

Seagreen Offshore Wind Farm

Marine Pollution Contingency Plan

July 2020



Project Title	Seagreen Wind Energy Ltd
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Marine Pollution Contingency Plan

Section 36 Consent Condition 14b (Offshore Wind Farm), OTA Marine Licence 04678/19/0 Condition 3.2.1.2c and Marine Licence 07050/20/0 Condition 3.1.1

IN THE EVENT OF A SPILL GO STRAIGHT TO PART 2: POLLUTION INCIDENT RESPONSE PROCEDURE

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Consent Plan Overview

Purpose of the Marine Pollution Contingency Plan

This Marine Pollution Contingency Plan (MPCP) has been prepared to address the specific requirements of the relevant conditions attached to the Section 36 (S36) consents and OTA/ Alternative Landfall Cable Installation Methodology Marine Licences (collectively referred to as 'the consents') issued to Seagreen Wind Energy Limited (hereafter referred to as Seagreen), for the Seagreen Alpha and Seagreen Bravo Offshore Wind Farms (OWFs) and the associated Offshore Transmission Asset (OTA).

Both Seagreen Alpha and Seagreen Bravo OWFs and OTA are being constructed together as one development (collectively referred to as 'the Seagreen Project') and therefore this MPCP has been prepared to discharge consent conditions for the Seagreen Project simultaneously.

The overall aims and objectives of the MPCP are to provide detailed information to those involved in the construction of the Seagreen Project on the actions and reporting requirements in the event of a pollution incident originating from offshore operations relating to the Seagreen Project.

All Seagreen Contractors (including their Sub-Contractors) involved in the Seagreen Project are required to comply with this MPCP through conditions of contract.

Scope of the MPCP

This MPCP, in accordance with the requirements of the consent conditions, outlines procedures to protect project personnel and to safeguard the marine environment in the event of an accidental pollution event arising from offshore operations relating to the Seagreen Project.

The MPCP presents the following information and guidelines to aid a response in the event that there is an accidental release of pollutants into the marine environment resulting from works related to the Seagreen Project:

- A risk assessment of the potential sources and likelihood of a pollution incident;
- Oil spill response procedures and actions, check sheets and industry example proformas;

Structure of the MPCP

The MPCP is structured as follows:

Sections 1-3 Set out the scope and objectives of the MPCP, provide an overview of the Development, set out the process by which this MPCP may be updated from time-to-time and describe roles and responsibilities relevant to the MPCP.

PART 1 RISK ASSESSMENT

Section 4 provides details on the source, type of hydrocarbons present and an assessment of the risk of hydrocarbon release resulting from Seagreen operations.

PART 2 POLLUTION INCIDENT RESPONSE PROCEDURE

Section 5 provides outlines response procedures and actions to be executed in the event of a pollution event.

Appendix Covers Seagreen Contacts and information directory.

**In the event of a spill, reference should be made to
PART 2 – POLLUTION INCIDENT RESPONSE PROCEDURE**

Plan Audience

This MPCP will be submitted for approval to the Scottish Ministers/Licensing Authority and other stakeholders in relation to monitoring compliance with the specific requirements of the relevant consent conditions.

Compliance with this MPCP will be monitored by: Seagreen's Ecological Clerk of Works (EcoW); Seagreen's appointed Contractors; and the Marine Scotland Licensing and Operations Team (MS-LOT).

Copies of this MPCP are to be held in the following locations:

- Seagreen head office;
- Seagreen construction office and marine coordination centre; and
- at the premises of any Contractor (as appropriate), including the Seagreen ECoW, acting on behalf of Seagreen.
- aboard any vessel engaged in the Wind Farm/OTA.

1. Introduction

1.1 Consents and Licences

Seagreen Wind Energy Limited (hereafter referred to as 'Seagreen') was awarded Section 36 Consents (S36 Consents) under the Electricity Act 1989 by Scottish Ministers in October 2014 for Seagreen Alpha and Seagreen Bravo Offshore Wind Farms (OWFs). Marine Licences for Seagreen Alpha OWF, Seagreen Bravo OWF and the Offshore Transmission Asset (OTA) (together the 'Marine Licences') were also awarded by Scottish Ministers in October 2014 under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009. In addition, a Marine Licence was granted in 2019 (and subsequently varied in 2020) providing an alternative landfall cable installation method. Together the wind farms Seagreen Alpha and Seagreen Bravo and the OTA collectively comprise 'the Seagreen Project'.

In 2018, following application by Seagreen, the existing 2014 consents for the Project Alpha and Project Bravo OWFs were varied by Scottish Ministers, to remove the consented OWF capacity limits, to allow the installation of higher rated wind turbine generators (WTGs). At the same time the commencement of the works within the S36 Consents was extended from five to eight years addition. This MPCP is seeking to discharge conditions of the S36 consents and Marine Licences, as varied, for Seagreen Alpha (Ref: 04676/18/0), Seagreen Bravo (Ref: 04677/18/0), the OTA (Ref: 04678/19/0) and the alternative landfall cable installation method (Ref: 07050/20/0).

The Onshore Transmission Asset was subject to a separate planning application under the Town and Country Planning (Scotland) Act 1997. This was awarded in principle by Angus Council in 2013 and extended in 2016, following reapplication by Seagreen.

1.2 Project Description

The Seagreen Project is located in the North Sea, in the outer Firth of Forth and Firth of Tay region and comprises the OWFs (the WTGs, their foundations and associated array cabling), together with associated infrastructure of the OTA (Offshore Substation Platform (OSPs), their foundations and the offshore export cable), to facilitate the export of renewable energy to the national electricity transmission grid. The location of the Seagreen Project is shown in Figure 1.0.

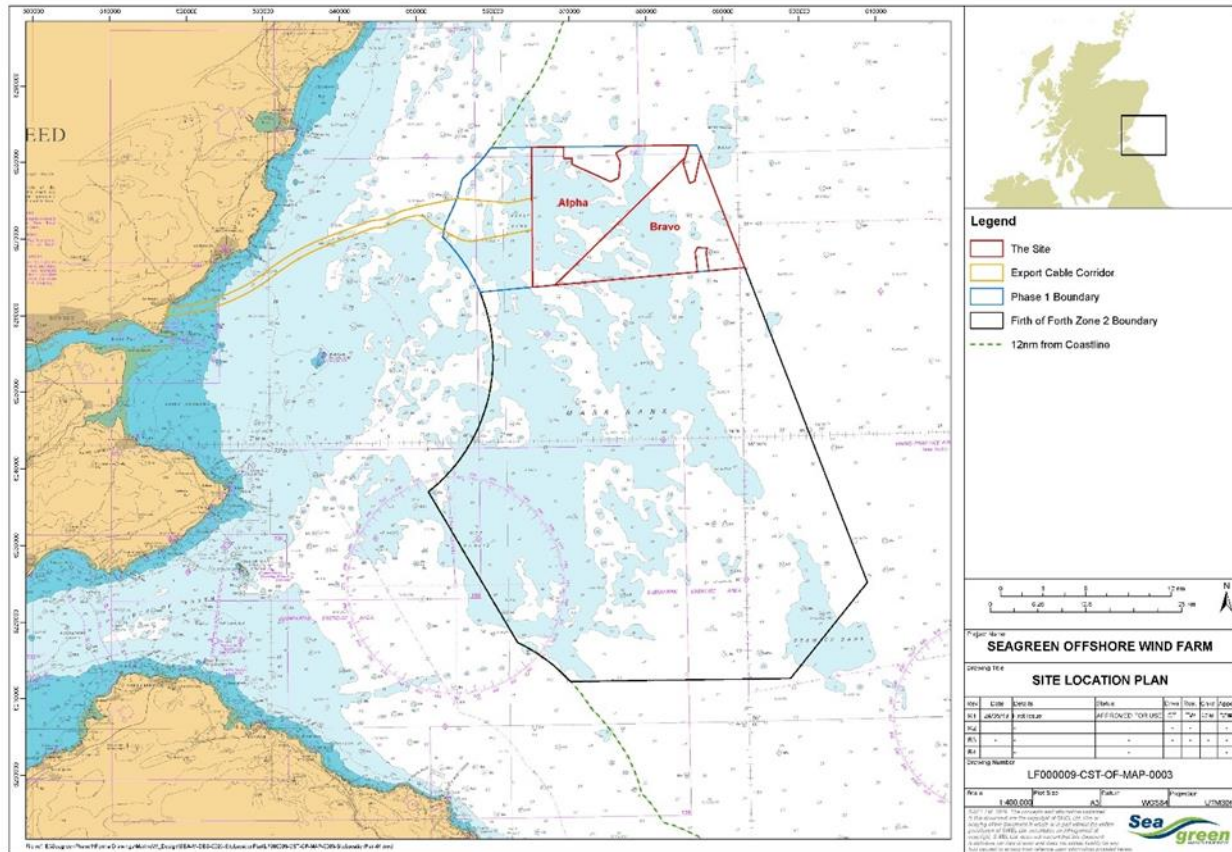


Figure 1.0 – Project Location

1.3 Consent and Licence Requirements

The Seagreen Project benefits from the following consents:

- the S36 Consents;
- the Wind Farm Marine Licences;
- the OTA Marine Licence and
- the Alternative Landfall Cable Installation Methodology Marine Licence,

This MPCP has been prepared to discharge condition 14b of the S36 Consents and condition 3.2.1.2c of the OTA Marine Licence, and Alternative Landfall Cable Installation Methodology Marine Licence condition 3.1.1 as set out in Table 1.1.

It is highlighted that both OWFs are being constructed together as one development and therefore this MPCP has been prepared to discharge consent conditions for Seagreen Alpha and Seagreen Bravo simultaneously. It should be noted that this MPCP is intended to provide full details, to allow the complete discharge of the relevant S36 Consent condition and the discharge of the OTA/ Alternative Landfall Cable Installation Methodology Marine Licence conditions.

Table 1.1 - Consent Conditions to be discharged by this MPCP

Consent Document	Condition Reference	Condition Text	Reference to relevant Section of this MPCP
Marine Licence (Offshore Transmission Asset)	3.2.1.2c	The Licensee must, no later than 6 months prior to the Commencement of the Works, submit a MPCP in writing to the Licensing Authority for their written approval.	This document sets out the MPCP for approval by Scottish Ministers.
		c) A Marine Pollution Contingency Plan ("MPCP") to include, but not necessarily limited to, provision in respect to spills and collision incidents occurring during construction and operation of the works, whilst taking into account existing plans for all operations including Offshore installations that may have an influence on the MPCP, practices used to refuel vessels at sea which must confirm to industry standards and to relevant legislation. The MPCP must also set out how any oil leaks within the structures are to be remedied and that such relevant repairs are required to be undertaken without undue delay;	PART 1 – RISK ASSESSMENT, Section 4 PART 2 – RESPONSE PROCEDURE, Section 5
		Commencement of the Works must not occur until the Licensing Authority has given its written approval to the MPCP. The Works must be constructed and operated in accordance with the MPCP.	This document sets out the MPCP for approval by Scottish Ministers.
Section 36 Consent Condition	S36, 14b,	The Company must, no later than 6 months prior to the Commencement of the Development, submit an Environmental Management Plan ("EMP"), in writing, to the Scottish Ministers for their written approval. It must address, but not be limited to, the following over-arching requirements for environmental management during construction: b. Pollution prevention measures and contingency plans;	The MPCP has been prepared to set out pollution prevention measures and contingency plans relating to fuel, oil and chemical spills. The CEMP (LF000009-CST-ON-PLN-0014 CEMP references this plan.

Consent Document	Condition Reference	Condition Text	Reference to relevant Section of this MPCP
Alternative Landfall Cable Installation Marine Licence	3.1.1	{...} The Licensee must ensure that, where the Works authorised by the licence are carried on as an alternative to nearshore cable laying operations under marine licence number 04678/14/0, that the works authorised by the licence are appropriately covered in the plans submitted under marine licence number 04678/14/0. Such plans are PEMP, EMP, DP, CoP, CMS, VMP, NSP, CaP, OMP, LMP and PS, as required by conditions 3.2.1.1, 3.2.1.2, 3.2.1.7, 3.2.2.3, 3.2.2.4, 3.2.2.8, 3.2.2.9, 3.2.2.10, 3.2.3.2, 3.2.2.14, and 3.2.2.5 of marine licence number 04678/14/0.	The requirements outlined in Section 3 4 and 5 of the MPCP document are applicable irrespective whether works are being undertaken under the Alternative Landfall Cable Installation ML or the OTA ML.

1.4 Linkages with Other Consent Conditions

The MPCP is necessarily linked to a number of other consent conditions. These are set out in Table 1.2 with details of the linkages presented and cross referenced as appropriate. It should be noted that information is not repeated across consent plans, rather, where pertinent information is available in linked consent plans, the relevant consent plans are referred to. The plans are not required for approval of the MPCP but are provided for ease of reference.

Table 1.2: Linkages with other consent plans and consent conditions

Reference [Consent Plan and or Consent Condition]	Linkage with the MPCP	Cross-reference in this MPCP
OWFs/OTA Marine Licence 3.1.7	Chemical usage The Licensee must ensure that all chemicals which are to be utilised in the Works have been approved in writing by the Licensing Authority prior to use. All chemicals utilised in the Works must be selected from the List of Notified Chemicals assessed for use by the offshore oil and gas industry under the Offshore Chemicals Regulations 2002, unless approved in writing by the Licensing Authority.	PART 1 – RISK ASSESSMENT, Section 4

Reference [Consent Plan and or Consent Condition]	Linkage with the MPCP	Cross-reference in this MPCP
OWFs/OTA Marine Licence Condition 3.1.8	Environmental Protection <p>The Licensee must ensure that all reasonable, appropriate and practicable steps are taken at all times to minimise damage to the Scottish marine area and the UK marine licensing area caused by the Licensable Marine Activity.</p> <p>The Licensee must ensure that all substances and objects deposited during the execution of the Works are inert (or appropriately coated or protected so as to be rendered inert) and do not contain toxic elements which may be harmful to the marine environment, the living resources which it supports or human health.</p>	PART 1 – RISK ASSESSMENT, Section 4
OWF Marine Licence Condition 3.2.2.7 OTA Marine Licence 3.2.1.6	Bunding and storage facilities <p>The Licensee must ensure suitable bunding and storage facilities are employed to prevent the release of fuel oils, lubricating fluids associated with the plant and equipment into the marine environment.</p>	PART 1 – RISK ASSESSMENT, Section 4

1.5 Construction Management

Seagreen and Seagreen's Contractors and their Sub-Contractors, in undertaking the construction of the Seagreen Project will ensure compliance with all relevant environmental and maritime legislation and that all necessary licences and permissions are obtained by the Contractors (and their Sub-Contractors), through conditions of contract.

Seagreen require that design embedded measures and adherence to good working practice is applied by Seagreen Contractors (and their Sub-Contractors) throughout the construction phase, seeking to minimise the risks to the environment. The implementation of such measures will be managed by the Contractor Environmental Advisors (CEAs), appointed by each key contractor throughout the duration of the construction period.

The relevant CEA will provide progress reports to the Seagreen Ecological Clerk of Works (ECoW) who will review and approve consent plans and will oversee and monitor compliance with consent conditions. The ECoW will be an independent party and will provide regular reporting on compliance monitoring, good

practice and mitigation measures, both to Seagreen's Compliance Manager and to MS-LOT throughout pre-construction and construction phases of the Seagreen Project. The role of the Seagreen Compliance Manager is to oversee compliance monitoring across the project.

Full details of the Construction Environmental Management Framework, including environmental compliance, monitoring and reporting, are provided in the **Construction Environmental Management Plan (Offshore CEMP) LF000009-CST-OF-PLN-0014**.

1.6 Updates and Amendments

Updates to this MPCP might be required, for example, due to changes to the proposed construction methodology (that require additional management or mitigation measures, or changes to measures already proposed), new environmental sensitivities identified by monitoring prior to construction, or following construction, emerging guidance, or new legislative requirements.

The Change Management Process for any updates required to the MPCP, including resubmission of consent plans for approval, is outlined in **Appendix B**.

2. Scope and Objectives

This MPCP has been prepared to address the specific requirements of the relevant conditions attached to the Section 36 (S36) consents and Marine Licences (collectively referred to as ‘the consents’) issued to Seagreen Wind Energy Limited (Seagreen), and applies to all construction as required to be undertaken before the Final Commissioning of the Works.

The overall objective of this MPCP is to outline procedures to safeguard the marine environment and respond to an accidental pollution event during the construction of the Seagreen Project.

The MPCP has the following primary functions;

- i. to provide a risk assessment of the potential sources of pollution
- ii. to provide spill response procedures and actions, check sheets and industry example proformas

All Seagreen personnel and Seagreen Contractors (including their Sub-Contractors) involved in the Seagreen Project must comply, as a minimum, with the MPCP.

The Seagreen MPCP will apply to all Seagreen Contractor and subcontractor vessels and all Seagreen OWF and OTA assets and their structures. Each Contractor will produce their own MPCP which will comply and will bridge the Seagreen MPCP (which applies within the Seagreen project site boundary) and their own spill response arrangements. Each Contractor MPCP will also discuss their spill response arrangements when out with the project site boundary but ‘on-hire’ to Seagreen.

2.1 Structure of this Document

Section		Summary of Content
1	Introduction	Background to consent requirements and overview of the MPCP scope and structure; and identifies those other Consent Plans relevant to the environmental management process and the linkage between those plans and the MPCP.
2	Scope and Objectives of the MPCP	Sets out the scope and objectives of the MPCP.
3	Interfacing Oil Pollution Contingency Plans and Organisations	Overview of relevant interfacing oil pollution contingency plans
PART 1 – RISK ASSESSMENT		
4	Sources of Pollution and Risk Assessment	Provides a list of the potential sources of pollution, the level of risk and steps taken to mitigate against a potential pollution event.
PART 2 – RESPONSE PROCEDURE		
5	Pollution Response Procedures	Specific pollution response procedures and roles of key personnel including reporting procedures in the event of a pollution incident.

