



Castlegar Bog

**Cutaway Bog Decommissioning and Rehabilitation Plan
2021**

Addendum 1

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Table of Contents

1. Introduction.....	4
2. Appropriate Assessment Reporting findings.....	4
3. Appropriate Assessment Mitigation.....	6
3.1 Description of the Measure	6
3.1.2 Best Practice Environmental Control Measures to be applied to Decommissioning and Rehabilitation Works	6
3.1.2 Best Practice Measures around the treatment of Waste.....	7
3.1.3 Best Practice & Biosecurity.....	8
3.1.4 Silt Ponds	9
3.1.5 Cleaning Silt Ponds.....	11
3.1.6 Measures to avoid runoff when carrying out rewetting of peat.....	11
3.1.6 Measures to avoid changes to hydrological regime.....	12
3.1.7 Measures to avoid polluted runoff in the event new drains are required or existing drains require upgrade.....	12
3.1.8 Measures to Ensure all Berms & Drain Blocks are Fit for Purpose.....	13
3.1.12 Measures to avoid disturbance or displacement to SCI bird species.....	14
3.2 Effectiveness of these Measures.....	16
3.2.1 Guidance.....	16
3.3 Implementation of Mitigation Measures.....	18
3.4 Degree of confidence in the likely success of the mitigation measure.....	19
3.5 Monitoring of the Implementation and Effectiveness of the Mitigation Measures.....	19
3.6 How any mitigation failure will be addressed.....	20

1. INTRODUCTION

Bord na Móna operates under IPC Licence issued and administered by the EPA to extract peat within the Blackwater Bog group (Ref. P0/502-01). As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.

This report – *Castlegar Bog Decommissioning and Rehabilitation Plan 2021 – Addendum 1* – should be read in conjunction with – *Castlegar Bog Decommissioning and Rehabilitation Plan 2021*.

This report -Castlegar Bog Decommissioning and Rehabilitation Plan 2021 – Addendum 1 - outlines the findings of the Appropriate Assessment reporting carried out in respect of proposed PCAS activities at Castlegar Bog, and re-produces the mitigation measures that are listed in the Natura Impact Assessment of the Castlegar Bog Decommissioning and Rehabilitation Plan 2021¹.

This include, where relevant, both bespoke measures designed to mitigate the potentially adverse effects identified in the Appropriate Assessment reporting but also any Best Practice measures which also mitigate the potential for adverse effects on European Sites.

All such measures are to be implemented as part of an Environmental Management Plan (hereafter EMP) to be overseen by PCAS staff.

Additionally it is acknowledged that IPC license conditions (Conditions 2.2, 2.4, 2.5, 3.2, 4.1, 4.2, 4.4, 4.5, 4.6, 6.0, 9.0, 11.0, 12.0, 13.0, schedule 1, 3, & 4 of the Blackwater IPC Licence) will be implemented as part of an EMP.

2. APPROPRIATE ASSESSMENT REPORTING FINDINGS

The conclusion of the NIS was as follows:

‘Appropriate Assessment Stage One Screening of all European sites identified within the wider surrounding area of Castlegar Bog evaluated that the potential for significant effects on the Special Conservation Interests or Qualifying Interests of 2 no. European Sites could not be excluded. In particular, the potential for indirect effects via a deterioration in water quality, and from disturbance to /displacement to fauna. Thus, the respective elements were brought forward for further critical examination in the Natura Impact Statement Report to inform the Appropriate Assessment process.

Following examination and analysis, and taking account of the protective measures proposed, the potential for:

disturbance and displacement of SCI waterbird species occurring within the River Suck Callows SPA and the Middle Shannon Callows SPA; and

degradation of wetland habitats of the River Suck Callows SPA through indirect impacts via a hydrological pathway;

were found not to result in adverse effects due to the protective measures detailed in this Natura Impact Statement.

¹ Jennings O ‘Donovan Ltd (2021) Cutaway Bog Decommissioning and Rehabilitation Plan Natura Impact Statement

The protective measures detailed in this Natura Impact Statement comprise standard best practice environmental control measures, measures to avoid berm failure, the utilisation of existing surface water management infrastructure and the provision of further bespoke mitigation measures in the form of ERZs and specified scheduling of works to avoid disturbance to special conservation interest bird species.

With the implementation of these mitigation measures there are no significant effects identified which would adversely affect the wigeon population, the populations of other special conservation interest bird species, wetland birds of the River Suck Callows SPA or the Middle Shannon Callows SPA or the wetland habitat of the River Suck Callows SPA.

The provisions of Article 6 of the 'Habitats' Directive 92/43/EC (2000) defines integrity as the 'coherence of the sites ecological structure and function, across its whole area, or the habitats, complex of habitats and/or population of species for which the site is classified'. It is clear that, given the application of prescribed protective measures for the avoidance of impacts and the implementation of the required mitigation measures, the proposed development will not give rise to adverse effects on the integrity of any of the identified European sites evaluated herein.'

