 Use and design of oil separators in surface water drainage systems

#### Oils and Fuels

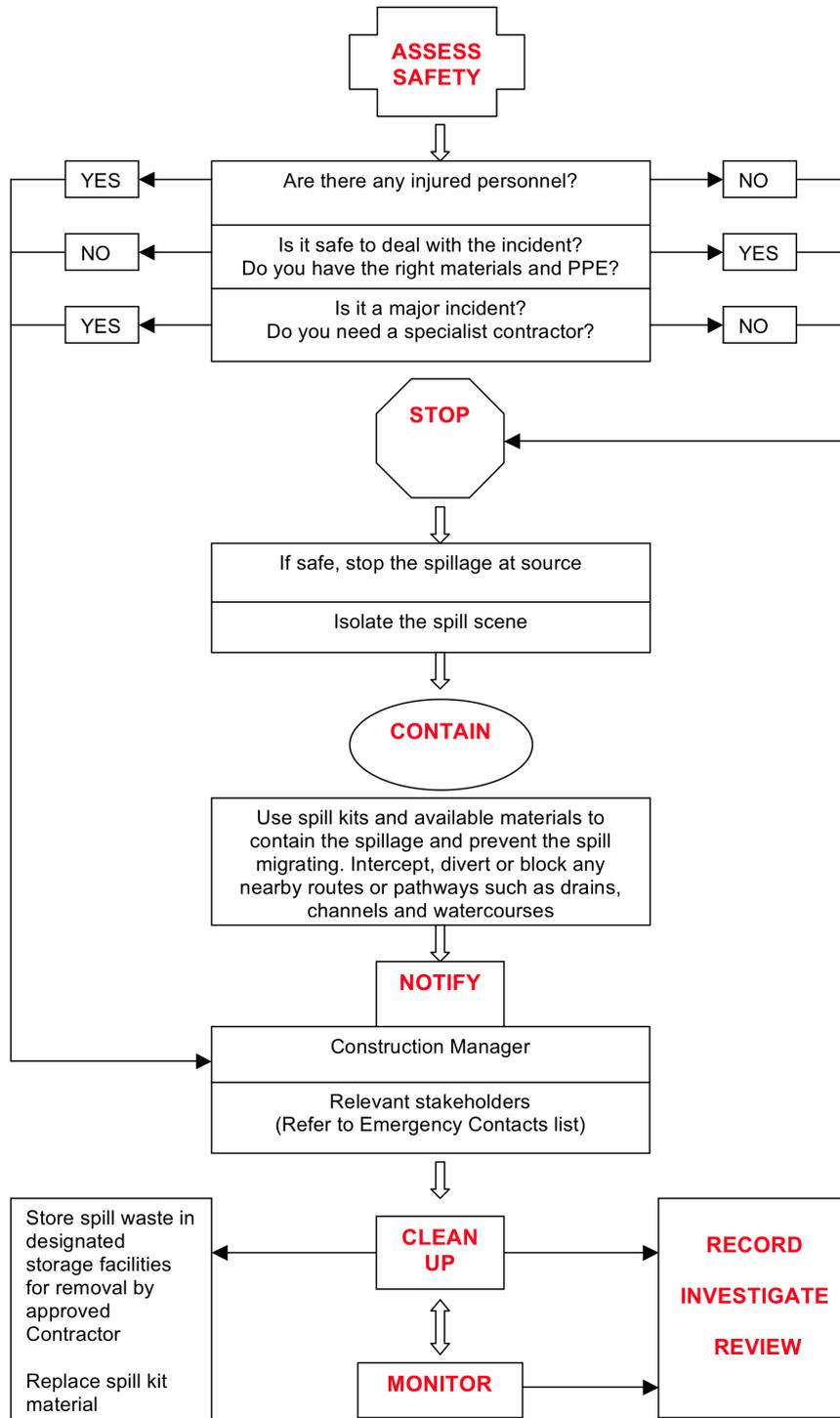
- GPP 2 Above ground oil storage tanks
- PPG 7 Re-fuelling facilities
- GPP 8 Safe storage and disposal of used oils
- PPG 3 Use and design of oil separators in surface water drainage systems
- GPP 26 Storage and handling of drums and IBC's
- CIRIA R163 Construction of bunds for oil storage tanks

#### Culverting and River Crossings

- WAT-PS-06-02 SEPA Position Statement on Culverting of Watercourses
- WAT-SG-25 and SEPA Good Practice Guide – River Crossings
- Scottish Executive Guidance (2000) River Crossings and Migratory Fish: Design Guidance
- GPP 21 Pollution incident response planning
- GPP 4 Treatment and disposal of sewage where no foul sewer is available

## Appendix IV

### Indicative Spill Response Flow Chart



## Appendix V

### Incident Categories

**Category 1 (Major) Incident** - a major environment incident will generally be non-routine and large scale for example, but not limited to, the following:

- Persistent or extensive effect on water quality (e.g. major spillage to controlled water)
- Persistent or extensive contamination of land (e.g. spillage requiring extensive decontamination measures)
- Persistent or extensive effects on air quality
- Destruction or major damage to important aquatic or terrestrial wildlife habitat
- Destruction or major impact on protected and/or important fauna and flora
- Major impact on properties
- Major adverse effect on amenity value of an area or on an important recreation activity
- Serious health risk to the public

**Category 2 (Significant) Incident** - a significant environment incident for example, but not limited to, the following:

- Significant but local effect on water quality
- Significant but localised contamination of land
- Significant effect on local air quality
- Localised damage to important aquatic or terrestrial wildlife habitat
- Significant effect on fauna and flora
- Significant adverse effect on a recreational activity or event
- Minor health risk to the public

**Category 3 (Minor) Incident** - a minor environment incident involves one or more of the following criteria:

- Limited effect on water quality around discharge
- Minimal contamination of land (no overall effect on the use or quality of that land)
- Minimal effect on air quality
- Limited effect on local ecosystem
- Minor impact on aesthetic quality

**Category 4 (Insignificant) Incident** - where an incident has been verified, e.g. a spillage has occurred, but has been contained and results in no environmental impact to air, land or water.

**Near-Miss** - where no incident has occurred, but a failing in the environmental management system, non compliance with the PPIP has caused a near-miss event, or a condition that if left unattended could lead to an incident.

## Appendix VI

### Mitigation Measures Matrix

Mitigation Measure(s)	Reference number	Activities															
		All activities	Drilling, excavation and borrow pit operations	Surface water, erosion and sediment run-off management controls	Watercourse crossings and culvert installation	Construction of site compound, control building & substation	Construction, upgrading and maintenance of roads and track	Construction of cable tracks, turbine bases and crane hardstandings	Delivery, storage, handling and use of fuels, oils and chemicals	Use of vehicles, plant and equipment	Refuelling	Waste management	Wastewater management (sewerage and foul waters)	Concrete batching	Communications	Security	Timing
Water required for any drilling operations will only be abstracted from local watercourses / standing water bodies in compliance with the Controlled Activities Regulations (CAR) and if on the public water supply catchment with the approval of the SWEM.	1	✓															
Effluents from any drilling, excavation or borrow pit operations will not be allowed to discharge directly into any watercourse and will be treated by using run-off areas, silt fences, settlement facilities or other site agreed mitigation measures and be in accordance with SEPA and CAR requirements.	2	✓	✓	✓	✓	✓											
Drilled boreholes on the water supply catchment holes will be sealed using bentonite pellets or inert non-liquid material as agreed with the SWEM.	3	✓															
The principles of prevention will be applied in the first instance to control surface water, erosion and sediment run-off by minimising the generation of contaminated water. Controls will be in accordance with best practice guidance such as, CIRIA C532 Control of water pollution from construction sites - guidance for consultants and contractors, CIRIA C648 Control of water pollution from linear construction projects and WAT-SG-32 SEPA Guidance on the special requirement for civil engineering contracts.	4	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Construction of any interceptor, cut off or road ditches in peat areas will take into account the recommendation of the Peat Stability Assessment and the potential for carbon losses and impacts on water colour levels. Where practicable, turves will be replaced and ditches cut in peat lined to minimise carbon and colour losses.	5			✓	✓	✓	✓	✓	✓	✓							
Areas of exposed soil or peat and disturbed ground will be minimised and restored and re-vegetated or covered as soon as practicable.	6		✓	✓	✓	✓	✓	✓	✓	✓							
Clean uncontaminated water from undisturbed areas will be intercepted and diverted or pumped around or through the working area. The working area will be isolated and the ingress of clean water minimised. Uncontaminated water will be kept clean and will be prevented from mixing with potentially contaminated water.	7		✓	✓	✓	✓	✓	✓	✓	✓				✓			
Raw materials selected for construction will be as clean as practicable and chosen to minimise the potential for generating silt laden run-off.	8			✓	✓	✓	✓	✓	✓	✓							
Consideration will be given to temporal and spatial zoning of activities to restrict timings and locations of works with the potential to cause pollution.	9	✓															
Run-off velocities will be minimised to reduce the potential for pollution by the frequent use of check dams, grips or cut-off facilities. No grip or run-off area will discharge directly to any watercourse; buffer strips will be maintained augmented with silt fences or other mitigation measures as required.	10		✓	✓	✓	✓	✓	✓	✓	✓							
Where sediment contaminated run-off or discharges are generated these will be treated by one or a combination of techniques designed to treat and remove suspended solids such as irrigation (by use of overhead or spray irrigation), settlement (by use of settlement ponds aided by physical or chemical means) or filtration (silt fences, straw bales, check dams etc). The technique will be appropriate for the particular site sensitivities and will take into account location of nearest watercourse or drainage pathway, gradient, vegetative cover, underlying permeability and water table and weather conditions.	11		✓	✓	✓	✓	✓	✓	✓	✓							
The use of flocculant to aid settlement will only be undertaken following approval by SEPA and when on the public water supply catchment, the SWEM.	12			✓													
The location and technique used for watercourse crossings / culvert installation will take into account Controlled Activities Regulations (CAR) requirements and the guidance WAT-PS-06-02-SEPA Position Statement on Culverting of Watercourses and WAT-SG-25 and SEPA Good Practice Guide - River Crossings.	13				✓												
Where watercourse crossings may impact migratory fish, the Scottish Executive Guidance (2000) River Crossings and Migratory Fish: Design Guidance will be taken into account in consultation with the SWEM (on public water supply catchment) or ECOV.	14					✓											
All piped watercourse crossings will be of plastic or pre-cast concrete unless otherwise agreed by the SWEM (on public water supply catchment) or ECOV. Piped watercourse crossings will be of sufficient diameter to accommodate 1 in 200 year return flows.	15				✓												
Culverts passing through roads along which cable tracks will be excavated will be of a sufficient length to discharge beyond the cable trench to prevent water discharging into the track.	16				✓												
Wind farm infrastructure, including roads, cable trenches, crane hardstandings, turbine bases, control building, sub-station, site compound and lay-down areas will be micro-sited and agreed with the SWEM and ECOV to avoid watercourses and minimise impacts on site drainage.	17				✓				✓	✓							
Temporary drainage ditches, cable tracks and any other temporary excavation will be excavated in a manner to facilitate early backfill and re-use of turves.	18		✓	✓	✓	✓	✓	✓	✓	✓							