6	Seagreen Documents and Consent Plans	Reference to other Seagreen Documents and Consent Plans
Appendices		
A	Glossary and List of Definitions	
B	Change Process	Process to follow for updates and amendments to the MPCP.
C	Contacts Directory	Provides a template to be populated with contact details for those individuals and organisations with pollution reporting and response responsibilities.

3. Interfacing Oil Pollution Contingency Plans and Organisations

The OTA Marine Licence Condition 3.2.12 requires that:

The MPCP must take into account existing plans for all operations, including offshore installations that may have an influence on the MPCP.

The following sections set out how Seagreen's MPCP will interface with existing oil pollution contingency plans. Within the UK there is an adopted structure and procedure for response to marine pollution events, which clearly defines the roles and responsibilities of industry, the UK Government and Local Authorities.

In the event of a spill originating from Development activity, the Marine Coordinator will ensure that other operators and/or vessels in the vicinity that may be impacted, are notified as per the Seagreen **Marine Coordination Procedure - LF000009-ENG-OM-PRO-0001**. Where a spill originating from the Development drifts towards and/or reaches neighbouring installations and/or vessels, this may instigate activation of their own pollution contingency plans. Where appropriate Seagreen will work to implement a co-ordinated response and share pollution response resources.

Other pollution contingency plans, which may interact with this MPCP in the event of a spill originating from the Development, are identified below.

3.1 Industry Plans

This MPCP interfaces with the following industry standard plans:

- Shipboard Oil Pollution Emergency Plans (SOPEPs)/equivalent vessel-specific spill plan for each vessel;
- Port and Harbour Oil Spill Contingency Plans (OSCPs); and
- Bridging / interface documents between Seagreen and its third-party contractors

3.2 Other installations and operators must be notified in the event of a spill

Other installations must be notified in the event of a spill and those in the vicinity of the Seagreen Development will be updated.

Additionally, separate developers to Seagreen - Inch Cape Offshore Limited and EDF Renewables have consents to construct and operate the Inch Cape offshore windfarm (located in the Firth of Forth) and NnG offshore wind farm (located off the Angus coastline) respectively. Should these wind farms be constructed, they will have their own MPCP(s).

The Marine Coordination Centre will be located at the Port of Montrose and will be the base for a number of crew transfer vessels during construction and O&M phases of the Seagreen Development. The Port of Montrose has an OSCP to cover incidents within the port and harbour. The Port's OSCP would take priority over the Seagreen MPCP in the event of a major spill in the harbour and port, in terms of response to an incident.

In addition, a construction laydown port to marshal the wind turbine components and to load the wind turbines onto the installation vessel will be utilised for deep berthing and grout loading during foundation installation. Ports utilised during Construction and O&M will have their own OSCP to cover incidents within the port and harbour. The Port's OSCP would take priority over the Seagreen MPCP in the event of a major spill in the harbour and port, in terms of response to an incident. The locations will be updated.

Other ports may be used by a variety of construction vessels and/or other construction activities within the Firth of Forth, along the east coast of Scotland and further afield in Europe. Similarly, each of these ports would be expected to have its own OSCP to cover incidents within the port and harbour. The Port's OSCP would take priority over the Seagreen MPCP in the event of a major spill in the harbour and port, in terms of response to an incident.

Assuming pollution from an unidentifiable source is drifting towards the wind farm, Seagreen shall comply fully with any instructions from the MCA or other relevant authority, in order to facilitate an appropriate pollution response. This may include shut-down of the wind farm to allow mechanical recovery of the pollution or dispersant application.

3.3 Local Authority Plans

In the event of actual or threatened shoreline impact, the oil spill contingency plan administered by the relevant local authority (e.g. Angus, Forth of Firth and Aberdeenshire) will be implemented.

3.4 National Contingency Plan

In the event of a significant oil spill incident, which calls for a Tier 2 or Tier 3 response (see PART 1, Section 4.1 for Tier definition), the MCA may decide to implement the National Contingency Plan (NCP). In such an event, the MCA will take control of at-sea counter pollution measures and establish a Marine Response Centre (MRC). Should there be a formal hand-over of responsibility to MCA for dealing with the incident, the relevant Contractor's oil spill response resources and facilities will be made available to the MCA.

In the event that the NCP is implemented then the Secretary of State's Representative (SOSREP) will assume full command of the spill response operation. The role of the SOSREP is to represent the Secretaries of State for Transport and Department of Business, Energy and Industrial Strategy by removing or reducing the risk to persons, property and the UK environment arising from accidents involving ships, fixed or floating platforms or sub-sea infrastructure within UK waters, within the remainder of the Exclusive Economic Zone (EEZ)/UK Pollution Control Zone (UK PCZ) and on the UK Continental Shelf.

The powers of intervention with which SOSREP is invested provide that the SOSREP can direct a person to take, or refrain from taking, any action of any kind whatsoever. Indeed, if SOSREP is not convinced that the person directed can, or will, take the action then they may cause the action to be taken themselves - even if this includes the total destruction of a vessel. The legislation also creates criminal offences for non-compliance with a Direction. It should be noted that Directions must be given to specified persons who are those being in charge of a vessel or a port or harbour authority. The SOSREP has the decisive voice in the decision-making process in a marine salvage operation that involves the threat of significant pollution. The Director / Deputy Director of Operations will act as a stand-in in the event of SOSREP being unavailable.

Once notified the Counter Pollution and Salvage (CPS) Branch of the MCA will determine the need to establish a MRC. The MRC will consider and implement the most appropriate means to contain, disperse and remove pollutants from the scene in the event of a national (Tier 3 and possible Tier 2) incident. The SOSREP will also determine the need for a Salvage Control Unit (SCU) to monitor salvage activity and ensure that actions being taken do not have an adverse effect on safety and the environment and the need for an Operations Control Unit (OCU) to monitor response actions.

The MCA will determine whether it is necessary to convene the Scottish Standing Environment Group (SEG), to provide advice on public health and environmental issues that require a regional or national response. The scope of the SEG functions will be directly proportional to the scale and nature of the incident, its geographical location, extent, severity, pollutant involved, potential hazard to human health and environmental sensitivities. The scale of the incident and response and their constituent phases are likely to evolve over time and the functions of the SEG will need to be graduated to meet changing requirements, escalating or diminishing in the input to each phase over time (MCA Stop notice 2/15).

The core members that will comprise the SEG will include representatives from Marine Scotland, who will chair the group, Scottish Environment Protection Agency (SEPA), Joint Nature Conservation Committee (JNCC), Scottish Natural Heritage (SNH) and NHS Scotland.

Additional groups may be established where pollution threatens the coastline including the Strategic Coordinating Group (STC), to manage the onshore response strategy and the Tactical Coordinating Group (TCG), to develop an onshore operational response plan. A Scientific and Technical Advisory Committee (STAC) may be established, to provide advice to the STC and TCG. The STAC will execute a similar function as the SEG. The STAC will work closely with the SEG and in some circumstances may merge fully to provide consistent advice in the event of a Tier 2 or 3 incident.

PART 1 – RISK ASSESSMENT

4. Pollution Sources and Risk Assessment

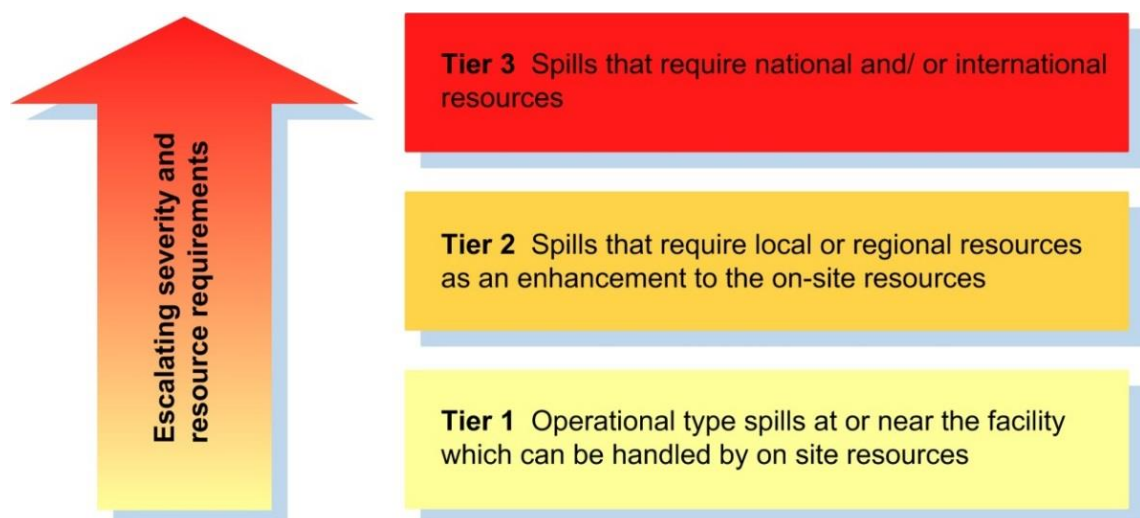
4.1 Tier Classification

A brief risk assessment of potential spill scenarios and proposed mitigation measures, to minimise or eliminate the risks has been carried out for the Development (construction and operational phase as appropriate) and is presented in Table 4.1. The risk assessment will be updated (if necessary) to ensure that the worst-case spill scenario is assessed. The risk assessment will also be reviewed and, if necessary, be updated following completion of the construction phase, to ensure that it remains relevant for the operational phase.

For general oil spill response, it is common to divide levels of response into three tiers, according to the severity of the spill and the resources required to combat it. The three tiers are commonly defined as follows (Figure 4.1):

- Tier 1 response is that which is immediately available on site, geared for the most frequently anticipated oil spill;
- Tier 2 response is for less frequently anticipated oil spills of larger size and for which external resources on a regional level will be required to assist in monitoring and clean-up; and
- Tier 3 response is in place for the very rarely anticipated oil spill of major proportions and which will possibly require national and international resources to assist in protecting vulnerable areas and in the clean-up.

Figure 4.1 – Tier Definition



The conventional view of a Tier 3 scenario is one involving an exceptionally large volume of spilled oil, for example, from a major ship-sourced accident, an oil well blowout, or other such rare but highly significant event. However, a Tier 3 response may also be required for more modest volumes, perhaps where Tier 2 arrangements may be largely absent or overwhelmed, highly sensitive areas threatened, or highly-specialised strategies being required that are not available locally.

The Seagreen-specific risk assessment in Table 4.1 shows that small operational type spills (e.g., Tier 1 category) are the most likely. However, the risk assessment cannot predict with certainty the Tier level outcome of any spill, and under a worst-case spill scenario, it is possible (although considered highly unlikely) that a Tier 2 or Tier 3 response could be required.

The main source of hydrocarbons associated with the Development will be Marine Gas Oil (MGO) or Intermediate Fuel Oil (IFO) used to fuel construction and O&M vessels. The quantities of MGO and IFO will be limited to the bunkering capabilities of the vessels. The potential worst-case spill scenario associated with the Development would be a complete loss of fuel inventory from two large vessels as a result of collision, or where a passing vessel collides with a wind farm vessel or structure.

Once spilled in the marine environment, oil immediately begins to undergo weathering, a term used to describe many natural, physical, chemical and biological changes. The changes that the oil undergoes will often influence the effectiveness of response options. Prevailing meteorological and oceanographic conditions, as well as the type of oil spilled, will determine its ultimate fate.

4.2 Potential Spill Scenarios and Control Measures For The Development

Table 4.1 below sets out potential spill scenarios and control measures for the Seagreen Project.

Table 4.1 - Potential spill scenarios and control measures for the Development

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
Hydrocarbons Intermediate Fuel Oil (IFO) Marine Gas Oil (MGO) (Diesel)	Vessel refuelling Loss of fuel during vessel to vessel refuelling at sea or refuelling at port.	Seagreen and/or contractors will undertake operationally necessary refuelling at sea as required, to fuel vessels that are extremely restricted in their capability to leave station to take on fuel, such as jack ups. Preparation and review of task-specific risk assessments, method statements and fuel transfer planning tools and checklists. Refuelling of vessels or equipment offshore shall, where practicable, only commence during daylight and in good weather conditions.	Low	Tier 2
	Equipment refuelling Loss of fuel during refuelling of equipment (on vessel or on turbine/offshore substation platform (OSP)).	Refuelling operations will be planned in advance. Fuel transfer operations will be carefully conducted under the supervision by an appointed responsible person on board (e.g. Chief Engineer) and in accordance with each vessel's stipulated procedure and checklist. A bunker plan shall be developed and posted on the Bridge and in the Machinery Control Room.	Low	Tier 1

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
		<p>Before fuel transfer starts a meeting will be held with all ship staff involved in the operation and the following subjects should be discussed, as a minimum:</p> <ul style="list-style-type: none"> ▪ Bunker plan, including any anticipating changes; ▪ Risk assessment; ▪ Individual roles and responsibilities in the process; ▪ Emergency situations; and ▪ Bunkering Checklists. <p>Only hoses fitted with non-return valves shall be used for the offshore transfer of fuel or other fluids.</p> <p>Vessels over 400 GRT will carry a SOPEP in compliance with The Merchant Shipping (Prevention of Oil Pollution) Regulations 1996.</p> <p>Vessels over 400 GRT will carry an Oil Record Book in compliance with The Merchant Shipping (Prevention of Oil Pollution) Regulations 1996. In the Oil Record Book following particulars are entered:</p> <ul style="list-style-type: none"> ▪ Details of fuel and oil bunker operations; ▪ Disposal of sludge (oil residues); ▪ Discharge overboard or disposal otherwise of machinery space bilge water; ▪ Condition of oil discharge monitoring and control systems; ▪ Accidental or other exceptional discharges of oil; and ▪ Additional operational procedures and general remarks. <p>Appropriate training of personnel and supervision of activity.</p> <p>Compliance with conditions related to vessel refuelling set out in Merchant Shipping Notice (MSN) 1829 "Ship to Ship Transfer Regulations 2010/2012". This will include the Contractor applying for offshore fuel bunkering exemption from MCA. MCA requirements for successful approval of this application will include providing details on bunker plan, procedures, approval bunker hose inspection and maintenance arrangements, engagement offshore response subcontractor engagement and details on MCA certified training courses completed (or to be completed) by Contractor Vessel Master and SOPEP teams. MCA will also wish details of fuel supplier(s) to be used and details on their relevant processes. Certain conditions will then be set by MCA (including prior notification of fuel bunkering activities) as conditions of this exemption which the Contractor is required to follow.</p> <p>A visual lookout will be made at all times during fuel transfer operations to verify hose integrity throughout the transfer and in order to spot any leaks immediately.</p> <p>All storage tanks and/or areas shall be banded to at least 110% of the total oil storage inventory volume.</p> <p>Personnel shall be trained in spill prevention awareness, and in the use of spill kits.</p>		

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
		<p>Spill kits shall be readily available for mopping up any minor spills.</p> <p>Regular inspection and maintenance of equipment.</p> <p>The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc., special oil gutter ways etc. will be regularly inspected and drained or cleaned.</p> <p>Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.</p>		
	Vessel to vessel collision Loss of fuel from collision between two vessels.	All vessels will comply with the measures set out in the Navigational Safety Plan (NSP) (LF000005-PLN-128) to prevent vessel to vessel collision and vessel to structure collision. Vessels and Marine Coordinators will also comply with measures set out in the Seagreen Marine Coordination Procedure - LF000009-ENG-OM-PRO-0001 to prevent collisions.	Very low	Tier 2 (possible but unlikely Tier 3)
	Vessel to structure collision Loss of fuel from collision between vessel and structure (e.g., wind turbine).		Very low	Tier 2 (possible but unlikely Tier 3)
	Vessel stranding/grounding Loss of fuel due to vessel stranding/grounding.	All vessels will comply with the measures set out in the Navigational Safety Plan (NSP) (LF000009-PLN-0007) to prevent vessel stranding / grounding.	Very low	Tier 2 (possible but unlikely Tier 3)
	Failure of plant or equipment Release of fuel due to failure of plant or equipment.	<p>All equipment shall be operated and maintained in good order and in accordance with legal requirements.</p> <p>All plant and equipment shall only be operated by adequately trained and competent personnel.</p> <p>All storage tanks and/or areas shall be bunded to at least 110% of the total oil storage inventory volume.</p> <p>The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc., special oil gutter ways etc. will be regularly inspected and drained or cleaned.</p> <p>Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.</p>	Low	Tier 1
	Spillage during use of equipment Small spills during equipment operation.	<p>Preparation and review of task-specific risk assessments and method statements.</p> <p>Personnel shall be trained in spill prevention awareness, and in the use of spill kits.</p> <p>Spill kits shall be readily available for mopping up any minor spills.</p>	Low	Tier 1