3. APPROPRIATE ASSESSMENT MITIGATION

The following sub-sections re-produce from the NIS the range of mitigation measures that will be implemented during the PCAS and form part of the PCAS design.

3.1 Description of the Measure

3.1.2 Best Practice Environmental Control Measures to be applied to Decommissioning and Rehabilitation Works

The following Best Practice Environmental Control measures are to be applied as standard to ensure compliance with IPC license Conditions:

- Bog restoration/rehabilitation works will be restricted to within the footprint of the proposed rehabilitation works area.
 - The proposed rehabilitation works will have due regard to noise limits and hours of operation (i.e. dusk and dawn) to minimise any potential disturbance on resident and local fauna that utilise the site and immediate environs.
 - A standard operating procedure overseen by the Project Ecologist will be in place for all PCAS activities to avoid any significant effects on breeding birds. This will include ground nesting birds and will apply to silt pond cleaning, and cutaway activities. Restriction zones will be in place to avoid effects on any identified ground nesting birds/waterfowl as appropriate.
 - All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996).
 - The proposed works will be restricted to daylight hours and there will be no requirement for artificial lighting.
 - Silt ponds will be inspected and maintained as per the IPC Licence.
 - During periods of heavy precipitation and run-off, works will be halted.
 - Works will be carried out using a suitably sized machine and in all circumstances excavation depths and volumes will be minimised where possible.
 - All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage.
 - Hoses and valves will be checked regularly for signs of wear and will be closed and securely locked when not in use.
 - Fuelling and lubrication of equipment shall only be carried out in designated areas away from surface water drainage features and ecologically sensitive areas.
 - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
 - All waste will be sorted by the works crews, managed within the site in designated waste disposal facilities, and removed to a licenced waste facility, in line with BnM Standard operating practice.
 - Vehicles will never be left unattended during refuelling.
 - No direct discharges to waters will be made. No washings from vehicles, plant or equipment will be carried out on site.
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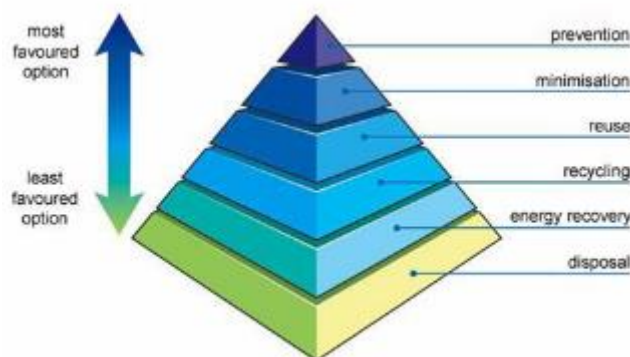
- All plant refuelling will take place using mobile fuel bowsers. Only dedicated trained and competent personnel will carry out refuelling operations.
- All fuels required for machinery and equipment will be stored in a designated location, away from main traffic activity, at the nearest BnM Compound. All fuel will be stored in bunded, locked storage containers. Diesel or petrol fuel and mechanical oils will also be used by site vehicles.
- Mobile storage such as fuel bowsers will be bunded to 110% capacity to prevent spills. Tanks for bowsers and generators shall be double skinned. When not in use, all valves and fuel trigger guns from fuel storage containers will be locked. All pumps using fuel or containing oil will be locally and securely bunded where there is the possibility of discharge to waters.
- Potential impacts caused by spillages etc. during rehabilitation works will be reduced by keeping spill kits and other appropriate equipment on-site.
- Site works will be carried out in accordance with 'best practice'. In order to ensure compliance and implementation of 'best practice', these measures will be communicated to relevant Bord na Móna staff and updated as required.
- All waste water will be removed by a licenced waste contractor to a licenced waste water treatment facility.
- Any fertiliser used will be Rock Phosphate and will not be applied in the following conditions:
 1. The land is waterlogged
 2. The land is flooded, or it is likely to flood
 3. The land is frozen, or covered with snow
 4. Heavy rain is forecast within 48 hours (forecasts will be checked from Met Éireann).
 5. The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- No fertiliser will be spread on land within 10 metres of a surface watercourse. This approach is in line with best practice guidelines, such as the guidelines for the clear-felling of conifer plantation outlined in the Standards for Felling & Reforestation Guidelines (Version: October 2019)
- Buffer zones in respect of waterbodies, as specified on <https://www.epa.ie/about/faq/name,57156,en.html>, will be adhered with at all times with regard to fertiliser application.