Mitigation Measure(s)	Reference number	Activities															
		All activities	Drilling, excavation and borrow pit operations	Surface water, erosion and sediment run-off management controls	Watercourse crossings and culvert installation	Construction of site compound, control building & substation	Construction, upgrading and maintenance of roads and track	Construction of cable tracks, turbine bases and crane hardstandings	Delivery, storage, handling and use of fuels, oils and chemicals	Use of vehicles, plant and equipment	Refuelling	Waste management	Wastewater management (sewerage and foul waters)	Concrete batching	Communications	Security	Timing
Material sourced for construction shall be inert, non-metaliferous and with a low sulphide content. Prior to use on site, samples of material will be tested to confirm the stone is of an inert nature that will not compromise the public water supply quality.	19																
Prior to construction works commencing on site the existing road drainage will be reviewed and made good to ensure culverts, grips / run-off areas, interceptor ditches etc are functioning and surface water is being shed from the running surface.	20			✓		✓											
Prior to construction works commencing and during construction oil spill booms and sediment control mitigation measures will be installed to provide contingency for oil spills and silt run-off.	21			✓		✓											
Drainage grips / run-off areas will be installed at regular intervals to relieve road drainage. No grip or run-off area will discharge directly to any watercourse. buffer strips will be maintained augmented with silt fences or other mitigation measures as required.	22			✓		✓											
Site road, hardstanding and compound surfaces will be regularly checked and kept free of accumulations of mud and dust and maintained in a good condition to facilitate free drainage and prevent the formation of ruts and potholes.	23			✓		✓											
Run-off areas, grips, check dams, silt fences, settlement facilities, straw bales, oil absorbent materials and any other pollution control measures will be regularly inspected and maintained to ensure their efficient functioning and will be replaced when necessary as determined by the Construction Manager or advised by SEPA, ECOw or the SWEM. Sludges and waste materials associated with environmental mitigation measures will be managed according to the CEMP or as required by SEPA.	24			✓		✓											
Any oil water separators / interceptors will be designed and constructed in accordance with best practice guidance such as PPG 3. Use and design of oil separators in surface water drainage systems. Outlets from and dewatering of interceptors will be in accordance with SEPA requirements.	25					✓											
All oils, fuels and chemicals will be stored above ground in labelled/signed and designated areas remote from any drains, watercourses or abstraction points and at locations agreed with Scottish Water and SEPA prior to the commencement of any operations. Storage areas will located on stable and secure, level ground, designed to avoid accidents and collisions and deter vandalism. No fuel shall be stored within the Shield Burn catchment.	26							✓									
All bulk (>200 litres) deliveries of oils, fuels and chemicals will be escorted onto and off the site. The maximum re-fill capacity will be set at no more than 95% of the maximum storage capacity and sufficient capacity in any tank will be checked prior to any delivery. Deliveries will be supervised at all times by designated personnel trained in spill response. Spill response materials will be at hand during deliveries and relevant pollution prevention / mitigation features (such as stop / By-pass valves) will be activated.	27							✓									
Oil storage arrangements will comply with relevant oil storage Regulations. Storage and handling of fuels, oils and chemicals will be in accordance with best practice such as GPP 2, Above ground oil storage tanks, GPP 8 Safe storage and disposal of used oils, and GPP 26, Storage and handling of drums and IBC's.	28							✓									
All tanks containing potentially polluting liquids will be inspected prior to being brought on site and be of sound structural integrity. All fuels and oils will be stored within impermeable facilities with secure secondary containment of at least 110% of the storage capacity. Any valve, filter, sight gauge, vent pipe or other ancillary equipment will be situated within the secondary containment system and arranged so that any discharges are contained. All tanks must be tamper proof, have the facility for direct fuelling and be locked when not in use. Access to tanks will be an authorised activity by designated personnel.	29							✓									
Bunds will be constructed in accordance with best practice such as CIRIA R163 Construction of bunds for oil storage tanks. Bunds will be covered to prevent the ingress of water.	30							✓									
All hazardous liquids with the potential to cause pollution being transported across the site during construction of the wind farm will be housed in robust secondary containment facilities. Volumes of hazardous liquids being transported will be minimised to reduce the pollution risk.	31							✓									
Refuelling of vehicles, plant and machinery will be an authorised activity undertaken by designated personnel in accordance with best practice such as PPG 7. Refuelling facilities. Refuelling of vehicles and mobile plant will be undertaken in designated areas. Any refuelling of plant, equipment or vehicles on the public water supply catchment will be undertaken at stable locations remote from watercourses and drainage pathways at locations and in a manner approved by the SWEM. No fuel shall be stored within the Shield Burn catchment.	32									✓							
Personnel authorised to undertake refuelling operations will be trained in spill response. Spill response materials will be present at any refuelling locations and any transport of fuel, oil or other potentially polluting liquid on the public water supply catchment, will be provided with an escort vehicle containing spill response materials.	33									✓							