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
		<p>The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc., special oil gutter ways etc. will be regularly inspected and drained or cleaned.</p> <p>Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.</p>		
Lubricating Oil	Incident Loss of lubricating oil from collision between two vessels, or allision between vessel and structure, or stranding/grounding of vessel.	All vessels will comply with the measures set out in the Navigational Safety Plan (NSP) (LF000009-PLN-0007) to prevent vessel to vessel collision, vessel to structure allision and vessel stranding / grounding. Vessels and Marine Coordinators will also comply with measures set out in the Seagreen Marine Coordination Procedure - LF000009-ENG-OM-PRO-0001 to prevent collisions.	Very low	Tier 2
	Leakage within WTGs Leakage of lubricating gear oil or grease within nacelle.	<p>All equipment shall be operated and maintained in good order and in accordance with legal requirements.</p> <p>The inventory of lubricating gear oil is limited within the turbine nacelle as there is no conventional gear box (direct drive).</p> <p>Turbine sensors will enable early detection of loss of fluid and leaks.</p> <p>There is a banded area within the nacelle to collect lubricating oil in the unlikely event of a leak.</p> <p>Gear oil seals shall be routinely checked during planned maintenance programmes.</p>	Low	Tier 1
	Leakage within OSPs Leakage of transformers.	<p>All equipment shall be operated and maintained in good order and in accordance with legal requirements.</p> <p>Transformer oil seals shall be routinely checked during planned maintenance programmes.</p>	Low	Tier 1
	Spillage during use of equipment Small spills during equipment operation.	<p>Preparation and review of task-specific risk assessments and method statements.</p> <p>Personnel shall be trained in spill prevention awareness, and in the use of spill kits.</p> <p>Spill kits shall be readily available for mopping up any minor spills.</p> <p>Fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.</p>	Low	Tier 1
	Failure of plant or equipment Release of lubricating oil due to failure of plant or equipment.	<p>All equipment shall be operated and maintained in good order and in accordance with legal requirements.</p> <p>All plant and equipment shall only be operated by adequately trained and competent personnel.</p>	Low	Tier 1

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
Hydraulic Oil	Incident Loss of hydraulic oil from collision between two vessels, or collision between vessel and structure, or stranding/grounding of vessel.	All vessels will comply with the measures set out in the Navigational Safety Plan (NSP) (LF000009-PLN-0007) to prevent vessel to vessel collision, vessel to structure allisions and vessel stranding / grounding. Vessels and Marine Coordinators will also comply with measures set out in the Seagreen Marine Coordination Procedure - LF000009-ENG-OM-PRO-0001 to prevent collisions.	Very low	Tier 1
	Leakage within WTGs	All equipment shall be operated and maintained in good order and in accordance with legal requirements. The inventory of hydraulic oil is limited within the turbine nacelle as there is no conventional gear box (direct drive). Turbine sensors will enable early detection of loss of fluid and leaks. There is a bunded area within the nacelle to collect lubricating oil in the unlikely event of a leak. Oil seals shall be routinely checked during planned maintenance programmes.	Low	Tier 1
	Failure of plant or equipment Release of hydraulic oil due to failure of plant or equipment, e.g., hydraulic hoses.	All equipment shall be operated and maintained in good order and in accordance with legal requirements. All plant and equipment shall only be operated by adequately trained and competent personnel. All storage tanks and/or areas shall be bunded to at least 110% of the total oil storage inventory volume.	Low	Tier 1
	Spillage during use of equipment Small spills during operation.	Preparation and review of task-specific risk assessments and method statements. Personnel shall be trained in spill prevention awareness, and in the use of spill kits. Spill kits shall be readily available for mopping up any minor spills. Fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1
Chemicals	Incident Loss of chemical load from vessel collision/allision, or stranding/grounding of vessel.	All vessels will comply with the measures set out in the Navigational Safety Plan (NSP) (LF000009-PLN-0007) to prevent vessel to vessel collision, vessel to structure allisions and vessel stranding / grounding. Chemicals will, where relevant, be selected, stored and managed in accordance with the Offshore Chemical Regulations 2002 (as amended). Hydraulic oil/incident - vessels and Marine Coordinators will also comply with measures set out in the Seagreen Marine Coordination Procedure - LF000009-ENG-OM-PRO-0001 to prevent collisions.	Very low	Tier 1

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
	Leakage within WTG Leakage of coolant or transformer fluid within nacelle.	All equipment shall be operated and maintained in good order and in accordance with legal requirements. Turbine sensors will enable early detection of loss of fluid and leaks. There is a banded area within the nacelle to collect lubricating oil in the unlikely event of a leak. Equipment including hoses, pipes and seals shall be routinely checked during planned maintenance programmes. Chemicals will, where relevant, be selected, stored and managed in accordance with the Offshore Chemical Regulations 2002 (as amended).	Low	Tier 1
	Spillage during use Spillage of paints, paint thinners, solvents, cleaning fluids etc during use.	Preparation and review of task-specific risk assessments and method statements. Personnel shall be trained in the correct handling and use of chemicals. Personnel shall be trained in spill prevention awareness, and in the use of spill kits. Spill kits shall be readily available for mopping up any minor spills. All hazardous substances shall have a safety data sheet (SDS) which is intended to provide procedures for handling or working with that substance in a safe manner. The handling and use of chemicals and hazardous substances shall be in compliance with the information on the SDS. COSHH assessments should be conducted for Development specific hazardous substances. Segregated storage facilities will be used to control the separation of hazardous substances. Chemicals will, where relevant, be selected, stored and managed in accordance with the Offshore Chemical Regulations 2002 (as amended).	Low	Tier 1

PART 2 - POLLUTION INCIDENT RESPONSE PROCEDURE

5. Pollution Incident Response Procedure

5.1 Introduction

This section sets out the procedures to be adhered to in the event of a marine pollution incident.

Seagreen require that any spill (actual or probable) into the marine environment, no matter how small, and no matter whether it arises from Seagreen activities or not, is responded to, following the procedures set out below, whilst a Contractor is working on the Seagreen Project.

Priority in the event of a spill is to take measures to ensure the safety of personnel and the offshore installations and vessels, and to prevent escalation of the incident.

Where a spillage is part of a wider emergency, such as fire or explosion, reference should also be made to the Seagreen **Emergency Response Cooperation Plan (ERCoP) LF000009-CST-MA-PLN-0001**) and **Emergency Response Plan LF000009-CST-MA-PLN-0006**).

5.2 Response and Notification Overview

The processes set out below should be followed in the event of a marine pollution (hydrocarbon or chemical) incident where a spill originates from a vessel, from vessel related activity, or from a Contractor owned asset prior to transfer of ownership to Seagreen, during construction or maintenance of offshore installations.

When a spill is observed, it will be reported to the Contractor Vessel Master.

The Contractor Vessel Master will report the spill as soon as it is safe to do so, to Aberdeen Coastguard Operations Centre (CGOC) via phone, and then to the Marine Coordinator via phone. Verbal notification should be followed up when practicable with the submission by the vessel master of a Marine Pollution Report (POLREP) via email (or fax) to the CGOC and the Marine Coordinator, who in turn will notify Seagreen personnel (Environment Manager or SHE Manager).

The Contractor responsible for the vessel from which the spill has originated will engage the vessel SOPEP and assume primacy for the incident ensuring ongoing reporting on spill status, as necessary, and initiating response or clean-up operations as required. The relevant Contractor, as the primary responder, will request support from a specialist spill response contractor as required. The Marine Coordinator will provide a supporting role and assist with communication throughout an incident.

In the event that a regional or national (Tier 2 or 3) response is required, the MCA may take charge of the situation and implement the National Contingency Plan.

The following stages will be observed in managing a marine pollution incident originating from a vessel or vessel related activity, as outlined in Figure 5.1. This is further detailed in Table 5.1 Response Action Plan. This plan has a checklist for the qualified person leading the spill response offshore (i.e. this will be the Contractor Vessel Master). Table 5.1 also clearly signposts the response sections of this document. Further

responsibility details are also provided in Figure 5.2 Overview of Project Offshore Spill Response Primacy and Communications.

Figure 5.1 Marine Pollution Incident Stages (Assuming Contractor Vessel Master Present)

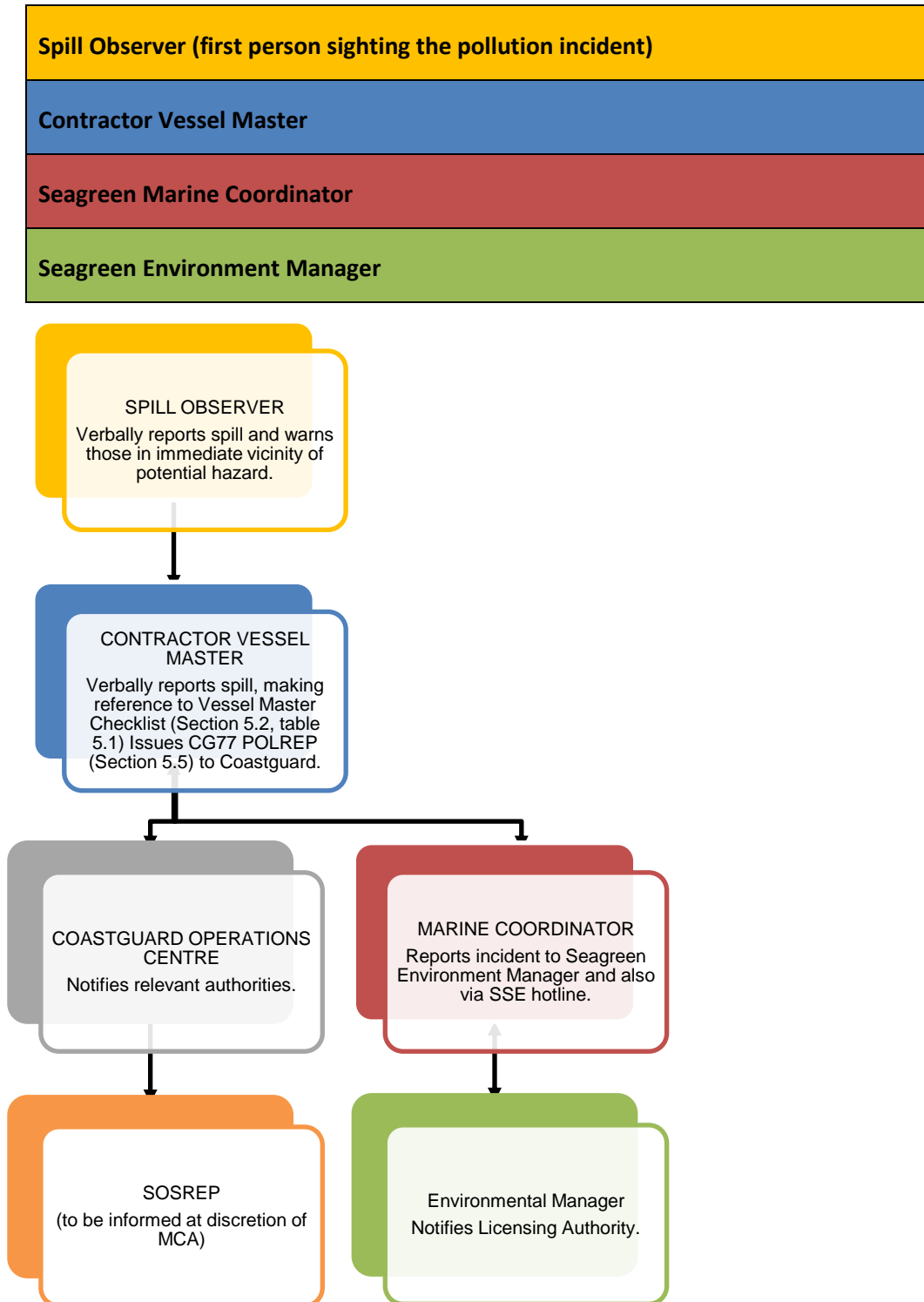






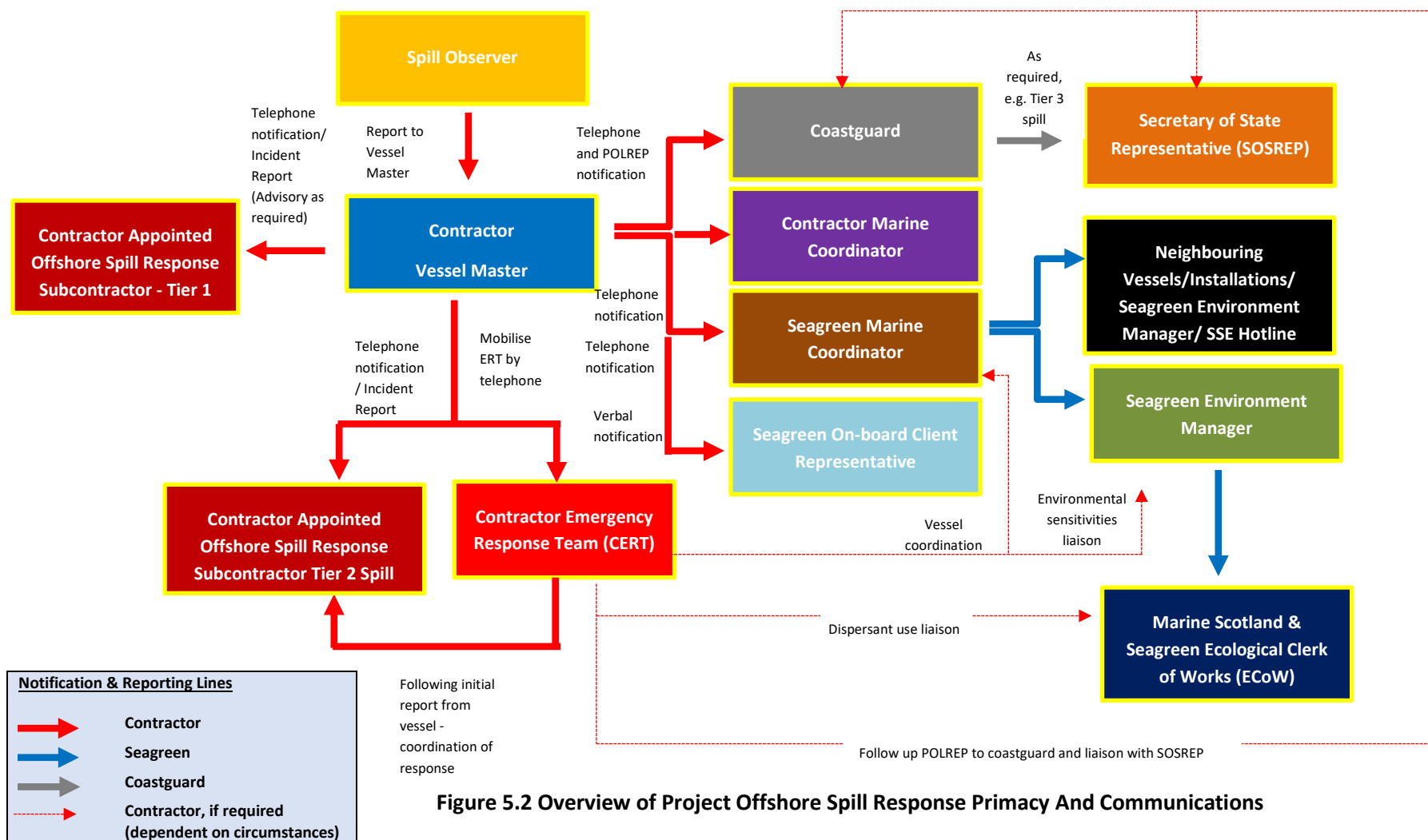
Table 5.1 Response Action Plan

RESPONSE ACTION PLAN OVERVIEW	
Step 1 - Initial Actions	
Time	Vessel Master
0-20	<p>From initial release report:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Establish safety issues. <input type="checkbox"/> Take initial safety actions. <input type="checkbox"/> Take action to stop / isolate release. <input type="checkbox"/> Estimate Release Parameters <input type="checkbox"/> Notify Coastguard <input type="checkbox"/> Notify Seagreen Marine Coordinator <input type="checkbox"/> Notify Contractor Marine Coordinator <input type="checkbox"/> Notify Seagreen on-board Client Representative <input type="checkbox"/> Establish Onshore Support Requirements
Step 2 - Mobilise Resources / Determine Primacy	
Time	Vessel Master
20-40	<ul style="list-style-type: none"> <input type="checkbox"/> Mobilise required teams. <input type="checkbox"/> If necessary, minimise risk to personnel / vessel safety by using dispersant. <input type="checkbox"/> Confirm primacy, roles and responsibilities.
Step 3 - Assess and Quantify	
Time	Vessel Master
40-45	<ul style="list-style-type: none"> <input type="checkbox"/> Assess actual / potential quantity. <input type="checkbox"/> Determine escalation potential.