3.1.2 Best Practice Measures around the treatment of Waste

Condition 7 of the IPC licence for Peat Extraction at Edera Bog requires waste items to be disposed of or recovered as follows:

- Disposal or recovery of waste shall take place only as specified in Schedule 2(i) Hazardous Wastes for Disposal/Recovery and Schedule 2(ii) Other Wastes for Disposal/Recovery of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.
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- Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.
- A full record, which shall be open to inspection by authorized persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:
 - The names of the agent and transporter of the waste.
 - The name of the persons responsible for the ultimate disposal/recovery of the waste.
 - The ultimate destination of the waste.
 - Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.
 - The tonnages and EWC Code for the waste materials listed in Schedule 2(i) Hazardous Wastes for Disposal/Recovery and Schedule 2(ii) Other Wastes for Disposal/Recovery sent off-site for disposal/recovery.
 - Details of any rejected consignments.
- A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.
- As required by the licence, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, as agreed by the EPA, with waste records maintained as required for inspection by authorized persons of the EPA at all times.
- Where possible, Bord na Móna will utilize the appropriate waste hierarchy to identify waste that can be reused or recycled ahead of disposal.



- The validation of the success of condition 10.1 is carried out through an Independent Closure Audit (ICA), followed by an EPA Exit Audit (EA) and the eventual partial or full surrender of the licence.

3.1.3 Best Practice & Biosecurity

The potential for importation or introduction of non-native plant species (such as Japanese Knotweed, Himalayan Balsam, etc.) has been identified. Section 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 prohibits the introduction and dispersal of invasive alien species (particularly plant species) listed on Part 1 (third column) of the 'Third Schedule'.

Rehabilitation and decommissioning in the bog will have due regard to the relevant biosecurity measures outlined below:

- Records of problematic invasive species within the various bog units will be marked out with signs to highlight areas of infestation to personnel.
- All plant machinery will be restricted from disturbing known colonies of invasive species.
- All plant machinery will avoid unnecessary crossings to adjoining lands.
- Good site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (i.e. Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Persicaria wallichii*), etc.) by thoroughly inspecting and washing vehicles prior to entering the works area.

The biosecurity measures outlined above are in line with best practice guidelines issued by the National Roads Authority (NRA, 2010) – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads and broadly based on the Environment Agency’s (2013) – The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites (Version 3, amended in 2013, accessed on the Environment Agency’s website on the 11th of July 2016).

In addition to the above, Best Practise measures around the prevention and spread of Crayfish plague will be adhered with throughout all rehabilitation works and activities.

- All water quality monitoring equipment which has been used in water will be treated with a disinfectant or a strong saline solution and then thoroughly dried (ideally over 24 hours) BEFORE being used in water again.
- Check, Clean, Dry protocol will be adhered with before and after visiting a river or lake for monitoring, in line with Best Practice² or for activities such as Sphagnum inoculation.
- Virkon Aquatic will be available as required.

3.1.4 Silt Ponds

Silt Ponds – 8 no. Silt ponds with a total volume of 16,651m³ are in place at Castlegar Bog and connected to the existing drainage network. These silt ponds, already stipulated and in use as mitigation measures in respect of Peat Extraction under IPC license, will continue to function as the primary intervention in terms of sediment release to receiving waterbodies. Regular cleaning and reporting on same already forms part of annual (AER) reporting submitted to EPA. All Silt Ponds at Castlegar Bog are currently compliant with EPA requirements. **Table 16** of the NIS, reproduced overleaf, and Figure 12 of the NIS below, reproduced from the NIS, summarise and illustrate the onsite Silt Pond locations, the latter also illustrates the current flow regime within the main drainage network (into which any other drains also feed). Continued maintenance and reporting on same will be reported on annually until IPC license Surrender.

² <https://www.biodiversityireland.ie/projects/invasive-species/crayfish-plague/>

Table 16 Silt Ponds in use at Castlegar Bog

Bog Name	IPC License Reference	Pond No.	Area (m ²)	Volume (m ³)
Castlegar Bog	502	CG236_7	1573	2359
Castlegar Bog	502	CG235	1535	2302
Castlegar Bog	502	CG235A	4315	6472
Castlegar Bog	502	CG229	2171	3256
Castlegar Bog	502	CG230_1	1012	1518
Castlegar Bog	502	CG232	209	314
Castlegar Bog	502	CG233	139	208
Castlegar Bog	502	CG234	148	222
		Total	11101	16651

The above capacity is considered sufficient for the purposes of decommissioning and rehabilitation.