### Mitigation Measure(s)

Mitigation Measure(s)	Reference number	Activities															
		All activities	Drilling, excavation and borrow pit operations	Surface water, erosion and sediment run-off management controls	Watercourse crossings and culvert installation	Construction of site compound, control building & substation	Construction, upgrading and maintenance of roads and track	Construction of cable tracks, turbine bases and crane hardstandings	Delivery, storage, handling and use of fuels, oils and chemicals	Use of vehicles, plant and equipment	Refuelling	Waste management	Wastewater management (sewerage and foul waters)	Concrete batching	Communications	Security	Timing
Plant nappies or alternative contingency measures as agreed with the SWEM will be placed under plant and equipment during refuelling operations on the public water supply catchment.	34									✓							
Personnel working on site will have/be provided with a means of communication allowing contact to be made with individuals/organisations listed in the emergency response plan.	35	✓												✓			
Works will be scheduled taking into account times of the year subject to higher and intense rainfall events and when sensitive receptors, such as spawning salmonids may be present.	36	✓															✓
The Construction Project Manager will instruct works to be halted in the event that weather or other site conditions are causing or likely to cause pollution.	37	✓															✓
The site will be maintained in a secure manner to minimise the potential for theft and vandalism. In particular, hazardous and waste materials will be maintained in secure facilities.	38							✓			✓						✓
The CEMP will include a Site Waste Management Plan (SWMP). The SWMPs will be in accordance with best practice guidance (IEMA, NatRegs, DEFRA, WRAP). Waste will be segregated and stored in robust, clearly labelled containers, in designated locations and secured to prevent escape through corrosion, wear, spillage, accident or the weather.	39										✓						
Hazardous liquid wastes will be stored securely within designated locations. Storage of waste oils will comply with relevant oil storage Regulations and be in accordance with best practice such as GPP 8. Safe storage and disposal of used oils.	40							✓			✓						
Provision will be made for the storage of oil contaminated wastes which will be treated as hazardous waste and stored in secure designated locations.	41										✓						
All waste will be stored, handled and disposed of in accordance with Duty of Care requirements.	42										✓						
Foul water arising from welfare facilities serving the construction site compound will either be securely contained and tankered away for off-site disposal or treated and disposed of by a SEPA approved facility. Sewage tankers will be escorted on and off site and removal of foul waters / sludge will supervised at all times.	43										✓						
Foul discharges associated with the compound and control building will be authorised under and be compliant with the requirements of CAR. Any sewage treatment facilities will be maintained to prevent pollution of surface or groundwaters and take into account best practice guidance such as GPP 4. Treatment and disposal of sewage where no foul sewer is available.	44										✓						
Any concrete / cement wash-out facilities on site will be located remote from any watercourse or drainage pathways and operate on an impermeable closed cycle basis with associated liquid and /or solid wastes disposed of in accordance with SEPA requirements and Scottish Water agreement.	45										✓		✓				
Contingency provision will be made for splashes of fuels, oils, chemical, concrete and any other hazardous liquids on site.	46	✓															
All vehicles and plant will be inspected for signs of fuel / oil leaks on a daily basis. Any vehicles found to be leaking hazardous fluids will not be allowed onto the site, any found to be leaking on site shall be removed from site or isolated and contained pending repair.	47								✓								
All designated site vehicles will have vehicle spill kits.	48								✓								
Any vehicle and / or wheel wash facilities will be in accordance with best practice guidance such as GPP 13. Vehicle washing and cleaning. Any vehicle and / or wheel wash facilities will operate on a closed cycle basis or as otherwise authorised by SEPA and agreed with Scottish Water. Associated liquid and /or solid wastes will be disposed of in accordance with duty of care and SEPA requirements.	49								✓		✓						
Use and operation of vehicles and machinery will take into account the nature of the ground. Soft and saturated areas where the potential for damage to habitats or vehicles becoming bogged is high will be avoided and where appropriate bog mats will be used.	50								✓								