CONTRACTOR VESSEL MASTER RESPONSE CHECKLIST			
Step 1 - Initial Actions			
Timescale: 0 – 20 minutes (or as soon as reasonably practicable)		Actioned	Page(s)
1.	Receive notification of release: time of spill; possible source of spill; current spill location; oil/chemical type; Estimation of quantity of oil/chemical spilled; and any other relevant information e.g. appearance of oil; escalation potential; weather.	<input type="checkbox"/>	N/A
2.	Record details on the initial incident data collection sheet and initiate a chronological log of events. Refer to section 5.3.	<input type="checkbox"/>	30-31
3.	Assume role of On-scene Commander (OSC). During combined operations confirm the role of On-Scene Commander (OSC) with other Vessel Master(s). Refer to Figure 5.2 Overview of Response Primacy and Communications.	<input type="checkbox"/>	27
4.	Muster as necessary and suspend all work permits if required. Maintain safety of personnel; the installation/vessel and any vessel within 500 metres.	<input type="checkbox"/>	ERP
5.	If safe to do so activate Vessel Shipboard Oil Pollution Emergency Plan, SOPEP - 'Steps to Control Discharge' section.	<input type="checkbox"/>	SOPEP
6.	Notify Coastguard. Refer to section 5.4.1. If in Port/Harbour, contact Port/Harbour support - refer to section 5.4.4.	<input type="checkbox"/>	32&34
7.	Notify Seagreen Marine Coordinator. Refer to section 5.4.1. The Seagreen Marine Co-coordinator is responsible for notifying Seagreen Manager and also Seagreen management, via emergency phone line.	<input type="checkbox"/>	32
8.	Notify Contractor Marine Coordinator and Seagreen on-board Client Representative. Their roles are to support the Vessel Master where possible particularly with Seagreen communications and reporting.	<input type="checkbox"/>	N/A
9.	Notify the Contractor appointed spill response subcontractor. Refer to section 5.4.2. Brief of the situation and need for support.	<input type="checkbox"/>	33
10.	Notify the onshore Contractor Emergency Response Team (CERT), if required (Tier 2/3 incident). If known, specify if release is from a 3rd party source and notify the affected 3rd party. Refer to section 5.4.3. If a Tier 2/3 incident and/or an incident which cannot be brought under control immediately using offshore available resources the CERT must be notified as soon as possible.	<input type="checkbox"/>	33-34
Step 2 - Mobilise Resources / Determine Primacy			
Timescale: 20 – 40 minutes (or as soon as reasonably practicable)		Actioned	Pg.
11.	Mobilise offshore team members to support response.	<input type="checkbox"/>	ERP
12.	Confirm Contractor appointed spill response subcontractor is aware of the incident.	<input type="checkbox"/>	N/A
13.	If personnel / vessel safety is at risk instruct where available dispersant to sprayed (no endorsement from authorities needed under Force Majeure). Notify the CERT as soon as possible. Record use of dispersant using Refer to Refer to section 5.12.	<input type="checkbox"/>	58-59
14.	Confirm primacy, roles and responsibilities with CERT. Refer to Figure 5.2 Overview of Response Primacy and Communications	<input type="checkbox"/>	27
Step 3 - Assess and Quantify			
Timescale: 40 – 45 minutes (or as soon as reasonably practicable)		Actioned	Pg.
15.	If release source is known, check tank volumes / level indicators & quantify per Vessel SOPEP .	<input type="checkbox"/>	SOPEP
16.	If released quantity is unknown request estimate release size from appearance using Refer to Section 5.6.	<input type="checkbox"/>	37-41
17.	If unable to quantify, request surveillance flight through the CERT or utilise an infield crew change helicopter if available.	<input type="checkbox"/>	N/A

RESPONSE ACTION PLAN OVERVIEW	
Step 4 - Company and Regulatory Reporting	
Time	Vessel Master
 45-60	<input type="checkbox"/> Complete and submit formal POLREP ASAP following initial sighting.
Step 5 - Tracking and Sampling	
Time	Vessel Master
 60-70	<input type="checkbox"/> Track release. <input type="checkbox"/> Obtain evidence.
Step 6 - Determine Response	
Time	Vessel Master
 70-100	<input type="checkbox"/> Determine actual / potential tier response level. <input type="checkbox"/> Confirm response co-ordination for tier level. <input type="checkbox"/> Consider response strategy. <input type="checkbox"/> Identify resources required.
Step 7 – Ongoing Response and Stand Down	
Time	Vessel Master
 100 +	<input type="checkbox"/> Continue to monitor and review response, weather and impact to environment. <input type="checkbox"/> Keep CERT updated. For Tier 1, establish with coastguard when to stand down. For Tier 2 this decision will be taken by CERT. For Tier 3 by SOSREP. <input type="checkbox"/> Ensure waste streams segregated and containerised appropriately. <input type="checkbox"/> Instigate investigation.

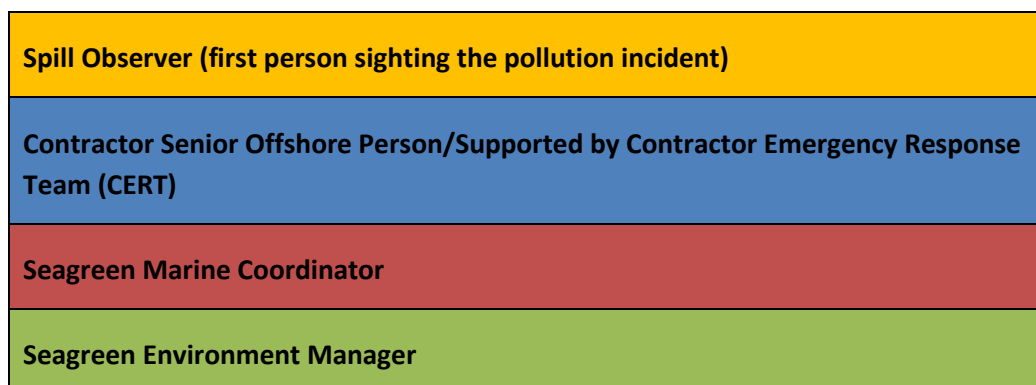
VESSEL MASTER RESPONSE CHECKLIST (CONTINUED)		
Step 4 - Company and Regulatory Reporting		
Timescale: 45 - 60 minutes (or as soon as reasonably practicable)		Actioned Page
18.	Report incident formally reported to Coastguard using the Marine Pollution Report (POLREP) via email (or fax). Refer to section 5.4.1 and section 5.5.	<input type="checkbox"/> 32 ,35& 36
Step 5 – Tracking and Sampling		
Timescale: 45 - 60 minutes (or as soon as reasonably practicable)		Actioned Pg.
19.	Only if safe to do so, task the Contractor appointed spill response subcontractor to track the movement and parameters of the slick. Refer to section 5.7. If unable to track release, request tracking to be done through the CERT. If crew change helicopter is nearby, consider using to provide an indication of general slick size, direction of travel and colour. This will help to advise in Tier 2/3 situation the spill response subcontractor/CERT of likely location where slick will land onshore at coastline. CERT and spill response subcontractor will need to co-ordinate coastline protection and clean-up operations, if safe to do so.	<input type="checkbox"/> 42-43
20.	If safe to do so obtain a minimum of three oil samples, as soon as reasonably practicable. Sampling should not be conducted for Diesel Spills. Refer to section 5.8. Photographs should also be taken of the released oil. Record samples. Arrangements can then be made to send to laboratory.	<input type="checkbox"/> 44-46
Step 6 - Determine Response		
Timescale: 70-100 minutes (or as soon as reasonably practicable)		Actioned Pg.
21.	Identify any obvious environmental and commercial sensitivities e.g. birds on or near slick. Cross reference with environmental data in this plan. Refer to section 5.9. Inform the CERT who will liaise with the Seagreen Environment Manager and/or ECoW.	<input type="checkbox"/> 47-52
22.	If the CERT has mobilised, reconfirm tier level. Refer to section 5.10.	<input type="checkbox"/> 53
23.	Identify appropriate response strategy with the CERT. See Section 5.11. This may include mobilisation of Contractor appointed spill response subcontractor and hired spill to sea response equipment.	<input type="checkbox"/> 54-57
24.	Monitor and record any changes to the appearance and / or quantity on the released oil. Refer to section 5.7. Report to the CERT.	<input type="checkbox"/> 42-43
Step 7 – Ongoing Response and Stand Down		
Timescale: 100+ minutes (or as soon as reasonably practicable)		Actioned Pg.
25.	Continue tracking release using infield additional resources. Refer to section 5.7.	<input type="checkbox"/> 42-43
26.	Support tier 2/3 resources arriving on-site. Maintain proximity primacy protocols.	<input type="checkbox"/> N/A
27.	If aerial surveillance aircraft is mobilised, liaise with aircraft when in area and acquire interim report – update the CERT.	<input type="checkbox"/> N/A
28.	Review previously submitted POLREP and Coastguard communications to establish requirement for any significant updates. Update via offshore team or onshore CERT as appropriate.	<input type="checkbox"/> N/A
29.	If a Tier 1 release only, establish with Coastguard, the point at which response measures are no longer considered effective and the threat to the environment has been reduced to as low as possible. Acquire clear facts that support the intention to cease response operations. If a Tier 2 release, the decision to stand down will come from CERT in conjunction with spill response subcontractor, Coastguard and relevant vessel. For Tier 3, the decision to stand down will come from Secretary of State Representative (SOSREP).	<input type="checkbox"/> N/A
30.	Ensure waste streams are segregated and containerised appropriately, e.g. as hazardous waste.	<input type="checkbox"/> N/A
31.	If safe to do so, commence investigation: - Obtain photographs/videos/drawings etc. of incident and witness statements.	<input type="checkbox"/> N/A

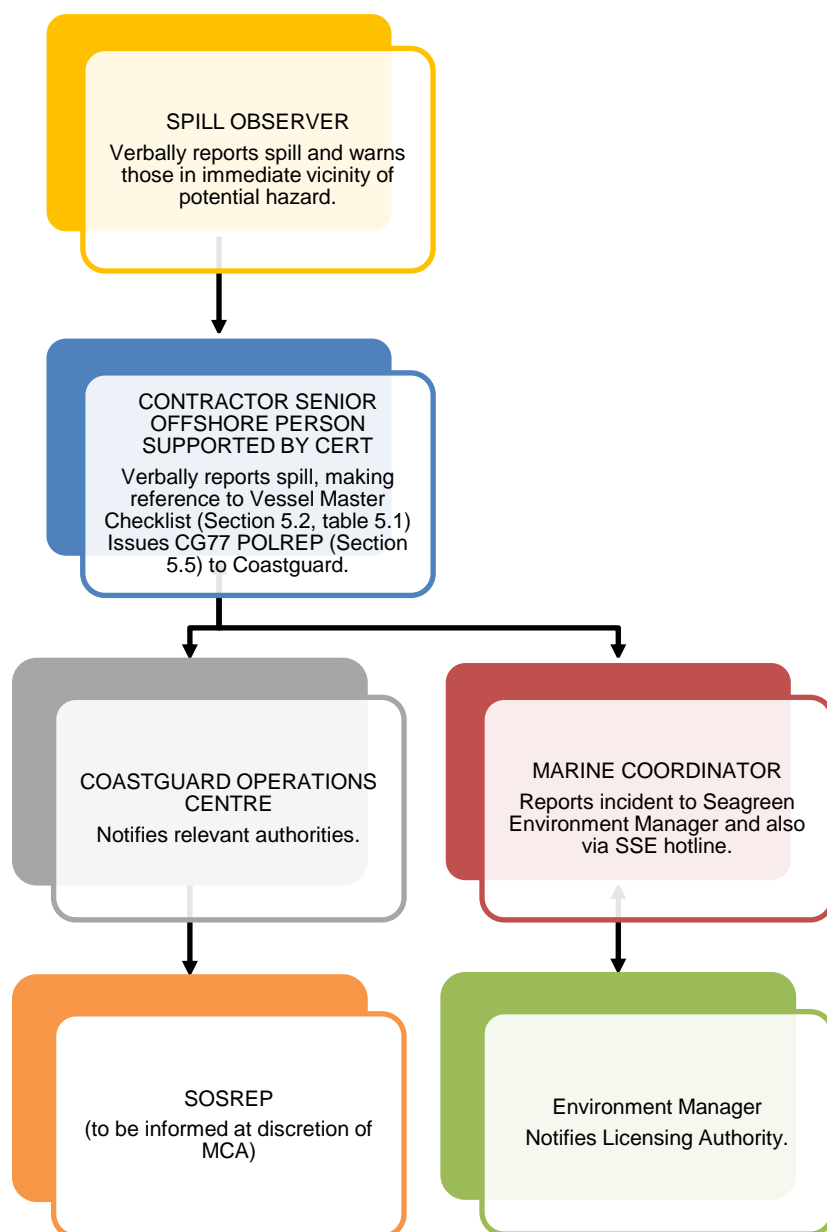


In terms of the highest risks of spills (particularly the risk of Tier 2 and Tier 3 incidents on the project) Seagreen has anticipated (from risk assessment in section 4) this would most likely involve Contractor Vessel(s). Therefore, management of incidents offshore from a primacy perspective would revert to the relevant Contractor Vessel Master(s). There is still a risk, however, that Tier 1 spills could occur from offshore installations where a Contractor Vessel Master(s) is not present offshore. Where this is the case, the following process outlined in figure 5.3 should be conducted.

In such situations where there is an absence of the Contractor Vessel Master, Seagreen requires the onshore Contractor Emergency Response Team (CERT), to play an enhanced role to support its most senior offshore person located offshore, to ensure the correct notifications and updates are provided to Seagreen and the Coastguard for Tier 1 spills. Whilst Tier 1 spills can generally be managed by a Contractor Vessel Master without the need of CERT assistance, unless they escalate to Tier 2 and Tier 3 spills, where a Contractor Vessel Master is not present all Tier spills 1,2 and 3 must be supported by the onshore CERT.

Figure 5.3 Marine Pollution Incident Stages (Assuming Contractor Vessel Master Not Present)





5.3 Initial Incident Data Collection Sheet

The initial incident data collection sheet is to be completed by the Vessel Master on receipt of initial notification of a release and can be used as a reference for notifications and when completing the POLREP. Table 5.2 provides a proposed template produced by Seagreen. Each Contractor MPCP must include an incident data collection sheet aligned with this template.

A copy of the initial incident data collection sheet should always be retained for potential investigative purposes.

For potential source release checklist, refer to vessel SOPEP 'Steps to Control Discharge' section.

Table 5.2 Initial Incident Data Collection Sheet

Vessel Information						
Date / time of call			Company			
Name of caller			Position			
Contact number			Alt. contact number			
Vessel name			Field Name			
Location of release	Latitude					
	Longitude					
Date and time of incident						
What has been released to sea?	diesel	intermediate	chemical	crude	Other:	
Quantity released?			tonnes			m ³
Is release on-going?	yes	no				
Distance and direction from nearest land (e.g. 120 miles East of Aberdeen)	miles					
Distance and direction from nearest median line (e.g. 10 miles West Norwegian median)	miles					
Water depth	metres					
Incident Information						
Confirm date and time of incident			POB			
Incident details: what has happened what is current situation what initial actions have been taken						
Any casualties? (be aware of sensitive information)			Are any SAR activities on-going?			
Is caller at scene of incident? (if not, where is information sourced)						

Is there damage to vessel? (if yes provide details)			
Have / will POB be down-manned? (if so, how many)			
Have works been fully or partially shut down and / or is there an impact on other vessels/installations?			
Confirm what has been released to sea (diesel, intermediate, crude, chemical etc)			
Confirm quantity currently released (how has this been determined)		tonnes	m ³
Confirm if release is on-going (if yes, what is the release rate)			
Worst case spill potential (max inventory, max flow rate)			
Pollution appearance (rainbow, sheen, etc.)			
Dimensions of visible spill (length, width and coverage)			
Shoreline impact likely (if yes, where and when)			
Is pollution likely to reach median line (if yes, where and when)			
Nearest Installations (have they been notified)			
Wind speed		Wind direction	
Sea state		Wave height	
Response Information			
SOPEP been activated			
Has the Contractor appointed spill response subcontractor and onshore Contractor emergency response team been mobilised (if so where and when)			
Has/will aerial surveillance been mobilised (if yes, ETA to scene. If not, how is pollution being monitored)			
What other response resource has/will be mobilised to assist (ROV, DSV, etc.). Provide ETA where possible.			
Has POLREP been submitted			
Have samples been taken, have reference samples been taken, where are samples being sent for analysis			
Who informed	Coastguard	Seagreen MCC	Other please list:
Other Information			
Agreed time to receive next update and/ or any additional information			








5.4 Notifications

5.4.1 POLREP Notifications

The Pollution Report (POLREP) is a notification reporting document required by HM Coastguard for pollution reporting, the latest template of this document is provided in section 5.5. The following notifications are to be undertaken from offshore; however, in the event that the POLREP cannot be submitted by the Contractor Vessel Master (or if not present by the Contractor Senior Offshore Person), the onshore CERT (as described in section 5.2 above) may be tasked to undertake the submission accordingly. The POLREP template and guidance is in Section 5.5 below and a word copy should also be provided to Contractor Vessel Masters and CERT. In addition to the external reporting, all completed electronic POLREPs should be emailed to the Seagreen Environment Manager and Seagreen ECoW.




In Table 5.3 below, HM Coastguard contact of Aberdeen is provided as the relevant contact for the Seagreen Project site. The Contractor should also detail any other relevant coastguard contacts within their Contractor MPCP if they have vessels transiting to and from other offshore locations 'on-hire' to Seagreen.

Table 5.3 POLREP Notifications

Contact	Notification Method	 Tel No	 Fax No	 E-Mail Address
HM Coastguard Telephone notification ¹		+44 1224 574358 ABERDEEN		
HM Coastguard Submission of POLREP electronically				zone3@hmcg.gov.uk ABERDEEN
HM Coastguard Submission of POLREP by fax if e-mail not available			+44 1224 575920 ABERDEEN	
Seagreen Marine Co-ordination Centre Duty Manager		Contact to be confirmed		

¹ Or dial 999 and ask for the Coastguard. If at sea, proposed to use VHF16, and/or GMDSS systems to make a distress or urgency alert but to be confirmed.

Key:

	E-Mail POLREP		Telephone Immediately
	If e-mail or electronic version of POLREP not available fax.		

The Seagreen Marine Co-ordinator will inform the Seagreen Environment Manager and/or SHE Manager when reporting the marine pollution incident through SSE contact numbers/24-hour line. The Seagreen Environment Manager is responsible for notifying Marine Scotland in the first instance unless delegated to the SHE Manager.

The Seagreen Environment Manager supports the Seagreen Marine Co-ordinator in co-ordinating communication between Seagreen and the relevant Contractor. This ensures Seagreen are aware of Contractor's efforts to respond to the incident. The overall management of the incident to resolution is the responsibility of the relevant Contractor.

The Seagreen Environment Manager will also lead incident investigation if required post resolution on behalf of Seagreen, following the Contractor's internal investigation.

The Seagreen Environment Manager will be required to liaise with the Seagreen SHE Manager on the above responsibilities, where required.

The Seagreen ECoW, as an independent party, is responsible for reporting on the incident response thereafter on behalf of Seagreen, to Marine Scotland for resolution. The Seagreen ECoW will liaise between Seagreen and Marine Scotland as the incident dictates. The EM and ECoW will liaise regularly to ensure regular updates are provided to Marine Scotland.