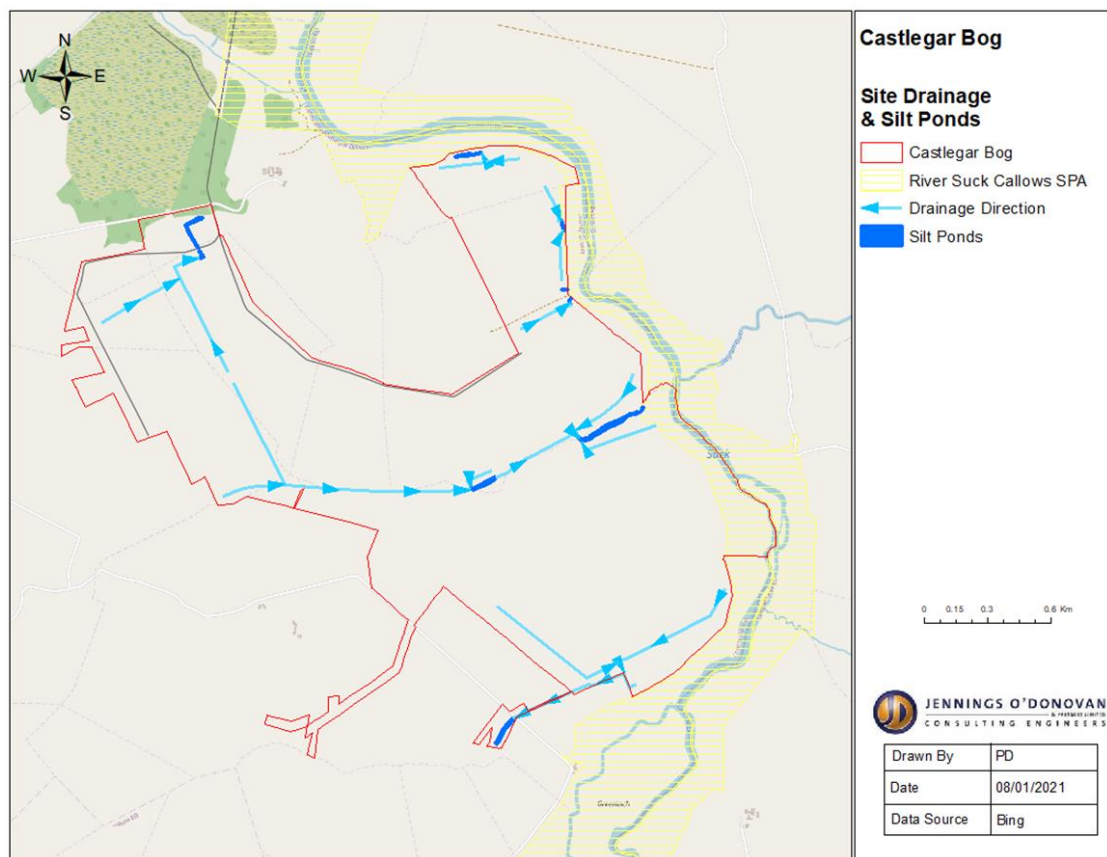


Figure 12 (of the NIS): Castlegar Bog Site Drainage and Silt Ponds

3.1.5 Cleaning Silt Ponds

Cleaning of silt ponds will follow the below best practice measures.

- Cleaning of silt ponds will align with best practice measures, including BnM Standard Operating Procedures (SOPs) for works within and near watercourses, works with hydrocarbons, biosecurity measures when working at and different watercourses and waterbodies..
- The cleaning of silt ponds will be restricted to periods outside the migration period and over-wintering period for non-breeding wetland bird species, which is from September to mid-May.
- Cognisance of capture of non-target aquatic species (Crayfish, lamprey, small fish etc.) within the dredged material and the secure rescue and translocation of these species downstream of the pond cleaning works in line with IFI guidance. Cleaning of silt ponds will be completed under licence (following consultation with IFI) and in accordance with strict biosecurity measures. Silt ponds will be cleaned from the inlet point to the outlet point allowing fish and aquatic life to migrate downstream as the works progress. The silt pond cleaning works and species translocation efforts will be overseen by a suitably qualified Ecologist/Ecological Clerk of Works/Environmental Supervisor and ongoing monitoring undertaken by the project ecologist.
- Excavated silt material will be placed at least 20m away from the blue line feature and will be deposited into corralled berms and thereafter secured into the nearby ground with the back of the machine excavator bucket, to ensure particulate matter is not mobilised during or following rainfall events.

3.1.6 Measures to avoid runoff when carrying out rewetting of peat

- All Silt ponds will be cleaned prior to the commencement of upstream drain blocking.
- When blocking drains or carrying out any activities which involve the potential movement of peat, terminal blocks i.e. the blocks at the extremity of the drain and closest to any hydrologically connected watercourses, will be blocked first with AT MINIMUM 2 IN SERIES STANDARD BLOCKS, to prevent sediment release from subsequent block insertion.
- Blocks will be inspected during periods of dry weather to ensure no 'cracking' of peat has occurred which might allow for discharge.
- Discharge from all rehabilitated areas will be directed into silt ponds.
- Outfalls and overflow pipes from e.g. bunded cells will be directed into silt ponds.
- An Emergency Response Plan has been prepared to set in place an effect approach to respond to any inadvertent release of a large volume of sediment.
- The above will be overseen by a suitably qualified Ecologist

Implementation of the mitigation measures for the Decommissioning and Rehabilitation activities will be the responsibility of Bord na Móna Operations and supervision of the works will be carried out by this Bord na Móna Department incorporating Area leaders, Operations Managers and Project Supervisor Construction Stage (PSCS).

In addition, implementation of the mitigation measures will be monitored and inspected by Bord na Móna Environmental, Ecology and Engineering Departments, who are independent of Bord Na Móna Operations. Project Ecologists, Engineers and Environmental Compliance Officers will be appointed

for each bog and they will ensure that measures are carried out in accordance with an Site-Specific Environmental Management Plan which sets out the required mitigation measures for each bog. The Ecologist, Environmental Compliance Officer, Engineer, H & S Manager, Site Supervisor and PSCS will have a 'stop works' authority.