## Appendix VII

### Indicative Toolbox Talks

- Oil/Diesel Storage
- Re-fuelling
- Scottish Water Catchment Sensitivity
- Environmental nuisance; noise, vibration, dust, mud
- Water Pollution Prevention (silt, cement and concrete, hydrocarbons)
- Waste Management; segregation and storage
- Emergency Plans
- Spill Prevention and Response
- Material Handling and Storage
- Pumping and Over-pumping
- Washing down plant and machinery

## Appendix VIII

### Scottish Water Shout Poster



# EMERGENCY DON'T HANG ABOUT SHOUT !

The Scottish Water **BUSINESS ALERT SYSTEM OPERATES 24/7**

It relies on staff and contractors reporting events, that can result in a disruption of service, to their supervisor or line manager **IMMEDIATELY**

It ensures that the business is made aware of a potential or actual incident. This immediately triggers the Scottish Water emergency response plans.

**How to Shout -** When you notice an incident you must advise your supervisor or one of the people listed below **immediately**

Construction Site Manager:
Tel no.
Project Manager:
Tel no.
Scottish Water Operations Manager / Team Leader:
Tel no.
Scottish Water Contact Centre (use only if none of the above can be reached) Tel no. 0845 601 8855



Protect the Environment

Protect Our Reputation

Protect Public Health

Support Our Customers

Do the Right Thing

## Appendix IX

### Scottish Water List of precautions for watercourses / DWPAs - windfarms

## **Annex 1: Precautions to protect drinking water and Scottish Water assets during windfarm construction and operational activities**

### **General requirements**

1. The proposed timing of the works, including planned start and completion dates, should be submitted to Scottish Water in advance of any activities taking place on-site. This information should be submitted to **PlanningConsultations@scottishwater.co.uk**.
2. If a connection to the water or waste water network is required, a separate application must be made to the Scottish Water Development Operations Team for permission to connect. It is important to note that the granting of planning consent does not guarantee a connection to Scottish Water assets. The Development Operations Team can be contacted by telephone on **0800 389 0379** or via email at **developmentoperations@scottishwater.co.uk**.
3. In the event of an incident occurring that could affect Scottish Water we should be notified without delay using the Customer Helpline number **0800 0778 778** and the local contact if known.

### **Protecting drinking water quality**

#### **Regulatory requirements**

4. Scottish Water is required to ensure that any activity within a drinking water catchment does not affect the ability of Scottish Water to meet its regulatory requirements.
5. Water Treatment Works are designed to treat the specific parameters of the raw water source they receive (i.e. the specific chemical, biological and other characteristics of natural, untreated water). If the characteristics of the raw water change or deteriorate, it can affect the ability of the works to supply drinking water to customers at the required standards.
6. The regulations relating to the quality of drinking water supplied by Scottish Water are the Public Water Supplies (Scotland) Regulations 2014 as amended. Quality Standards are derived from the European Drinking Water Directive 98/83/EC.
7. Drinking water catchments feed Scottish Water abstractions which supply water to water treatment works. Under Article 7 of the Water Framework Directive, waters used for the abstraction of drinking water are designated as Drinking Water Protected Areas (DWPA). The objective of the Water Framework Directive is to ensure that no activity results in the deterioration of waters within the DWPA. If an activity falls within a DWPA or drinking water catchment, it is essential that water quality and quantity are protected.