5.4.2 Contractor Appointed Spill Response Subcontractor

Each Contractor is required to appoint a spill response subcontractor prior to offshore works commencement.

Each Contractor will produce a Contractor Marine Pollution Contingency Plan (Contractor MPCP) for their works that will be compliant to the Seagreen MPCP (LF000009-CST-OF-PLN-0012). The Contractor MPCP will bridge their vessel SOPEPs and the Seagreen MPCP. Within the Contractor MPCP reference will be made to the Contractor appointed spill response subcontractor notification requirements, this should include advisory (for Tier 1 spills) and response (for Tier 2 spills) telephone number contacts, as per the example template in Table 5.4, therefore contact detail will be updated by the Contractor. It is required that the Contractor appointed spill response subcontractor telephone support will be available 24 hours day, all year long.

The Contractor appointed spill response subcontractor may provide Tier 3 advice to SOSREP on the Contractor's behalf. This will be initiated in a Tier 3 incident by the SOSREP.

Table 5.4 Contractor Appointed Spill Response Subcontractor Notification Method




Contact	Notification Method
Tier 1 – Contractor Appointed Spill Response Subcontractor (Advisory)	
Tier 2 – Contractor Appointed Spill Response Subcontractor (Response)	

The Contractor is responsible for providing in the Contractor MPCP a detailed list of all spill response equipment on hire from their spill response subcontractor and where located (e.g. details of port where stored or details onboard which Contractor vessel). Note this is not vessel SOPEP equipment (which is listed on the vessel SOPEP) but additional spill to sea response equipment, to be used in an emergency for the Seagreen Project. Advice on what spill equipment is required should be discussed between the Contractor and their spill response subcontractor.

5.4.3 Contractor Emergency Response Team (CERT)

Each Contractor shall have in place, prior to commencement of works, a Contractor Emergency Response Team (CERT) based onshore which can respond to project emergency situations including spills. Each Contractor will list the telephone details of the CERT mobilisation number and also include relevant members of the team contact numbers including the CERT leader and deputy, as per example template in table 5.5, therefore contact detail will be updated by the Contractor within their Contractor MPCP. The Contractor CERT telephone support will be available 24 hours day, all year long. Each Contractor MPCP must consider logistics of response and reporting across potentially multiple time zones.




Table 5.5 Contractor Emergency Response Team Notification Method

Contact	Notification Method
CERT Mobilisation Number	
CERT Leader	
CERT Deputy	

5.4.4 Port/Harbour Spills contact Port/Harbour Authority

For Port/Harbour Spills the Contractor will contact the relevant Port/Harbour Authority in the first instance and follow all port processes as advised. Each Contractor MPCP are responsible for providing details of all ports/harbour authorities of relevance. The Contractor will provide details in advance of their works of the main ports/harbours authorities anticipated to be used whilst working on the Seagreen project, as per example template in Table 5.6, therefore contact detail will be updated by the Contactor . . All incidents that occur whether in the Seagreen working area or not, must be notified to Seagreen.

Table 5.6 Main Ports/Harbour Authority Notification

Contact	Notification Method	 Tel No
		
		

For further details of additional relevant contacts, see **Appendix C**.

5.5 POLREP Example

Reporting Pollution CG77 - POLREP

INITIAL INCIDENT REPORT

A. Classification: -	
B. Date/Time/Observer: -	
C. Position and Extent of Pollution: -	
D. Tide: - Wind: -	
E. Weather: -	
F. Characteristics of Pollution: -	
G. Source and Cause of Pollution: -	
H. Details of Vessels in area: -	
I. Not Used	
J. Any Photographs or Samples: -	
K. Remedial Action: -	
L. Forecast of oil movement: -	
M. Names of others informed: -	
N. Other relevant information: -	

Guidance is given overleaf on the type of information to be recorded in a CG77 POLREP.

- A. **Classification:** - Select – Doubtful, Probable, Confirmed
- B. **Date/Time/Observer:** - Enter date/time of obs. – state UTC or local time / Enter name or title of observer
- C. **Position and Extent of Pollution:** - by latitude and longitude if possible, state range and bearing from some prominent landmark and estimated amount of pollution, e.g. size of polluted area; number of tonnes of spilled oil; or number of containers, drums etc. lost. When appropriate, give position of observer relative to pollution
- D. **Tide:** - Speed/Direction **Wind:** - Speed/Direction
- E. **Weather:** - Conditions and Sea State
- F. **Characteristics of Pollution:** - give type of pollution, e.g. oil crude or otherwise; packaged or bulk chemicals; garbage. For chemicals, give proper name or United Nations Number, if known. For all, give appearance e.g. liquid; floating solid; liquid oil; semi-liquid sludge; tarry lumps; weathered oil; discoloration of sea; visible vapour etc.
- G. **Source and Cause of Pollution:** - from vessels or other undertaking. If from a vessel, say whether as a result of apparent deliberate discharge or a casualty. If the latter, give a brief description. Where possible, give name, type, size, nationality and Port of Registry of polluting vessel. If vessel is proceeding on its way, give course, speed and destination, if known.
- H. **Details of Vessels in area:** - to be given if the polluter cannot be identified and the spill is considered to be of recent origin.
- I. **Not Used**
- J. **Any Photographs or Samples:** - Give details of any photographs or samples taken.
- K. **Remedial Action:** - Give details of any actions taken, or intended, to deal with spillage.
- L. **Forecast:** - Likely effects of pollution – e.g. arrival on shore and estimated timings.
- M. **Names:** - of others informed apart from addressees to this message.
- N. **Other relevant information:** - e.g. Names of other witnesses or references to other instances of pollution which may point to a source.

5.6 Release Quantification

The release size estimation guide is provided below in tables 5.7, 5.8, 5.9, 5.10 and figure 5.4, in conjunction with the BONN Agreement Oil Appearance Code. Table 5.11 provides details on Manual Calculation of Surface Release Trajectory.

These calculations will be undertaken by the Contractor with support from their appointed spill response subcontractor. Tables 5.7, 5.8 and 5.9 are proposed templates produced by Seagreen, however, each Contractor MPCP will include a release size estimation guide aligned with these templates.

Table 5.7 Release Size Estimation Guide

Release Size Estimation Guide					
If the source / quantity is unknown then a visual estimation can be attained based on the relationship between observed oil colour and its thickness using BONN Agreement Oil Appearance Code . Observations can be taken from vessels, crew change or dedicated aerial surveillance aircraft.					
Step 1:	Total area: Estimate total size of the area as a square or rectangle (in km ²).				
Total Area =	Average Width (km)		X	Average Length in (km)	= km ²
Step 2:	Oil release area: Assess the area affected by the slick in km ² calculated as a % of the total area (e.g. 90% of 20 km ² = 18 km ²).				
Oil Release Area (Estimated) km²					km ²
Step 3:	Calculate area by colour: Estimate the area covered by each colour of oil as a % of area affected in km ² (e.g. 60% Silvery, 40% Metallic = 10.8 km ² & 7.2 km ² respectively)				
Colour	Code	Minimum Thickness (µm)	Maximum Thickness (µm)	Step 3	
				% of Area Affected	Area Covered km ²
Oil Sheen Silvery	1	0.04	0.3		
Oil Sheen Rainbow	2	0.3	5.0		
Oil Sheen Metallic	3	5.0	50		
Discontinuous True Colour	4	50	200		
Continuous True Colour	5	200	>200		
Calculation for Area Covered: This should be calculated for each code to give Area Covered by Colour km² = Area / 100 x % of Area Covered.					

Step 4:

Calculate quantity by colour: Multiply the area covered by each colour (Min and Max) by the appropriate quantity of oil in the table (e.g. 10.8 km² x 0.04 & 0.3 for Silvery & 7.2 km² x 5 & 50 for Metallic).

Colour		Step 3 as above	Step 4	
		Area Covered km ²	Min Volume (m ³)	Max Volume (m ³)
Oil Sheen Silvery				
Oil Sheen Rainbow				
Oil Sheen Metallic				
Discontinuous True Colour				
Continuous True Colour				
Step 5:	Total quantity: Add all the quantity by colour figures to get total quantity of oil / m ³ .			
Total Volume (m ³)		Min Volume (m ³)	Max Volume (m ³)	
Step 6:	Conversion: If necessary you can covert m ³ to tonnes by multiplying total quantity in m ³ by the sspecific ggravity of the released oil.			
Total Volume in tonnes (m ³ x SG)		Min Volume (m ³)	Max Volume (m ³)	


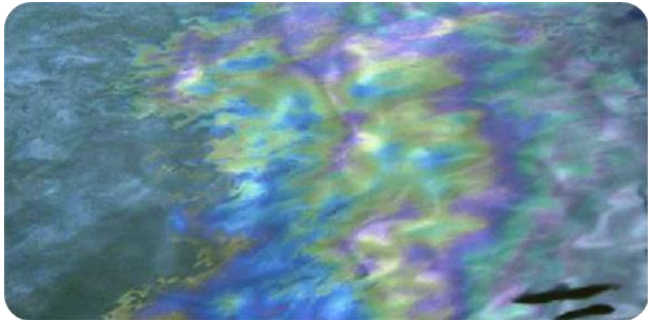


Table 5.8 Release Size Estimation Guide – Worked Example

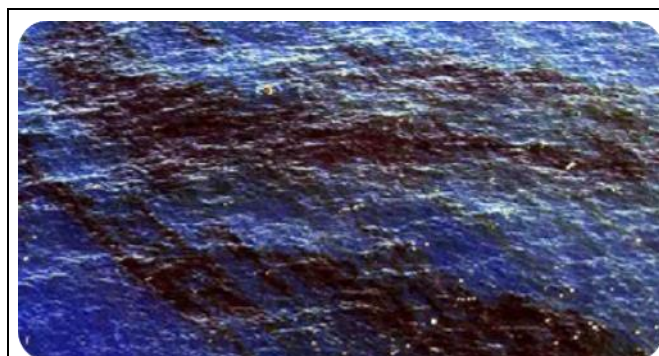
Average Width (km)			5	km	
Average Length in (km)			4	km	
Total Area (Width x Length) km ²			20	km ²	
Oil Release Area (Estimate 90%)			18	km ²	
Colour	Code	Minimum Thickness	Maximum Thickness	% of Area Covered	Area Covered km ²
Oil Sheen Silvery	1	0.04	0.3	60%	10.8 km ²
Oil Sheen Metallic	3	5.0	50	40%	7.2 km ²
Colour	Area Covered km ²		Minimum Volume (m ³)		Maximum Volume (m ³)
Oil Sheen Silvery	10.8 km ²		0.432 m ³		3.24 m ³
Oil Sheen Metallic	7.2 km ²		36 m ³		360 m ³
Total Volume (m ³)			36.432 m ³		363.24 m ³

Table 5.9 Conversion Table

Conversion from	Quantity	Conversion to	Quantity
Kilometres – (km)	1	Nautical Mile – (nm)	0.539
Statute Mile – (mi)	1	Nautical Mile – (nm)	0.868
Barrel (US Petroleum) - (bbl)	1	Litre - (L)	158.987
Barrel (US Petroleum) - (bbl)	1	Cubic metre (m ³)	0.159
Cubic metre - (m ³)	1	Gallon (US Liquid) – (gal)	264.172
Gallon (US Liquid) – (gal)	1	Litre - (L)	3.785
Gallon (UK Liquid) – (gal)	1	Litre - (L)	4.546
metre ³ to tonnes = (m ³ x SG)		tonnes to metre ³ = (t/SG)	

Figure 5.4 BONN Agreement Oil Appearance Code

BONN Agreement Oil Appearance Code	
Image	Description
	<p>Code 1 Oil Sheen Silvery</p> <p>% Of Area Affected _____ %</p>
	<p>Code 2 Oil Sheen Rainbow</p> <p>% Of Area Affected _____ %</p>
	<p>Code 3 Oil Sheen Metallic</p> <p>% Of Area Affected _____ %</p>
	<p>Code 4 Discontinuous True Colours</p> <p>% Of Area Affected _____ %</p>



Code 5

Continuous True Colours

% Of Area Affected _____%

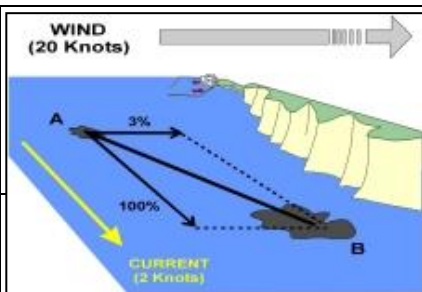
Table 5.10 BOAC Code and Description

BONN Agreement Oil Appearance Code	
Code	Description
Code 1 Oil Sheen Silvery (0.04 μm - 0.3 μm)	The very thin films of oil reflect the incoming light better than the surrounding water and can be seen as a silvery or grey sheen. Above a certain height or angle of view the observed film may disappear.
Code 2 Oil Sheen Rainbow (0.3 μm – 5.0 μm)	Rainbow oil appearance is caused by an optical effect and independent of oil type. Depending on angle of view and layer thickness, the distinctive colours will be diffuse or very bright. Bad light conditions may cause the colours to appear duller. A level layer of oil in the rainbow region will show different colours through the slick because of the change in angle of view. Therefore if rainbow is present, a range of colours will be visible.
Code 3 Oil Sheen Metallic (5.0 μm – 50 μm)	Although a range of colours can be observed (e.g. blue, purple, red and greenish) the colours will not be similar to 'rainbow'. Metallic will appear as a quite homogeneous colour that can be blue, brown, purple or another colour. The 'metallic' appearance is the common factor and has been identified as a mirror effect, dependent on light and sky conditions. For example blue can be observed in blue-sky conditions.
Code 4 Discontinuous True Colours (50 μm – 200 μm)	For oil slicks thicker than 50 μm the true colour will gradually dominate the colour that is observed. Brown oils will appear brown, black oils will appear black. The broken nature of the colour, due to thinner areas within the slick, is described as discontinuous. Discontinuous should not be mistaken for 'coverage'. Discontinuous implies true colour variations and not non-polluted areas.
Code 5 Continuous True Colours (>200 μm)	The continuous true colour of the specific oil is the dominant effect in this category. A more homogenous colour can be observed with no discontinuity as described in Code 4. This category is strongly oil type dependent and colours may be more diffuse in overcast conditions.

5.7 Release Tracking

Table 5.11 is a proposed template produced by Seagreen, however, each Contractor MPCP will include a manual calculation of surface release trajectory aligned with this template.

Table 5.11 Manual Calculation of Surface Release Trajectory

Manual Calculation of Surface Release Trajectory							
An oil slick on the sea surface will move under the influences of: Wind speed / direction @ 3% of the speed & the direction the wind is blowing from. Current speed & direction @ 100% of the current speed & in the direction the current is flowing to. Estimating slick movement may be done manually by “vector” addition using an estimate of current and wind effect. Use the below table to plot the track of the oil.							
Latitude	Enter the latitude of the release when first reported					 <p>WIND (20 Knots)</p> <p>CURRENT (2 Knots)</p> <p>Spill moves from point A to B under the influences of the wind and surface current</p>	
Longitude	Enter the longitude of the release when first reported						
Wind	Enter the wind bearing and speed						
Tide	Enter the tide bearing and speed						
Elapsed	Calculate 3% wind speed over 8 hour elapsed period and, tidal bearing & speed						
Plot	After calculating wind and tidal bearings for each hour to a maximum of 8 hours, calculate new latitude and longitude position of slick to a maximum of 8 hours						
Release at 0 Hours							
Latitude	N/S		°		'		"
Longitude	E/W		°		'		"
Wind Bearing						°	
Wind Speed in kts						kts	
Tidal Bearing						°	
Tidal Speed in kts						kts	
Hours Elapsed	Wind Bearing (°)	Wind Speed (knots)	3% of Wind Speed (knots)	Tidal Bearing (°)	Tidal Speed (knots)		
1							
Release Position		Lat:			Long:		
2							
Release Position		Lat:			Long:		
3							
Release Position		Lat:			Long:		
4							
Release Position		Lat:			Long:		
5							

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Release Position		Lat:		Long:	
6					
Release Position		Lat:		Long:	
7					
Release Position		Lat:		Long:	
8					
Release Position		Lat:		Long:	

5.8 Release Sampling Guide

Note: diesel spills should not be sampled for safety reasons i.e. flash point/flammability.

It is advisable to take a sample of the spilt oil if it is safe and possible. The Contractor Vessel Master should request a sample of the oil is collected using the oil spill sampling kit provided by the Contractor appointed spill response subcontractor. Advice on the collection and handling of oil samples is given in the table below. Personal protection equipment advice on sample kit should also be followed to avoid injury.

Table 5.12 below is a proposed template produced by Seagreen, however, each Contractor MPCP will include advice on collecting and handling of oil samples aligned with this template.

Table 5.12 Sampling Guide

Number of Samples Required
<p>MCA recommend three sealed samples:</p> <ul style="list-style-type: none"> One for analysis. Second to be retained in the laboratory in case of any further actions. Third for production in court.
Frequency of Sampling
<p>Minimum of 1 sample / slick / day where possible.</p>
Size of Sample
<ul style="list-style-type: none"> Unweathered oils (liquid and subsequently free of water): 10 ml Oil exposed to sea surface and forming water-in-oil emulsion: 10 ml Over side water discharge (suspected of 100 ppm): 1 litre of discharge If such quantities cannot be collected, sampling should still be attempted. In some cases, larger volumes may be required for further testing of the slick.
Collecting Method
<ul style="list-style-type: none"> Skim the oil off the surface of the water, ensuring maximum oil content and minimum water (a bucket with a hole may be required to collect the sample initially). In certain circumstances it may be more appropriate to use sampling pads (provided in spill kit). Avoid using metal tools to collect the sample. Any collection of lumpy tar / waxy pollutant should be placed directly into sample containers, with no attempt of heating or melting these samples. Oil collected which is attached to floating debris and seaweeds should be placed along with the debris/seaweeds, directly in to the sampling container. Sample containers should be sealed as soon as possible to minimise the evaporation of the oil's higher fractions and labelled.