3.1.6 Measures to avoid changes to hydrological regime

- Peripheral drains will be maintained and where required, additional drains will be provided, to create hydraulic barriers
- Specified internal drains will be maintained to avoid flooding where required to maintain existing drainage of adjacent lands. In some instances this may include re-grading or widening of specific existing drains which currently act as preferential flow paths through the bog.
- Monitoring of adjacent lands will be undertaken during the operation phase of the PCAS.

3.1.7 Measures to avoid polluted runoff in the event new drains are required or existing drains require upgrade

- Where existing drains require upgrading, barriers to control the flow of sediment downstream along the drain will be installed prior to the commencement of upgrade works.
- The barrier will comprise in the installation of at minimum 2 in series standard blocks at the downstream end of the stretch of drainage channel to be upgraded. The 2 standard blocks will be installed upstream of the receiving drainage network downstream of the channel that is to be upgraded.
- The two standard blocks will be installed during low, ebb flows in the drain prior to the commencement of upgrade works.
- The 2 drain blocks may need to be installed well in advance of the drainage channel upgrade works during ebb flows.
- The build-up of silt material upstream of the 2 standard blocks will be monitored during upgrade works and the silt material will be removed from the drainage channel during works as it builds up. The material will be compacted into the adjacent field, a minimum of 10m from the nearest drain.
- Blocks will be inspected during periods of dry weather to ensure no 'cracking' of peat has occurred which might allow for discharge.
- Upon completion of the upgrade works all silt will be removed from the drainage channel immediately upstream of the 2 standard drain blocks prior their removal. The 2 standard drain blocks will only be removed once all upgrade works are completed.
- Where a new drain is required, it will be formed and established prior to connecting the drainage channel to wider drainage network. Only once it has formed and become established, with the bed and banks stabilised will it be connected to the wider drainage network. This approach will minimise to a negligible level the potential for suspend solids

to be generated in waters within the new drainage channel and conveyed downstream to the River Suck Callows SPA.

- An Emergency Response Plan will be available in the event of any inadvertent release of a large volume of sediment.
- The above will be overseen by a suitably qualified Ecologist/Ecological Clerk of Works.

Implementation of the mitigation measures for the Decommissioning and Rehabilitation activities will be the responsibility of Bord Na Móna Operations and supervision of the works will be carried out by this Bord na Móna Department incorporating Area leaders, Operations Managers and Project Supervisor Construction Stage (PSCS).

In addition, implementation of the mitigation measures will be monitored and inspected by Bord na Móna Environmental, Ecology and Engineering Departments, who are independent of Bord Na Móna Operations. Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Castlegar bog and they will ensure that measures are carried out in accordance with an Site-Specific Environmental Management Plan which sets out the required mitigation measures for each bog. The Ecologist, Environmental Compliance Officer, Engineer, H & S Manager, Site Supervisor and PSCS will have a 'stop works' authority.

3.1.8 Measures to Ensure all Berms & Drain Blocks are Fit for Purpose

An engineering specification for berms and drain blocks has been prepared for the Castlegar Rehabilitation Plan is provided as Appendix E to the Natura Impact Statement. As noted in the engineering specification the berms to be provided at Castlegar Bog are shallow at 300mm and their failure has not been identified as a risk. The possible failure of drain blocks has been identified as a at Castlegar Bog with associated downstream risks to the River Suck.

As shown on Figure 8 of the NIS a 1m high berm will be provided to protect marginal lands in WLT-3. The risk of berm failure was identified during the screening of the Castlegar Bog PCAS. Mitigation measures through design and through maintenance and avoidance will be implemented in order to ensure berm failure is avoided at Castlegar Bog.

The following measures will be implemented as part of the mitigation through design:

- It is recognized that consistency of peat and or sub-soil and its compaction in layers is important, resulting in a robust trench and berm mitigating water seepage. It should be firm enough to be shaped and compacted. Adequate compaction of the peat will be ensured.
- Prior to infilling, any loose or dried out peat in the base or sides of the drain should be removed to ensure a tight seal mitigating water seepage.
- Peat Berms are constructed circa 1000mm higher than the adjacent ground level to protect marginal lands. They are not designed to hold significant volumes of deep water and water levels will be managed at an appropriate level using pipes. They are designed to a width of 5m to be robust strong structures.

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- The berm installation process includes a key formation in the drains. A 500mm deep key is formed by taking a strip of peat from the field and pushing it in to the drain where it is compacted by the bulldozer ensuring a tight seal. The excavator trims and shapes the completed berm avoiding presence of loose material exposed to wind erosion.
 - Operators assigned to this work element are familiar with the technique and process and provide effective robust berms. The operators are experienced and capable of adapting to the particular conditions encountered within the bog.
 - Qualified, experienced Engineers overseeing the works during the installation phase ensure that quality procedures of the various elements are implemented and effectively meet the standards for quality service and performance.