#### **Specific precautions for drinking water protection during windfarm activities**

8. A detailed, site specific Construction Method Statement including e.g. Construction Environmental Management Plan, Risk Assessment, Pollution Prevention and Contingency Plan must be submitted to Scottish Water at least three months prior to the works commencing. This should be agreed with Scottish Water prior to any operations taking place. Any other associated documents (e.g. Drainage Plan, Peat Management Plan etc.) should also be submitted and agreed with Scottish Water at least three months prior to works commencing. In the first instance, this information should be supplied to **PlanningConsultations@scottishwater.co.uk**.
9. Where possible, infrastructure and activities should be located outside of the drinking water catchment. If this can be demonstrated to be impracticable then all infrastructure and activities should be located 100m from any watercourse where possible, and a minimum of 50m distant where 100m can be demonstrated to be undeliverable. This includes turbine locations, crane hard standing areas, cable trenches, access tracks and temporary construction related activities such as borrow pits, plant stockpiled materials, cement batching, wheel washing and construction compound areas.
10. Any potential effect on the hydrology of the area resulting from the construction and operation of the proposed development should be assessed and the findings presented in the Environmental Statement or environmental appraisal accompanying the planning application. This should include consideration of natural drainage patterns, base flows/volume, retention/run-off rates and potential changes to water quantity. Any required mitigation measures and proposed monitoring should also be detailed in the Environmental Statement or environmental appraisal accompanying the planning application.
11. When constructing roads, drainage ditches and trenches, drainage should not be directed into adjacent catchments but retained within the existing catchment.
12. Any potential pollution risk which could affect water quality should be considered and mitigation measures implemented to prevent deterioration in water quality and pollution incidents. This includes sediment run-off, soil or peat erosion, management of chemicals and oils, etc. (see also point 17 below). This should be considered for operations at all stages of development including pre- and post-construction.

13. Mitigation measures to prevent pollution to watercourses should be outlined in the Environmental Statement or environmental appraisal accompanying the planning application, and adopted in the Construction Method Statement/Construction Environmental Management Plan prior to work starting on-site. Any measures implemented should be regularly checked, maintained and improved if pollution occurs.
14. Consideration should be given to the use of food grade oils within turbines in close proximity to watercourses. The use of food grade oils within other plant and vehicles should also be considered depending on the risk to the drinking water catchment.
15. Watercourses that feed into any watercourses or reservoirs that Scottish Water abstracts from should be considered when developing new road or access infrastructure. Any crossing of these watercourses should be kept to a minimum. Pollution prevention measures should be put in place at each crossing point and silt traps, or equivalent, should be installed at regular intervals to minimise the risk from pollution.
16. Once constructed, site roads and access routes should be regularly maintained to ensure minimal erosion, and hence run-off and pollution, from the road surface. Avoid using material resulting in metallic, sulphide-rich or strongly acidic polluted water run-off, ideally using inert materials with low erodibility
17. No refuelling or storage of fuel or hazardous materials should take place within the drinking water catchment area. If this can be demonstrated to be impracticable, then the appropriate Pollution Prevention Guidelines (PPGs) or updated Guidance for Pollution Prevention (GPPs) should be followed. This includes, GPP 2: Above ground oil storage tanks, GPP 5 Works and maintenance in or near water, PPG 6: Working and Construction and Demolition Sites, GPP 8: Safe storage and disposal of used oils, GPP 21: Pollution incident response planning and PPG 22: Incident response – dealing with spills. Rather than 10m buffers from watercourses, we would recommend 50m buffers are applied to watercourses and 50m applied to spring, well or borehole. Oil storage should be in accordance with The Water Environment (Oil Storage) Regulations (Scotland) 2006. There should be dedicated oil storage areas created. Spill kits should be located within all vehicles, plant and high risk areas.
18. Waste storage, concrete preparation and all washout areas should not be within the drinking water catchment area. If this can be demonstrated to be impracticable then this should be in dedicated areas 50m from a watercourse and designed to be contained and to prevent escape of materials/run-off to the environment.
19. Welfare/waste water facilities should preferably be located outside the drinking water catchment. If not practicable, then portable toilets should be used and waste disposed of off-site. Alternatively secondary treatment and soakaways should be used and, if required, a sampling chamber installed and sampling programme agreed. The proposed method of managing welfare and waste water facilities should be detailed in the Environmental Statement or environmental appraisal accompanying the planning application. If sampling is required, Scottish Water should be contacted via **PlanningConsultations@scottishwater.co.uk** in the first instance.
20. Any proposed abstractions for activities such as welfare facilities or cement batching plants should be detailed in the Environmental Statement or environmental appraisal accompanying the planning application.
21. Induction training should be given to all personnel on-site and should include Scottish Water site sensitivities in relation to drinking water catchments and assets (see below), as well as spill response as outlined in PPG 22: Dealing with spills.
22. Construction and Environmental Management Plans, Pollution Prevention and Contingency Plan and associated documents should include the Scottish Water Customer Helpline Number **0800 0778 778** and the local contact details.

#### **Protecting drinking water in peatland areas**

23. When peat is present within the proposed area of activity the Environmental Statement or environmental appraisal accompanying the planning application should include an assessment on the potential release of colour, dissolved organic carbon and total organic carbon as a result of changes to hydrology and/or physical disturbance. This should cover the construction and post-construction phases.
24. Excavations and ground disturbance in areas of deep peat should be avoided. Deep peat is considered to be peat greater than 0.5m deep as stated in Good Practice During Windfarm Construction, 2015 (joint publication by Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland and Historic Environment Scotland).
25. The natural hydrology within peat should be maintained and/or restored. This should be taken into account when designing the turbine foundations, crane hardstanding areas, access tracks and cable trenches, etc. Any necessary measures to maintain natural drainage of peat and sub-surface hydrology, such as tailored drain spacing on access tracks, should be implemented as part of the design of the development.