Container Sealing, Packaging and Transporting

- Sample containers must be glass with a large neck and a screw cover and a seal which cannot be affected by oil, e.g. no waxed cap seals.
- Plastic/metal containers should be avoided as they can react with the sample and interfere with analysis.
- All sample containers should be sealed with a tamper proof seal.
- Where possible all samples should be securely packed and sealed. Approved fireboard boxes should be used to ensure safe carriage of the samples.
- Samples should be stored in a refrigerator/cold room at less than 5°C in the dark.
- When transporting the materials, vermiculite should be used to surround the samples in the box for protection and to absorb any seepage.

Labelling

Each sample should be clearly labeled with:

- An identifying number which is made up of the date and the initials of the official in charge of taking the samples. For example, 10/04/19/JS = Sample taken on 10th April 2019 by John Smith.
- A description of the sample.
- Location that sample was taken from.
- Purpose for which the sample was taken.
- If known, suspected source, e.g. name of vessel and leaking equipment.
- Whether or not dispersants have been used and, if known, their type and make.
- Method of sampling.
- Name, address and telephone number of persons taking samples and of anyone witnessing the taking of it.
- Additional information that would be useful include; wind direction and velocity; air and water temperature; sample descriptions i.e., viscosity, colour and contaminants and; description of the oil spill i.e. distribution and consistency.

An example of a label and data recording form are given below.

Analysis

All release samples should be sent to (note example laboratory below, Contractor to identify relevant laboratory in their Contractor MPCP):

R.U.M. Consultancy Limited

R.U.M. House
Cookney
Netherley
Aberdeenshire
UK
AB39 3SA

Standard Labels and Data Recording Sheets for Oil Samples

OIL POLLUTION SAMPLE – STANDARD LABEL

ID No.	Date/Time	Location) (Grid Ref)	Name and Address of person taking sample
.....			
For continuity of evidence: Please complete clearly			
Sample passed to:			
Date	Name	Address	Signature
.....			
.....			
.....			
.....			

OIL POLLUTION SAMPLE - STANDARD LABEL

ID No.	Date/Time	Location) (Grid Ref)	Name and Address of person taking sample
.....			
For continuity of evidence: Please complete clearly			
Sample passed to:			
Date	Name	Address	Signature
.....			
.....			
.....			
.....			

5.9 Environmental and Commercial Sensitivities

Environmental and commercial information already known and identified in the Contactor's Environmental Management Plan, should be supported by actual observations from the site and used by the CERT when determining response strategies and the relevant external agencies. In the event of a release, actual sensitivities will be advised on the day by the Seagreen Environment Manager and/or ECoW and relevant authorities. Sensitivities will help to determine the response strategy selected.

A high-level summary of potential environmental sensitivities is provided below for information only. For further details consult the Seagreen Environmental Statement 2012 Offshore ES, Chapter 9 (Nature Conservation Designations), Chapter 10 (Ornithology), Chapter 11 (Benthic Ecology and Intertidal Ecology), Chapter 12 (Natural Fish and Shellfish), Chapter 13 (Marine Mammals) Chapter 14 (Commercial Fisheries), Chapter 20 (Other Marine Users and Activities). Please also consult the Seagreen **Project Environmental Monitoring Programme (PEMP) LF000009-CST-OF-PRG-0003**

Table 5.13 Environmental and Commercial Sensitivities Summary Matrix

Environmental and Commercial Sensitivities Matrix	
Seabirds²	
<p>There are a number of seabird species likely to be present in the Seagreen project area. According to Seagreen studies these include gannet, guillemot, kittiwake, puffin, razorbill and herring gull.</p> <p>According to Seagreen studies, core seabird breeding season months (March to September) are where population of breeding seabirds are highest, due to proximity to breeding colonies, and high populations may also be present during pre and post breeding periods, migration and over wintering.</p>	
Fisheries³	
<p>Commercial Fishing Effort: ICES rectangle 42E8, within which the Seagreen Project is located, records landings values that are of moderate to low importance on a national scale, and of moderate importance in the regional study area. The species which comprise from 42E8 are: king scallops , haddock and squid . In addition to the principal fisheries identified in rectangles 42E8, the following fishing activities are also undertaken: bottom trawling for nephrops, and creeling for lobster and crab. There is currently an artisanal summer fishery in the Forth and Tay area for mackerel, targeted by small, inshore vessels operating hand lines and jiggers. Local creel vessels may target mackerel during the summer months whilst also setting creels for lobster and crab.</p> <p>Nursery: A number of species of commercial importance are known to use all or part of the windfarm study area as spawning and/ or nursery grounds (Cefas, 2010a, Coull <i>et al.</i>, 1998). Those which overlap or are in close proximity to any of the study areas include cod, lemon sole, herring (a key species due to sensitivity to underwater noise). sprat, nephrops, mackerel, plaice, sandeel, saithe, spotted ray, spurdog, tope, and</p>	

² This information was abstracted from Seagreen Project Environmental Monitoring Plan.

³ This information was abstracted from the Seagreen Environmental Statement.

Environmental and Commercial Sensitivities Matrix

whiting. There is also potential for migratory species to be present, e.g Atlantic salmon smolts migrating to feeding ground or adults returning to natal rivers for spawning.

Key:	S	Spawning	PS	Peak Spawning								
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Herring							S	PS	PS			
Cod	S	S	S	PS								
Sandeel	S	S										
Sprat				S	PS	PS	S	S	S			
Whiting					S	S	S					
Mackerel					S	S	S	S				
Plaice	PS											S
Saithe		S	S	S	S							
Lemon Sole				S	S	S	S	S	S			
Spurdog	S	S									S	S
Nephrops									S			
Scallops			S	S	S				S	S		
Edible Crab					S	S	S	S				
Lobster						S	S					
Squid	PS	PS	S	S	S	S	S	S	S	S	PS	PS

Marine Mammals³

The following marine mammal species have been recorded passing through the Seagreen project area, either on an occasional or regular occurrence.

- Bottle Nose Dolphin
- Harbour/Grey Seal
- Harbour Porpoise
- Minke Whale
- White Beaked Dolphin

Sightings tend to be more frequent during the summer months.

Benthic Ecology³

There is potential for toxicity to macrobenthic communities should oil contamination be present in sufficient quantities. According to the Seagreen ES surveys were undertaken to characterise the marine plants and animals on the seabed within the Seagreen Project areas. The Project Alpha and Project Bravo sites were found to be typical of the region and contained large areas of featureless, sediment dominated seabed with patchy communities of worms and shellfish. The only species of conservation importance found to be living within Project Alpha and Project Bravo sites was the long-lived ocean quahog, however only small numbers of young specimens were identified. The Ross worm was present across the site which is a common and widely distributed species of high conservation value when found growing in reef structures. However, there was no evidence that these worms were forming reef structures within the surveyed areas. A slightly more diverse range of species and habitats were found along the export cable route corridor, but no further species of conservation importance were identified.

Environmental and Commercial Sensitivities Matrix

A survey of the landfall location at Carnoustie indicated it to be typical of a sand beach with few species present. Of those identified the majority were worms or marine snails. The Firth of Forth Banks Complex MPA is located in offshore waters, overlapping the Seagreen Project area and includes the Berwick, Scalp and Montrose Banks and the Wee Bankie.

Strongly influenced by water currents, the mosaic of different types of sands and gravels create a unique mixture of habitats that overlie the underwater banks and mounds within the MPA. The aim of the MPA is to conserve the ocean quahog aggregations, offshore subtidal sands and gravels, and shelf banks and mounds that are present within the Firth of Forth Banks Complex MPA. The glacial ridges of the Wee Bankie are also conserved. Further details are provided in figures 5.4 and 5.5.

Commercial Shipping³

Based on the analysis of the marine traffic data, it is considered that commercial vessel activity around the Project Alpha and Project Bravo is relatively low with a number of low trafficked routes passing through and in close proximity to the sites. The principal routes that will be affected during construction works are the north-south routes between Aberdeen/ Northern Scottish ports and Humber/ European ports. The busiest of these routes is used by an estimated 1.6 vessels per day and passes through both Project Alpha and Project Bravo. Vessels on these routes, and others which intersect the sites, are expected to make minor deviations to increase their passing distance around construction activities. Rolling construction safety zones will be in place up to 500m from the construction activities and there may be more than one present at any one time. It is expected that vessels will deviate around these rolling construction safety zones.

There are also a range of protected areas in the vicinity of the Seagreen Project Area (see figures 5.5, 5.6, 5.7 and 5.8) which the Contractor needs to be aware of for potential damage to environment in the event of a significant spill.

Figure 5.5 Overview of Protected Areas adjacent to Seagreen Field

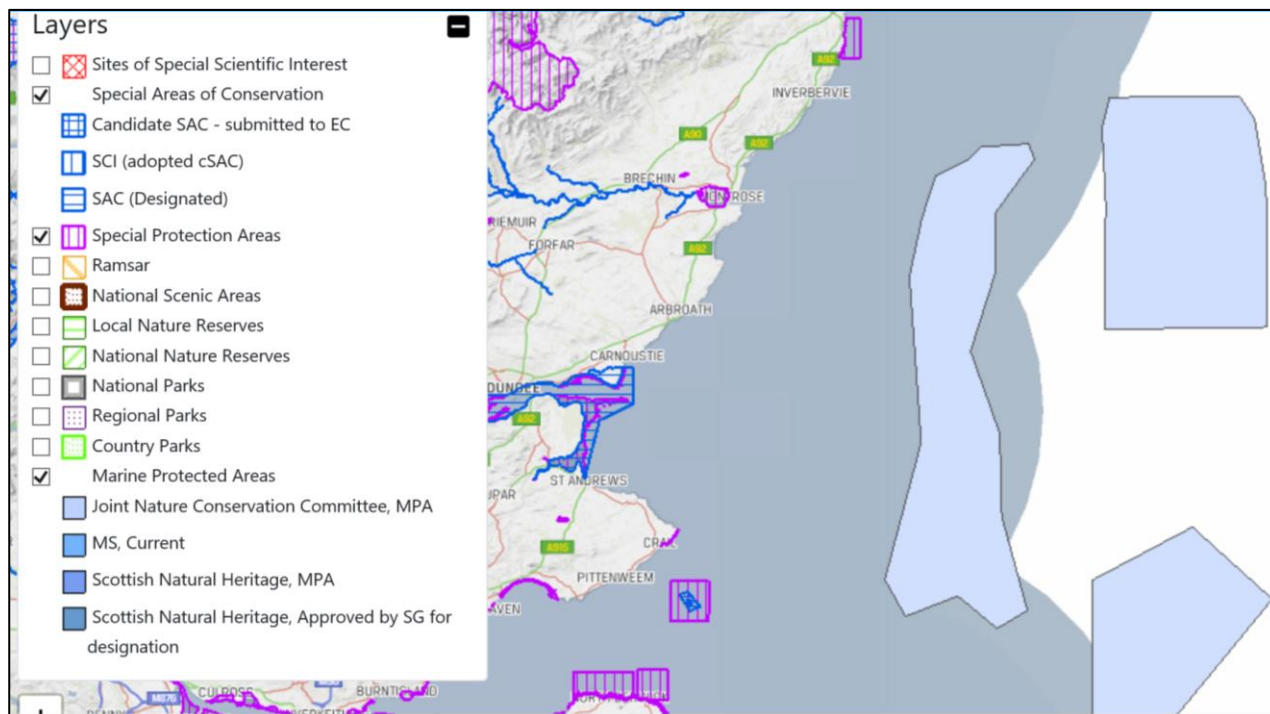
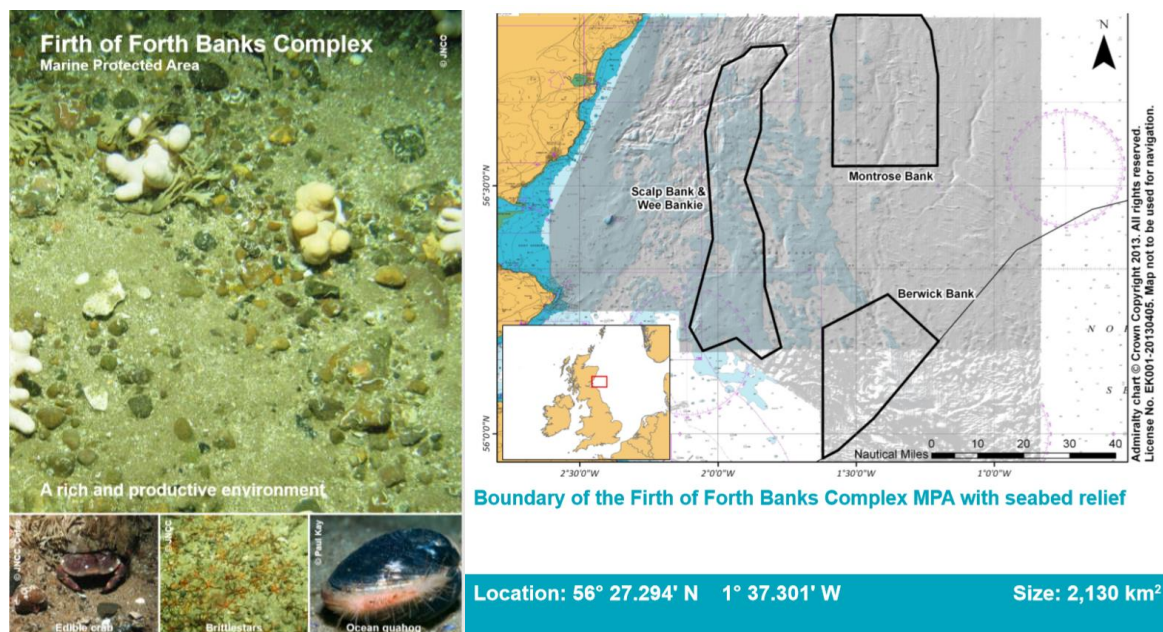


Figure 5.6 Overview of Marine Protected Area (Firth of Forth Banks Complex)



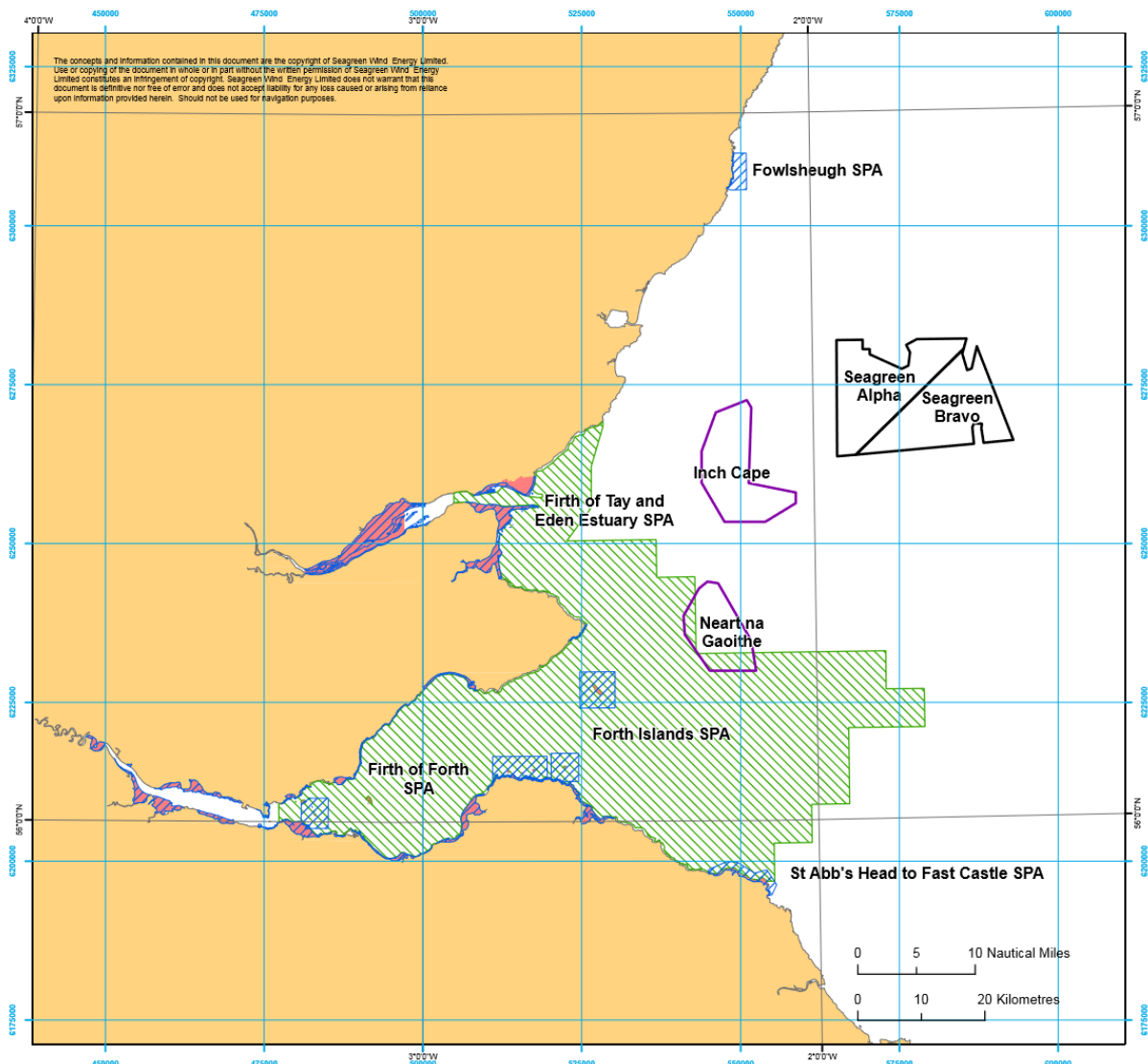
For more information on Firth of Forth Banks Complex refer to:

http://jncc.defra.gov.uk/PDF/Firth_of_Forth_Banks_Complex_Site_Summary_Document_July14.pdf