The following measures will be implemented through maintenance and avoidance:

- A post construction lidar and imagery survey will capture the impact of the completed rehabilitation measures indicating if any appropriate remedial action is required or deemed necessary.
- As peat berms are designed to retain a shallow level of water on the cutover there will be a reduction in discharge into the boundary drains preventing any negative impacts on adjacent agricultural land. (See below 'Emergency Failure Response' outlining mitigation measures to be put in place should any risks of undesirable hydrological impacts occur).

Emergency Response Plan

The Emergency Response Procedure is included in Appendix B of the NIS and outlines the procedures to be implemented in the event of a Peat Spillage as follows:

- Isolate the source of peat spillage the source of which could include a silt pond failed berm or failed drain block.
- Assess the extent of the peat spill and follow to local receiving waters.
- Switch off any associate bog pumps.
- Construct dry peat berms around extent of peat flow and monitor.
- If the peat spillage is assessed to have the potential to extend to a receiving water deploy a silt curtain on the receiving water.
- Continue clean as instructed by/under direction of Local Authority/ Inland Fisheries Ireland / EPA.

3.1.12 Measures to avoid disturbance or displacement to SCI bird species

Birds

- An Ecological Restriction Zone will be in place which includes the area within 150m of the River Suck Callows SPA boundary and the main silt pond (Pond No. CG235A, where Wigeon, Mallard and Coot were observed) where pathways for effects to SCI's have been identified – See

Figure 13 of the NIS , reproduced overleaf. It is noted that this ERZ distance of 150m is greater than the MAD noted for these species thus providing for a robust ERZ to ensure disturbance to these species are avoided. It is also noted that the ERZ extends to the east into the River Suck Callows SPA and the area of PCAS marginal land MLT1. Figure 13 shows this area, however it is again noted that there are no works associated with MLT1 and there will be no PCAS activities carried out in MLT1 areas to the east of the silt pond.

- The implementation of the ERZ will be overseen by the Project Ecologist.
- Once the ERZ is operational, no PCAS scheme activities will take place within the prescribed zone. Travel and access within these sections of the site to undertake cleaning or maintenance activities may be permitted as they are likely to be intermittent, short term and of low intensity and duration. General usage will be restricted to use of existing rail (if present) and travel passes. All will be overseen by the Project Ecologist
- The timing restrictions associated with the ERZ will be communicated to staff through toolbox talks, incorporated into the EMP for the project and visual markers will be placed on the peat extraction area to delineate the avoidance zone.
- Locations of these restriction zones will also be presented to the machine drivers via the built-in GPS tablet and ESRI application and the machine drivers will use this technology to avoid entering any restricted areas.
- Conformance will be audited through compliance checks by the Project Ecologist (with 'stop-works' authority).