26. Scottish Water requests that, where possible, access tracks in the drinking water catchment are constructed as floating tracks with adequate provision for maintaining existing drainage patterns.
27. Exposed soils and peat can release sediment, colour and dissolved organic carbon. The use of geotextiles, turf replacement and/or reseeded, should be undertaken as soon as possible.
28. Restoration of any degraded peat should be considered for areas within the drinking water catchment.

#### **Protecting drinking water due to forestry activity**

29. An assessment of any forestry activity, including felling, planting or other activity, likely to affect the drinking water catchment should be included in the Environmental Statement or environmental appraisal accompanying the planning application. Any specific mitigation measures should be identified and incorporated into the Construction Environmental Management Plan for the site prior to works commencing.
30. The Environmental Statement or environmental appraisal accompanying the planning application should include details on the harvesting/clearance process for any felling/woodland removal. The least disturbing method/s should be selected where possible.
31. Any historic drains or ditches within the windfarm area that discharge directly to a watercourse in the drinking water catchment should be blocked and slowly discharged to a buffer area in line with current Forestry Commission Forest and Water Guidelines. Where possible, this should be undertaken in advance of any work being carried out on-site, to provide protection for watercourses during site activities.

#### **Monitoring requirements to protect drinking water quality**

32. During construction, a programme of daily visual inspection of the watercourses, flow conditions (i.e. high, medium, low, or no flow), prevailing weather and any other pertinent observations, will be required to be implemented. The results should be recorded and the information submitted to Scottish Water (i.e. in a monthly progress report). This should be undertaken when water quality samples are taken. In the first instance, reporting should be provided to **PlanningConsultations@scottishwater.co.uk**.
33. A water sampling programme shall be established and agreed with Scottish Water. This should assess the baseline water quality for a minimum of one year prior to any activities commencing on-site where possible, including ground investigations and any felling activities, to allow an accurate understanding of baseline conditions at the site. Water sampling should continue during construction and then post-construction for a minimum of one year. Following completion of one year of sampling post-construction, this should be reviewed to determine whether this should continue for a further agreed period. The parameters, frequency and sampling locations will also need to be agreed with Scottish Water. This monitoring will establish if any decline in water quality can be attributed to the development. It may also be necessary to establish trigger levels to determine when any potential issues should be reported to Scottish Water.
34. The appointed Ecological or Environmental Clerk of Works should be accredited with the Association of Environmental and Ecological Clerk of Works (AEECoW) and should have relevant knowledge and experience to provide advice and monitor compliance with measures for the protection of water quality in relation to abstractions for water supply.
35. Depending on the vulnerability of the public water supply, Scottish Water may request that a dedicated Environmental Manager be appointed and present on-site to assess and monitor any effects caused by the development.

#### **Guidance documents**

36. Please ensure that appropriate Guidance Documents are followed, including:
  - Good Practice during Wind Farm Construction, Version 3. SNH/SEPA/Scottish Renewables/Forestry Commission Scotland (September 2015).
  - Floating Roads on Peat. Forestry Civil Engineering and SNH. (August 2010).
  - Constructed tracks in the Scottish Uplands, 2<sup>nd</sup> edition. SNH (June 2013).
  - Forests and water UK Forestry Standard Guidelines, 5<sup>th</sup> Edition. Forestry Commission (2011).
  - General Binding Rules under the Controlled Activities Regulations (see The Water Environment (Controlled Activities) Scotland Regulations (as amended) A Practical Guide, Version 7.2, SEPA (March 2015)).
  - SEPA Pollution Prevention Guidelines (<http://www.sepa.org.uk/regulations/water/guidance/>).

### Protecting Scottish Water assets

37. If an activity associated with a development proposal is located within close proximity to Scottish Water assets, including water and waste water pipe infrastructure, treatment works and reservoirs etc., it is essential that these assets are protected from damage. To this end, the developer will be required to comply with Scottish Water's current process, guidance, standards and policies in relation to such matters.
38. Copies of Scottish Water's relevant record drawings can be obtained from the undernoted Asset Plan Providers. This is distinct from the right to seek access to and inspect apparatus plans at Scottish Waters area offices, for which no charge is applied.