There are several adjacent Special Protected areas (SPAs) in the vicinity of the Seagreen Project, as presented in Figure 5.7, these include:

- Firth of Forth SPA
- Firth of Tay and Eden Estuary SPA (also a SAC)
- Forth Islands SPA (including Isle of May SAC)
- Fowlsheugh SPA
- St Abb's Head to Fast Castle SPA (also a SAC)
- Outer Firth of Forth and St. Andrews Bay pSPA

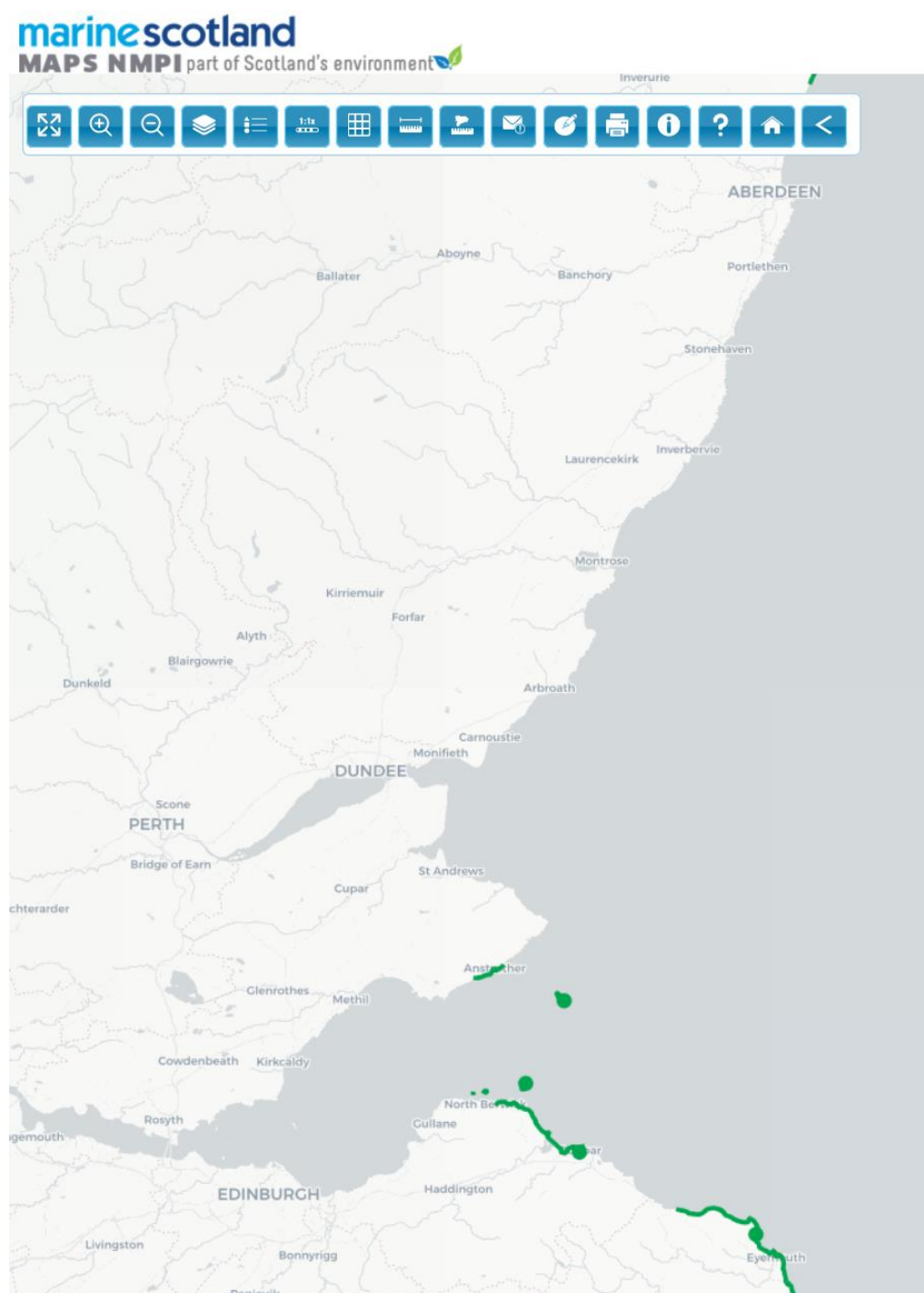
Figure 5.7 Overview of Adjacent Special Protected Areas



For more information refer to <http://jncc.defra.gov.uk/page-1402>

In addition, Marine Environmental High-Risk Areas (MEHRAs) have been identified by Marine Scotland as areas of environmental sensitivity and at high risk of pollution from ships (highlighted in green in figure 5.8 below). For more information refer to <http://marine.gov.scot/information/mehras-marine-environmental-high-risk-areas>

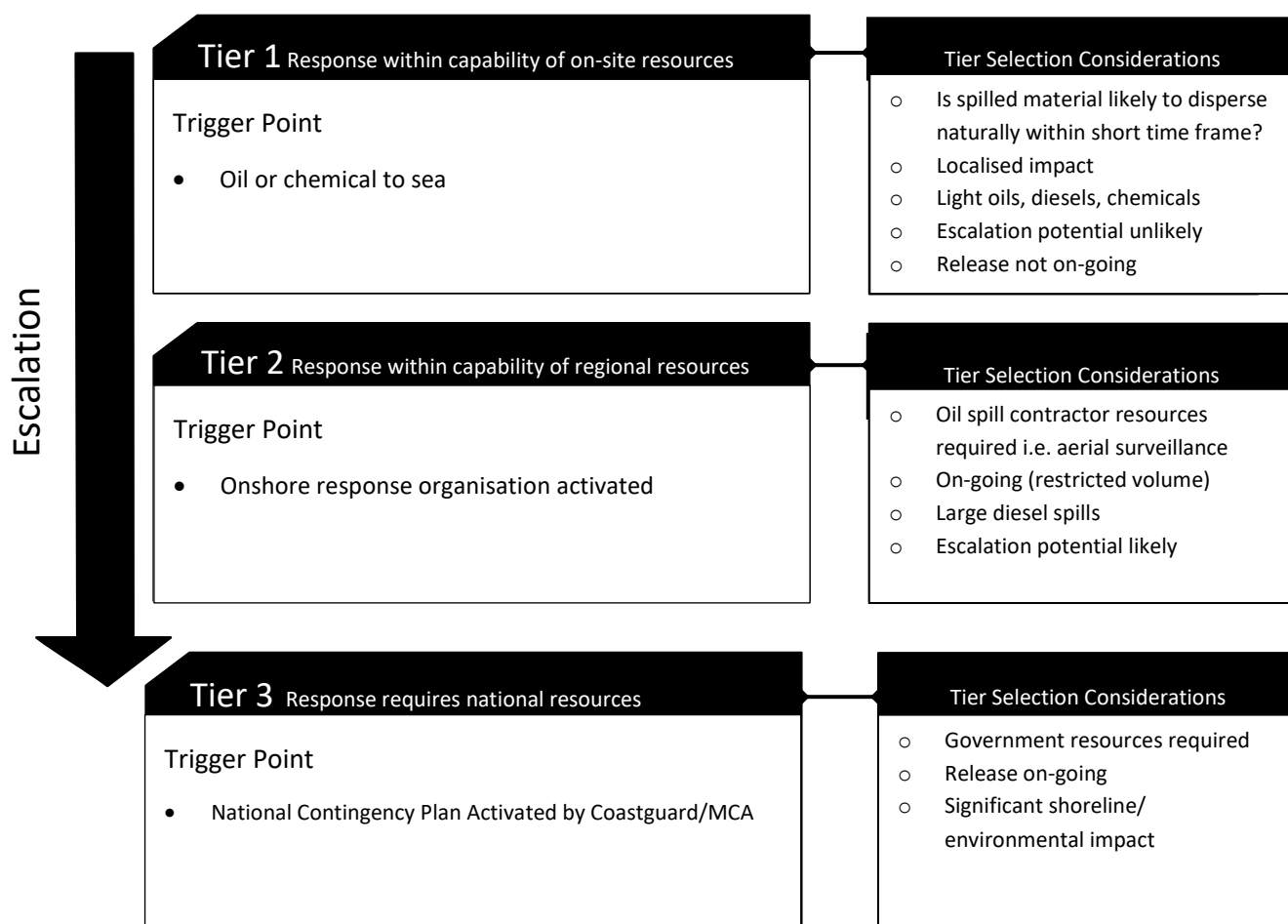
Figure 5.8 Overview of Adjacent Marine Environmental High-Risk Areas



5.10 Tier Selection Guide

The guide below assists the decision-making process in determining the appropriate tier response level for an oil or chemical release to sea. The method of response will be dependent upon several factors including, but not limited to, the incident in question, volume of oil/chemical, oil/chemical type, time of year, weather, sea state and resource availability.

Figure 5.9 Tier Selection Guide



5.11 Selecting an Emergency Response Strategy

5.11.1 Overview

The appropriate response strategy will depend not only on the potential limitations of each of the possible response options, but also on the type of oil spilled and the environmental sensitivities that are potentially threatened by the spill. Table 5.14 presents the response strategies that are generally followed on the UK Continental Shelf (UKCS), according to spill Tier and oil type. For chemical spills, Tier 1 is assumed and is discussed in section 5.11.2.

Table 5.14 - General response strategies according to spill Tier and oil type.

Tier & Resources	Response strategies	
	Non-persistent Oil (MGO and Diesel)	Persistent Oil (Hydraulic and Lube Oils)
Tier 1 (small spill) On site resources	Natural dispersion and monitoring (using support vessel). If safe to do so, agitate using standby vessel propeller ('prop-wash'), by steaming through the slick at speed. Liaise with Contractor appointed spill response subcontractor as required.	Natural dispersion and monitoring. Mechanical recovery where possible. Liaise with Contractor appointed spill response subcontractor as required.
Tier 2 (medium spill) Spill Response Subcontractor and CERT	Natural dispersion and monitoring. Chemical dispersion only if safety or environmental sensitivities are threatened, in consultation with the relevant authorities. Consult specialist services from Contractor appointed spill response subcontractor.	Consult specialist services from Contractor appointed spill response subcontractor. Continue to monitor and evaluate strategy using aerial surveillance. Consider mechanical recovery where possible. Mobilise shoreline containment and recovery equipment if shoreline is threatened – Contractor appointed spill response subcontractor to engage additional support if necessary. Boat-based dispersant application – liaise with Contractor appointed spill response subcontractor as required. This will require approval from Marine Scotland in advance. Unlikely to be approved unless under Force Majeure.
Tier 3 (large spill) Spill Response Subcontractor, CERT and MCA/SOSREP	Natural dispersion and monitoring (aerial surveillance) Chemical dispersion only if safety or environmental sensitivities are threatened, in consultation with the relevant authorities. This will require approval from Marine Scotland in advance. Unlikely unless under Force Majeure. Consult specialist services from Contractor appointed spill response subcontractor.	Contractor appointed spill response subcontractor specialist services. Continue to monitor and evaluate strategy using aerial surveillance. Consider mechanical recovery where possible. Mobilise shoreline containment and recovery equipment if shoreline is threatened. Aerial dispersant application. Liaise with Contractor spill response subcontractor as required. This will require approval from Marine Scotland in advance. Unlikely unless under Force Majeure.

Based on the risk assessment, most oil spills potentially originating from the project are likely to be of small volume (Tier 1) and of light non-persistent oil types. The spill response strategies most appropriate to this oil spill risk are detailed below.

5.11.2 Tier 1 Strategies

Oil Spills

Monitor & Evaluate

For all spills, any oil slick should be monitored from the outset. In the case of the Seagreen project, this will typically involve monitoring by use of a vessel, either already on site, or mobilised for the specific purpose.

The physical appearance of any oil slick should be monitored closely, in addition to changes in the oil or changes to sea state conditions, which may influence the perceived environmental impact. Dispersant application is not normally necessary for Tier 1 spills.

Natural Dispersion

If light non-persistent oil has been spilled, the best strategy will be to allow physical processes to disperse the oil naturally. However, this strategy should always be backed up by thorough monitoring and evaluation.

If natural dispersion is selected as the key response strategy, it must be demonstrated through close monitoring of the oil slick that natural dispersion is in fact taking place.

If light oil has been spilled, such as diesel or hydraulic oil, the process of natural dispersion can be aided by a technique called prop-washing. This technique should be discussed and agreed between Contractor Vessel Master and Contractor appointed spill response subcontractor.

Chemical Spills

Volumes of chemicals utilised in the project will be relatively small. Chemical spills are considered unlikely. A brief summary of potential response techniques for different groups of chemicals (according to their behaviour on contact with water) is presented below.

Gases and Evaporators - The release of a gas or evaporating liquid chemical has the potential to generate vapour clouds that might be toxic or form an explosive mixture with air. In an open environment, toxic vapour will usually disperse as a result of natural air movement and often the only feasible response measure will be to monitor any vapour cloud/plume as it disperses.

Floaters - Floaters may spread across the water surface to form a slick. For spills involving relatively persistent chemicals that float, it may be possible to detect and monitor floating materials. If safe, it may be possible to consider deploying booms to contain and control the movement of substances. Skimmers and other oil response equipment may also be used to recover material from the surface. Containment and recovery may not be advisable when dealing with highly toxic or flammable chemicals. In certain circumstances, sorbent materials may be deployed to collect and concentrate a chemical spill.

Dissolvers - The ability to contain and recover dissolved chemicals is extremely limited. Providing means to accelerate the natural processes of dispersion and dilution may be the only way to respond to such chemicals. Some dissolved chemical plumes may, in theory, be neutralised, flocculated, oxidised or reduced by the application of other chemicals, but chemical treatment is unlikely to be practical and would not normally be recommended.

Sinkers - Chemicals that sink have the potential to contaminate the seabed and may persist in sediments. Response may therefore need to consider the recovery of any chemicals and heavily contaminated sediment. In shallow waters, mechanical dredgers and pump/vacuum devices may be used to recover materials.

5.11.3 Tier 2/3 Strategies

In most cases, any oil spills from the Seagreen project are likely to be small in nature.

However, in the unlikely event of a larger oil spill, or if the spilled oil persists, then regional or national response capabilities may need to be mobilised.

Tier 2 spills will require regional response using the Contractor appointed spill response subcontractor and onshore CERT to support the Contractor Vessel Master offshore.

Tier 3 spills will require national resources, the MCA will likely implement the National Contingency Plan and the Secretary of State's Representative (SOSREP) will take command of the incident. This will still require support and co-operation of the Contractor's Vessel Master, Contractor appointed spill response subcontractor and onshore CERT to support the MCA and SOSREP.

The Seagreen Marine Coordinator will maintain continued communications with those on site (such as the Contractor Vessel Master) and provide assistance to the relevant response cells established by the MCA. The Seagreen ECoW on the project will, where necessary or requested to do so, liaise with the Standing Environment Group (SEG) and Scientific Technical Advisory Committee (STAC), to ensure the effective transfer of information.

In addition to the response above, the following additional resources may be deployed in response to a Tier 2 or Tier 3 incident.

Offshore Containment & Recovery

For larger spills of more persistent oil in environmentally sensitive areas, or oils that are not amenable to dispersion at sea, offshore mechanical containment and recovery may be considered as a response option. This would involve the deployment of an oil recovery vessel(s) with offshore oil containment booms and oil skimming equipment.

Mechanical containment and recovery capability would be available through the Contractor appointed spill response subcontractor.

Note that for the general UKCS environment, offshore containment and recovery is not normally considered to be a viable response strategy, due to the rough offshore weather conditions that are often encountered.

However, if a large volume of more persistent oil is spilled and the oil is not dispersing naturally, and the weather conditions are amenable, offshore containment and recovery may be a useful response strategy.

Dispersant Application

There is the option to apply dispersant by sea and/or air to aid and accelerate natural processes dispersing the oil, thus removing it from the sea surface.

Due to the light nature of the oils associated with the Development, dispersant application is not likely to be a viable response option. However, in the unlikely event of a large spill of more persistent oil, dispersant application may be considered if the oil is not observed to be dispersing naturally.

Appropriate consultation is required with regulatory bodies before initiating the use of dispersant as a response.

Formal approval for dispersant use from Marine Scotland will be required in water depths of less than 20 metres or within 1 NM of such depths.

However, UK approved oil treatment products may be used without prior consultation with the licensing authority in *Force Majeure* situations where there is a genuine risk to human life, or to the safety of an installation or vessel, such as where there is a serious danger from fire or explosion.

The window of opportunity to use chemical dispersants will be dependent upon various factors, including the quantity of oil, sea temperature, the nature of the spill (i.e. instantaneous or continuous release), prevailing weather and environmental and commercial sensitivities.

For environmental and commercial sensitivities in the vicinity of the Development, refer to section 5.9 of this document which summarises relevant sections of the Seagreen ES, SEIS and relevant Consent Plans, including the **Offshore CEMP (LF000009-CST-OF-PLN-0014)**, **Piling Strategy (LF000009-CST-OF-PLN-0003)** and **Vessel Management Plan (LF000009-CST-OF-PLN-0006)**.

A dispersant response capability should be available through the Contractor's appointment of a spill response subcontractor.

The Marine Management Organisation (MMO) acts on behalf of Marine Scotland for the testing and approval of dispersants and other oil treatment products which are intended for use in all UK waters. It also regularly reviews existing approvals to ensure that products remain safe (MMO, 2015).