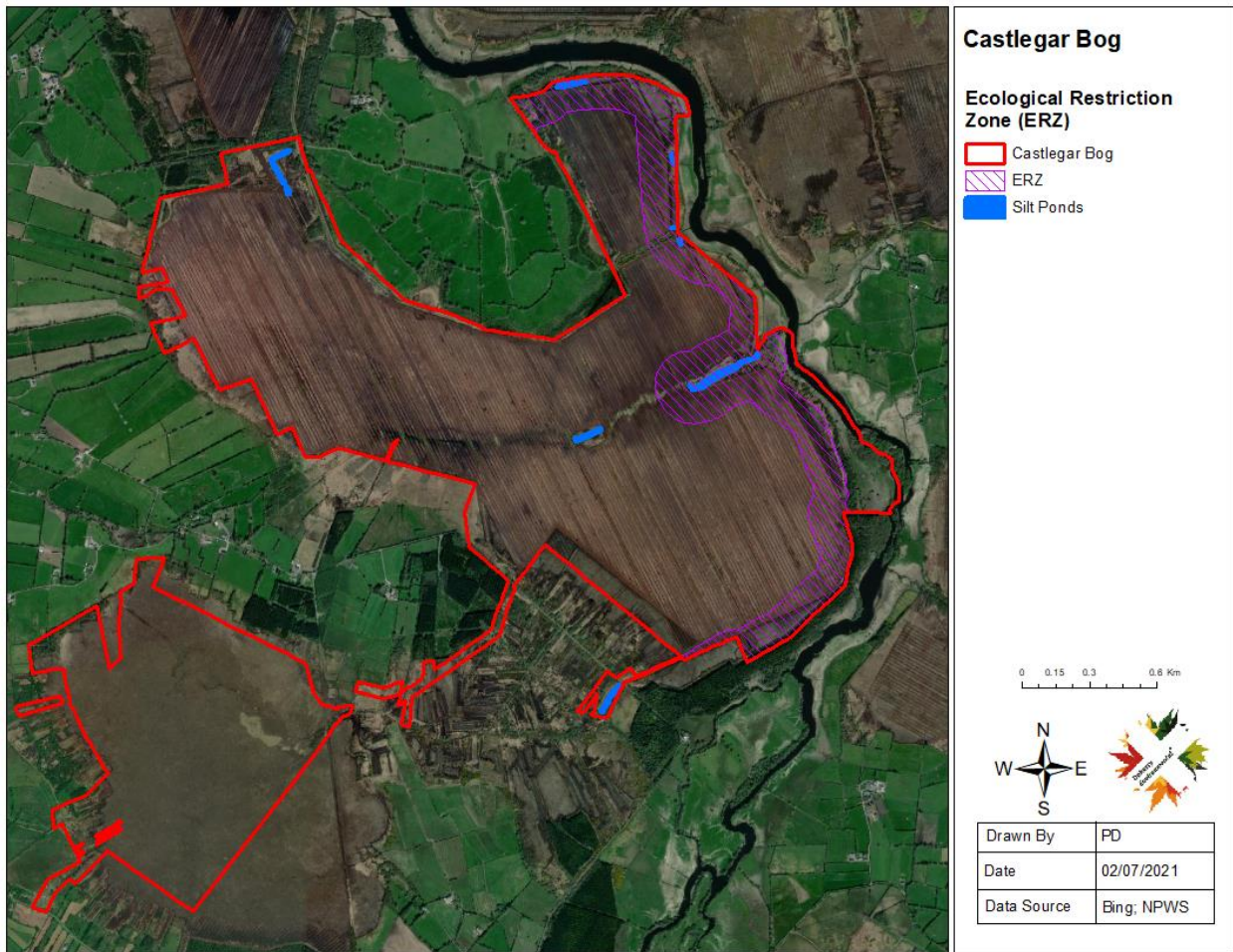


Figure 13 of the NIS: Ecological Restriction Zone in respect of Birds

3.2 Effectiveness of these Measures

The Mitigation Measures (Project Design Measures, Management Plans, Environmental Emergency Response Measures and Best Practice Measures), listed above, have been developed by the hydrological/drainage and ecological expert members of the Decommissioning and Rehabilitation project team in Bord na Móna and use best practice water quality protection techniques which are tried and tested regularly across the country. Furthermore, Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Castlegar bog and they will monitor the effectiveness of these measures throughout the implementation of the PCAS at Castlegar bog.

The watercourse crossing, drainage and water quality measures have been developed using relevant legislation, guidance and literature including:

3.2.1 Guidance

- Inland Fisheries Ireland (2016) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters;
- NRA (2008) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes; and,

- OPW (2013) Construction, Replacement or Alteration of Bridges and Culverts.
- Brew, T. & Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction
- EPA Ireland; Managing the Impact of Fine Sediment on River Ecosystems

Pollution Prevention Guidance Notes (PPGs) & Guidance for Pollution Prevention (GPP)³

- PPG 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- PPG 3: Use and design of oil separators in surface water drainage systems
- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 19: Vehicles: Service and Repair
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers
- PPG 27: Installation, decommissioning and removal of underground storage tanks

Construction Industry Research and Information Association (CIRIA)⁴

- CIRIA Report C502 Environmental Good Practice on Site;
- CIRIA Report C532 Control of Water Pollution from Construction Sites: Guidance for consultants and contractors;
- CIRIA Report C648 Control of Pollution from Linear Construction Project; Technical Guidance;
- CIRIA Handbook C650 Environmental good practice on site;
- CIRIA Handbook C651 Environmental good practice on site checklist;
- CIRIA Report C609 - SuDS – hydraulic, structural & water quality advice; and,
- CIRIA Report C697 – The SuDS Manual.

Invasive Species Guidance

- Managing Japanese knotweed on development sites - The Knotweed Code of Practice produced by the Environmental Agency (2013)⁵;

³<https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-pgps-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>

⁴ Available from <https://www.ciria.org/>

⁵ <http://cfinns.scr.t.co.uk/wp-content/uploads/2014/06/2013-code-of-practice.pdf>

- NRA Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010)⁶;
- Managing Invasive Non-native Plants in or near Freshwater, Environment Agency (2010)⁷;
- Best Practice Management Guidelines Japanese knotweed *Fallopia japonica*, Invasive Species Ireland (2015);
- IFI Biosecurity Protocol for Field Survey Work, Inland Fisheries Ireland (2010⁸).