#### Site Investigation Services (UK) Ltd

Tel: 0333 123 1223  
Email: [sw@sisplan.co.uk](mailto:sw@sisplan.co.uk)  
[www.sisplan.co.uk](http://www.sisplan.co.uk)

#### National One-Call

Tel: 0844 800 9957  
Email: [swplans@national-one-call.co.uk](mailto:swplans@national-one-call.co.uk)  
[www.national-one-call.co.uk/swplans](http://www.national-one-call.co.uk/swplans)

#### Cornerstone Projects Ltd

Tel: 0151 632 5142  
Email: [enquiries@cornerstoneprojects.co.uk](mailto:enquiries@cornerstoneprojects.co.uk)  
<http://www.cornerstoneprojects.co.uk/index.php/scottishwaterplans>

39. It should be noted that the site plans obtained via the Asset Plan providers are indicative and their accuracy cannot be relied upon. It is therefore recommended that the developer contacts the **Scottish Water Asset Impact Team** at [service.relocation@scottishwater.co.uk](mailto:service.relocation@scottishwater.co.uk) for further advice if assets are shown to be located in the vicinity of the proposed development, and where the exact location and the nature of the infrastructure shown could be a key consideration for the proposed development. An appropriate site investigation may be required to confirm the actual position of assets in the ground. Scottish Water will not be liable for any loss, damage or costs caused by relying upon plans or from carrying out any such site investigation.
40. Prior to any activity commencing, all known Scottish Water assets should be identified, located and marked-out.
41. Scottish Water expects method statements, safe systems of work and risk assessments to be prepared and submitted in advance to Scottish Water for formal review and acceptance. These documents shall consider and outline in detail how existing Scottish Water assets are to be protected and/or managed for the duration of any construction works and during operation of the development if relevant. These documents must be submitted to Scottish Water's Asset Impact team for formal prior written acceptance.
42. The developer shall obtain written acceptance from Scottish Water's Asset Impact Team where any site activities are intended to take place in the vicinity of Scottish Water's assets. The Asset Impact Team can advise on any potential risk mitigation measures that may be required.
43. Scottish Water and its representatives shall be allowed access to Scottish Water assets at all times for inspection, maintenance and repair. This will also ensure that the Scottish Water assets are protected and that any Scottish Water requirements are being observed.
44. Any obstruction or hindrance of access to Scottish Water assets should be avoided. The prompt and efficient use and manipulation of valves, hydrants, meters or other apparatus is required at all times. There should also be no interference with the free discharge from water main scours or sewer overflows.
45. In the event of an incident occurring that could affect Scottish Water, including any damage to assets, Scottish Water should be notified without delay, using the Customer Helpline number **0800 0778 778**, and the local contact if known. Scottish Water apparatus should not be interfered with or operated by anyone other than Scottish Water personnel.
46. The 'offset distance' is the distance between any Scottish Water asset and adjacent properties and structures. Scottish Water reserves the right to ask for an offset distance in accordance with its own current policy and standards and to suit specific circumstances. The details of this requirement should be confirmed with Scottish Water as an early part of the design process.
47. Stationary plant, equipment, scaffolding, construction or excavated material, etc. should not be placed over, or close to, any Scottish Water assets without the prior written consent of Scottish Water which may be withheld depending on circumstances on-site.

48. Special care should be taken to avoid the burying of Scottish Water assets or the obstruction of sewers or manholes with fill or other material. Arrangements for altering the level of any chambers should be agreed in advance with Scottish Water and these should be constructed in accordance with Scottish Water requirements. The cost of any work to Scottish Water assets will be met by the project developer.
49. Excavation works (e.g. of wind turbine foundations) should not be carried out in the proximity of a water or waste water main without due notice having been given to Scottish Water and prior written acceptance obtained. The developer will comply fully with any Scottish Water specific site requirements.
50. Any tree planting associated with the development (e.g. compensatory planting or screening etc.) should be undertaken in line with Water for Scotland 3<sup>rd</sup> Edition (April 2015) to ensure that Scottish Water assets are not put at risk by future growth of tree roots.
51. Vibration in close proximity to Scottish Water pipelines or ancillary apparatus should be managed in accordance with British Standard 5228-1:2009 (Code of practice for noise and vibration control on construction and open sites). The predicted levels of vibration should be agreed in advance with Scottish Water as part of the risk assessment and method statement and agreed vibration monitoring arrangements will be required.
52. The developer will consider the possibility of increased loading on Scottish Water apparatus and measures will be taken to eliminate or mitigate increased loading on assets. Care should be taken to identify any assets which may be crossed by vehicles on the access route to the site and crossing points will be engineered to the requirements of Scottish Water. Any pipe crossing proposals are subject to prior written acceptance by Scottish Water.
53. Scottish Water will not accept liability for any costs incurred in fulfilling any of the above requirements during the development planning, construction or operational phases, either by the developer, the developer's associates, contractors or any other person or organisation involved in the project.
54. If the developer damages any Scottish Water asset they will be held liable for any costs resulting from this.
55. Scottish Water may require costs associated with the development to be reimbursed by the developer or the developer's agents.

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