The MMO has published a list of the latest oil treatment products approved for use on the UKCS which is regularly updated: <https://www.gov.uk/government/publications/approved-oil-spill-treatment-products/approved-oil-spill-treatment-products>

Forms in section 5.12 (tables 5.15 and 5.16) must be completed and sent to Marine Scotland via Seagreen for dispersant usage.

5.12 Dispersant Application

Prior to dispersant application, the information in Table 5.15 is proposed to be submitted to Marine Scotland. Which must be approved by Marine Scotland before use unless under Force Majeure.

Table 5.15 – Information required if seeking advice or prior approval on dispersant use

MARINE SCOTLAND email: spillresponse@marlab.ac.uk ; fax number: 01224 295524	
Installation / spill information	
Name of Responsible Person:	
Name of site:	
Location of spill (in degrees of Latitude and Longitude):	
Oil type (description if not known). If crude oil, state type:	
Volume of oil spilled – preferably in tonnes:	
Source of oil spill:	
Potential for further spillage:	
Description of slick – including dimensions and colour:	
Dispersant use information	
Dispersant type(s):	
Dispersant proprietary name(s):	
Quantity / quantities proposed for use:	
Method(s) of application:	
Have efficacy tests been undertaken to confirm hydrocarbons are amenable to treatment? If so, what were the results?	
Location(s) of application:	
Water depth (m) in application area(s):	
Minimum distance (km) from nearest shoreline:	
Minimum distance (km) from nearest median line:	
Environmental sensitivities relevant to location(s) of application (including any protected sites within 20 km):	
Prevailing weather conditions: Wind speed, Wind direction, Wave height:	
Other methods of responses being applied:	

The information in table 5.16 below is required to be submitted to Marine Scotland after the use of dispersant (adapted from DECC, 2015).

Table 5.16 - Information to be recorded when using dispersant

MARINE SCOTLAND email: spillresponse@marlab.ac.uk , fax number: 01224 295524	
Installation information	
Name of operator:	
Name of site:	
Location (in degrees of Latitude and Longitude):	
Dispersant use information	
Date of use:	
Dispersant proprietary name(s):	
Quantity / quantities used:	
Method(s) of application:	
Location(s) of application:	
Prevailing weather conditions at time of use: <ul style="list-style-type: none"> • Wind speed • Wind direction • Wave height 	
Reason for use:	
Was approval or advice obtained prior to use?	
Estimate quantity of oil treated:	
Comments on effectiveness of treatment:	
Other relevant observations / comments on use:	
Name and contact details for person reporting use:	

6. Seagreen Documents and Consent Plans

Table 6.1 sets out those documents for the Seagreen project in relation to either Consent Plans or other reference documents.

Table 6.1 Seagreen Document and Consent Plans.

Seagreen Document Number	Title
LF000009-CST-OF-PLN-0002	Marine Archaeological Written Scheme of Investigation & Protocol for Archaeological Discoveries
LF000009-CST-OF-PLN-0012	Marine Pollution Contingency Plan
LF000009-CST-OF-PRG-0002	Offshore Construction Programme
LF000009-CST-OF-PLN-0014	Offshore Construction Environmental Management Plan
LF000009-CST-OF-PLN-0010	Offshore Lighting and Marking Plan
LF000009-CST-OF-PLN-0007	Offshore Navigational Safety Plan
LF000009-CST-OF-PLN-0001	Offshore Operational Environmental Management Plan
LF000009-CST-OF-PLN-0003	Offshore Piling Strategy
LF000009-CST-OF-PRG-0003	Offshore OWFs Environmental Monitoring Programme
LF000009-CST-OF-PLN-0009	Offshore Transmission Assets Cable Plan
LF000009-CST-OF-MST-0002	Offshore Transmission Assets Construction Method Statement
LF000009-CST-OF-PRG-0004	Offshore Transmission Assets Operation and Maintenance Programme
LF000009-CST-OF-PLN-0008	Offshore Wind Farm Cable Plan
LF000009-CST-OF-MST-0001	Offshore Wind Farm Construction Method Statement
LF000009-CST-OF-PRG-0001	Offshore Wind Farm Operations and Maintenance Programme
LF000009-CST-OF-PLN-0006	Offshore Vessel Management Plan
LF000009-HSE-MA-STD-0001	Employer SHE Requirements
LF000009-HSE-MA-PRO-0007	Vessel Inspection
LF000009-HSE-MA-PRO-0008	Incident Reporting

Appendix A – Seagreen List of Abbreviations and Definitions

Term	Description
Offshore CEMP	Construction Environmental Management Plan as required under Alpha and Bravo Section 36 Condition 14 and the Offshore Transmission Asset Marine Licence Condition 3.2.1.2
(the) consents	Collective term used to describe the Section 36 consents and Marine Licences issued to SAWEL, SBWEL and SWEL
Construction Environmental Advisor	Seagreen's Contractor appointed Construction Environmental Advisor.
Contractor	Means the CONTRACTOR as defined in the CONDITIONS OF CONTRACT.
Contractor Appointed Spill Response Subcontractor	Third party required to be appointed by Contractor prior to commencement of works to provide spill response support for the duration of project construction and commissioning
Contractor Construction Environmental Management Plan	Seagreen's Contractor produced CEMP (in compliance to the Seagreen Offshore CEMP) detailing how the Contractor will, as a minimum, implement and deliver the commitments set-out in this. The Contractor Offshore CEMP will detail measures specific to the Contractor's deliverables.
Contractor Emergency Response Team (CERT)	Contractor Emergency Response Team (CERT) based onshore to support Contractor Vessel Master and Contractor Senior Offshore Person deal with incidents
Contractor Marine Pollution Contingency Plan (MPCP)	Seagreen's Contractors are required to produce Contractor MPCP detailing how the Contractor will, as a minimum, i. bridge the Seagreen MPCP with shipboard oil pollution emergency plan (SOPEP) of any vessel engaged in the works (either chartered to the Contractor or chartered to a Contractor's subcontractor); and ii. consider prevention and incident planning/response measures in the event of a spill for any assets under the control of the Contractor.
CoP	Construction Programme as required under Alpha and Bravo Section 36 Condition 10 and the Offshore Transmission Asset Marine Licence Condition 3.2.2.3
DPR	Daily Progress Report
ECoW	Ecological Clerk of Works as required under Alpha and Bravo Section 36 Condition 29 and the Marine Licence Condition 3.2.2.12.
ES	Environmental Statement
FLO	Fisheries Liaison Officer (Seagreen) as required under Alpha and Bravo Section 32 Condition 29 and the Offshore Transmission Asset Marine Licence Condition 3.2.2.13
FMMS	The term used to describe the deliverable required under Alpha and Bravo Section 36 Condition 31 and the Offshore Transmission Assets Marine Licence Condition 3.2.1.4.

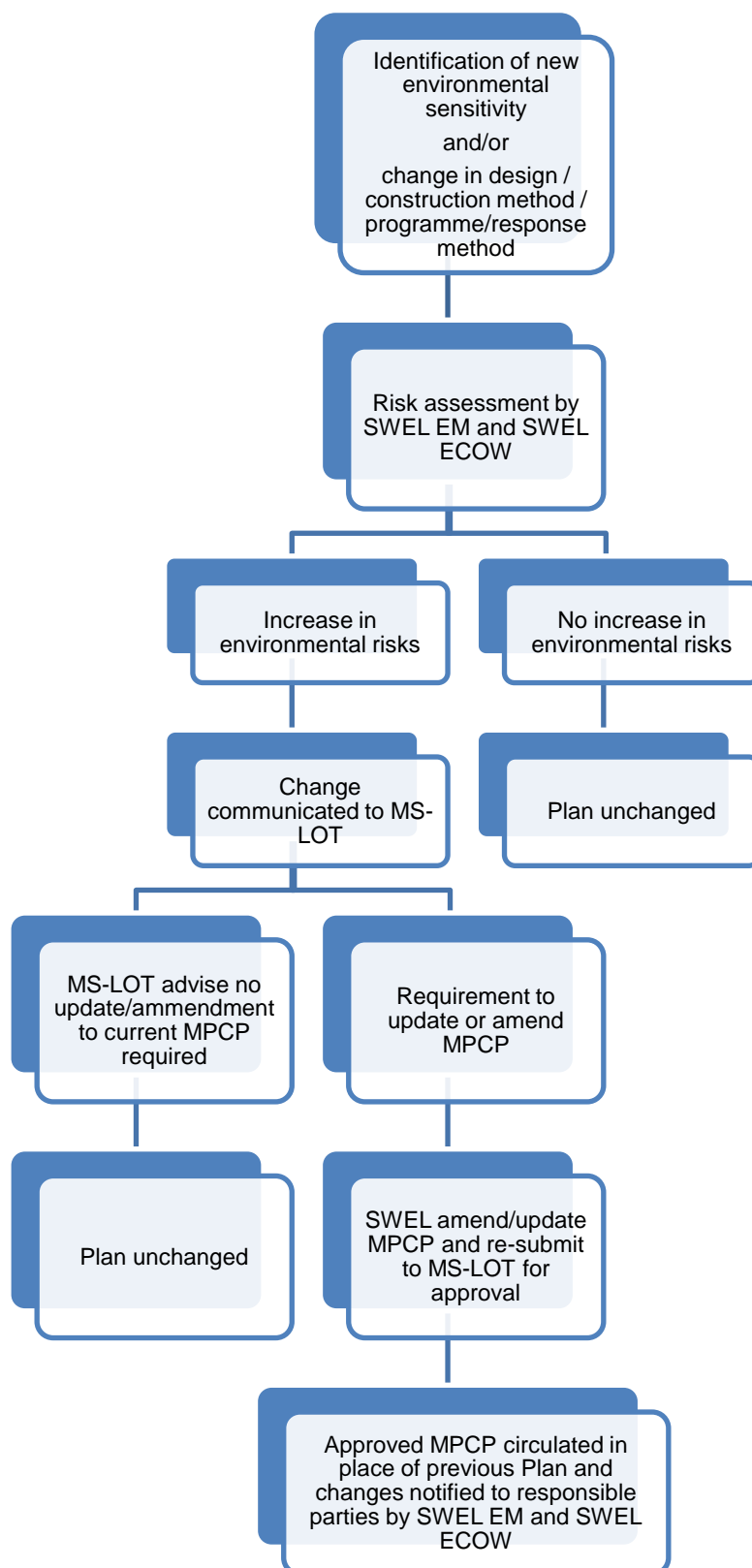
Term	Description
	Note that the conditions state the requirement for a CFMS which is superseded by the Fisheries Management and Mitigation Strategy
HIRA	Hazard Identification and Risk Assessment
HRA	Habitats Regulations Assessment
IAC	Inter-Array Cable. The electrical cables that connect the WTGs to the OSPs
IMO	International Maritime Organisation
INNS	(marine) invasive non-native species
ISO	International Organisation for Standardisation
JNCC	Joint Nature Conservation Committee
Landfall site	The point above MHWS where the OTA export cables connects to the Onshore transmission Works
Licencing Authority	Marine Scotland acting on behalf of the Scottish Ministers
Licensee	Seagreen Wind Energy Ltd (Seagreen), and having its registered office at Inveralmond House, 200 Dunkeld Road, Perth, PH1 3AQ, on behalf of SAWEL and SBWEL
LMP	Lighting and Marking Plan required under Condition 19 of the S36 consent and Condition 3.2.2.14 of the Marine Licence
Marine Coordination	The management and surveillance of people, vessels and Offshore structures to ensure the safe preparation and execution of Offshore activities, in order to minimise the probability of an incident, and to provide effective response if an incident does occur
Marine Licences	<p>Marine licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 in respect of Seagreen Alpha Wind Farm on 10 October 2014 as amended by the revised marine licence granted by the Scottish Ministers on 28 August 2018 (reference 04676/18/0)</p> <p>Marine licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 in respect of Seagreen Bravo Wind Farm on 10 October 2014 as amended by the revised marine licence granted by the Scottish Ministers on 28 August 2018 (reference 04677/18/0)</p> <p>Marine licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 in respect of the Seagreen Offshore Transmission Asset on 10 October 2014 as amended by the revised marine licence granted by the Scottish Ministers on 2019 (reference 04678/19/0)</p>
MCA	Maritime and Coastguard Agency
MHWS	Mean High Water Springs

Term	Description
MMMT	Marine Mammals Mitigation Team
MMO	Marine Mammal Organisation
MPCP	Marine Pollution Contingency Plan, as required under Environmental Management Plan, Condition 14b of the S36 consent and Condition 3.2.1.2 c of the OTA Marine Licence
MS-LOT	Marine Scotland Licensing and Operations Team
non-compliancee	refers to a non-compliance of 'the consents' of 'the Seagreen Project'
NOTAM	Notice to Airmen
NtM	Notice to Mariners
O&M	Operation and Maintenance
OCNS	Offshore Chemical Notification Scheme
Operational EMP	Operational Environmental Management Plan.
Offshore FLO	Seagreen's Contractor is required to will appoint Offshore FLOs who will be present on main installation vessels for the duration of the Contractors works
OMP	Operation and Maintenance Programme required under S36 condition 16 and Marine Licence condition 3.2.3.2
OnTW	Onshore Transmission Works, from landfall consisting of onshore buried export cables and new transmission substation
OSCP	Oil Spill Contingency Plan
OTA	Offshore Transmission Asset includes the transmission cable required to connect the Wind Farm to the OnTW. This covers the OSPs and the cable route from the OSPs to the MHWS at the landfall at Carnoustie
OTA CaP	Cable Plan as required under the Offshore Transmission Assets Marine Licence Condition 3.2.2.10
OSP	Offshore Substation Platform means an alternating current standalone modular unit that utilises the same substructure and foundation design as a wind turbine generator
OWF	the Offshore array development as assessed in the ES including wind turbine generators, their substructures and foundations, and associated inter-array cabling
PEMP	OWFs Environmental Monitoring Programme as required under Alpha and Bravo S36 Condition 26 and the Offshore Transmission Assets Marine Licence Condition 3.2.1.1
PS	Piling Strategy, as required for approval under Condition 11 of the S36 consent and Condition 3.2.2.5 of the Marine Licence
SAC	Special Area of Conservation

Term	Description
SAP	Special Authorised Person
SAWEL	Seagreen Alpha Wind Energy Ltd (SAWEL) (company number 07185533) and having its registered office at No.1 Forbury Place, 43 Forbury Road, Reading, United Kingdom, RG1 3JH
SBWEL	Seagreen Bravo Wind Energy Ltd (SBWEL) (company number 07818554 and having its registered office at No.1 Forbury Place, 43 Forbury Road, Reading, United Kingdom, RG1 3JH
SEAR	Safety and Environmental Awareness Report
S36	consent under section 36 of the Electricity Act 1989 granted by the Scottish Ministers on 10 October 2014 in respect of the Seagreen Alpha and Seagreen Bravo offshore wind farms, both as varied by the Scottish Ministers by decision letter issued pursuant to an application under section 36C of the Electricity Act 1989 on 28 August 2018
SEIS	The Supplementary Environmental Information Statement submitted to the Scottish Ministers by the Company on 18 October 2013 as part of the application for the consents
SHE	Safety, Health, Environment
SOPEP	Shipboard Oil Pollution Emergency Plan
Site	The area outlined in red in Figure 1 attached to the S36 consent Annex 1 and the area outlined in red and the area outlined in black in the figure contained in Part 4 of the Marine Licence
SNH	Scottish Natural Heritage
SOC	Safety Observation Card (term can vary depending on the type of safe system of working being utilised i.e. KRIMA, Synergi etc)
SPA	Special Protection Area, protected sites classified in accordance with Article 4 of the EC Birds Directive
SSE	Scottish and Southern Energy
SSSI	Site of Special Scientific Interest, areas of land and water designated under the Nature Conservation (Scotland) Act 2004
SSMEG	Scottish Strategic Marine Environment Group, as required under Condition 28 of the S36 consent and Condition 3.2.2.19 of the Marine Licence
Seagreen	Seagreen Wind Energy Limited, the parent company of Seagreen Alpha Wind Energy Ltd (SAWEL) and Seagreen Bravo Wind Energy Ltd (SBWEL), (company number 06873902 and having its registered office at No.1 Forbury Place, 43 Forbury Road, Reading, United Kingdom, RG1 3JH.

Term	Description
Toolbox talk	A short presentation given to team members on an aspect of environmental management
UKHO	United Kingdom Hydrographic Office
VMP	Vessel Management Plan required under Condition 15 of the S36 consent and Condition 3.2.2.8 of the Marine Licence
WFA CaP	Cable Plan as required under Alpha and Bravo Section 36 Condition 18
WNoO	Weekly Notice of Operations
Works	Means WORKS as referred to in the CONDITIONS OF CONTRACT
WTG	Wind turbine generator

Appendix B – Change Management Procedure



Appendix C – Seagreen Contacts Directory

These contact details will be updated prior to the start of construction

Organisation	Contact	Telephone (office hours)	24 hr. Contact	Mobile / Pager / Email
Seagreen CONTACTS				
Seagreen Senior Project Manager				
Seagreen Environment Manager				
Seagreen SHE Manager				
Seagreen ECoW				
Seagreen MMO				
Seagreen FLO				
Seagreen Archaeological Consultant				
Seagreen Marine Installation Package Manager				
Seagreen Transmission System Package Manager				
Seagreen Turbine Supply and Service Package Manager				
Seagreen Lead Marine Coordinator				
SSE 24 HR Emergency Service				

Organisation	Contact	Telephone (office hours)	24 hr. Contact	Mobile / Pager / Email
CONTRACTOR CONTACTS				
Marine Installation				
WTG				
Transmission (Cables)				
Transmission (OSPs)				
STAKEHOLDER CONTACTS				
MS-LOT				
Port				
SEPA				
SNH				
Historic Environment Scotland				
Angus Council				