Guidance relating to Bird Disturbance

- Livesey et al., (2016) Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. *Journal of Fish and Wildlife Management* 7: 181–191.
- Scottish National Heritage (2009) Monitoring the impact of onshore wind farms on birds - January 2009. Guidance Note.
- Scottish National Heritage (2016) Dealing with Construction and birds. Guidance Version 3.
- Scottish National Heritage (2017) Survey Methods for Use in Assessing the Impacts of Onshore Windfarms on Bird Communities. Version 2. <https://www.nature.scot/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>

Guidance relating to Mammal Disturbance

- OPW (2013) Construction, Replacement or Alteration of Bridges and Culverts⁹.
- Brew, T. & Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction
- National Roads Authority. Guidelines for the treatment of Otters prior to the construction of National Road Schemes. <https://www.tii.ie/tii-library/environment/construction-guidelines/Guidelines-for-the-Treatment-of-Otters-prior-to-the-Construction-of-National-Road-Schemes.pdf>

3.3 Implementation of Mitigation Measures

The Mitigation Measures (Project Design measures, Management Plans, Environmental Emergency Procedures and Best Practice Measures) will be implemented by the Project Manager/PSCS and BnM Project Staff during the Decommissioning and Rehabilitation stage. Implementation of the Mitigation Measures, will be implemented under an Environmental Management Plan for Edera Bog Decommissioning and Rehabilitation.

Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Edera bog and they will monitor the compliance with all mitigation measures through liaising with the Construction Site Manager/PSCS and the Project Manager, monitoring construction works on a regular basis and by carrying out regular audits on compliance with mitigation measures.

⁶<https://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

⁷ <https://www.midsussex.gov.uk/media/1725/managing-invasive-non-native-plants.pdf>

⁸ <https://www.fisheriesireland.ie/Biosecurity/biosecurity-protocol-for-field-survey-work.html>

⁹<https://www.gov.ie/en/publication/957aa7-consent-requirements-constructionalteration-of-watercourse-infrastru/>

3.4 Degree of confidence in the likely success of the mitigation measure

All protection measures have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and field baseline verification. As such there is a very high degree of confidence in their likely success.

3.5 Monitoring of the Implementation and Effectiveness of the Mitigation Measures

A degree of Monitoring is required under Condition 10.1 of the IPC license under which Peat Extraction and now Decommissioning and Rehabilitation is to take place. This environmental monitoring carried out during the aftercare and maintenance period of Decommissioning and Rehabilitation, has to ensure no Environmental Pollution has been caused, and is subject to an Independent Closure Audit (ICA) followed by an EPA Exit Audit (EA) in order to facilitate IPC License surrender.

This programme for monitoring, aftercare and maintenance has been designed to meet the Conditions of the IPC Licence and is defined as:

- There will be **initial quarterly monitoring assessments** of the site to determine the general status of the site, the condition of the silt-ponds, assess the condition of the rehabilitation work, monitoring of any potential impacts on neighbours land, general land security, boundary management, dumping and littering.
- The number of these site visits will reduce after 2 years to bi-annually and then after 5 years to annual visits.
- These monitoring visits will also consider any requirements, if required, for further practical rehabilitation measures.
- The **baseline condition of the site will be established** post-rehabilitation implementation by using an aerial drone survey to take an up-to-date aerial photo, when rehabilitation is completed. The extent of bare peat will be assessed using this baseline data, and habitat maps will be updated, if required.
- **A water quality monitoring programme** at the bog will be established. The main objective of this water quality monitoring programme will be to establish a baseline and then monitor the impact of peatland rehabilitation on water quality from the bog. Monitoring of key environmental variables will include: Ammonia, Phosphorous, Suspended solids (silt), pH and conductivity. Water quality samples will be collected from the main drainage system from the bog at a designated point, before water leaves the site. Water quality samples will be collected at monthly intervals during rehabilitation and for 2 years thereafter. Results will be reviewed for potential exceedances of SSCO thresholds likely to result in negative quality effects on downstream European Site targets.
- If, after three years, key criteria for successful rehabilitation are being achieved and critical success factors are being met, then the water quality monitoring programme will be reviewed, with consideration of potential ongoing research on site. The water quality data, the drone surveys and the habitat mapping will be collated and will be submitted to the EPA as part of the final validation report.
- If, after three years, key criteria for successful rehabilitation have **not** been achieved and critical success factors have **not** been met, then the rehabilitation measures and status of the site will be evaluated and enhanced, where required. This evaluation may indicate no requirement for additional enhancement of rehabilitation measures but may demonstrate that more time is required before key

criteria for rehabilitation has been achieved. Monitoring of water quality will then also continue for another period to be defined.

- Where other uses are proposed for the site, these will be assessed by Bord na Móna in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the appropriate assessment process and planning procedures.

A Monitoring and Verification Plan has been prepared for the PCAS at Castlegar Bog and is presented as Appendix F to the Natura Impact Statement. The Monitoring and Verification Plan outlines in detail the monitoring and verification that will be implemented to verify the outcomes of the PCAS at Castlegar Bog.

As part of the Monitoring and Verification Plan Biodiversity Surveys will be completed during the operation phase. The type surveys which will include both breeding and wintering bird surveys as well as vegetation and pollinator surveys, to be completed and their schedule during the operation phase of the PCAS is outlined in Table 18 of the NIS, reproduced below:

Castlegar Bog (key biodiversity metrics)	2021	2022	2023	2024
Vegetation quadrats	X	X	X	X
Breeding birds	X	X	X	X
Wintering birds	X	X	X	X
Pollinators	X	X	X	X

3.6 How any mitigation failure will be addressed

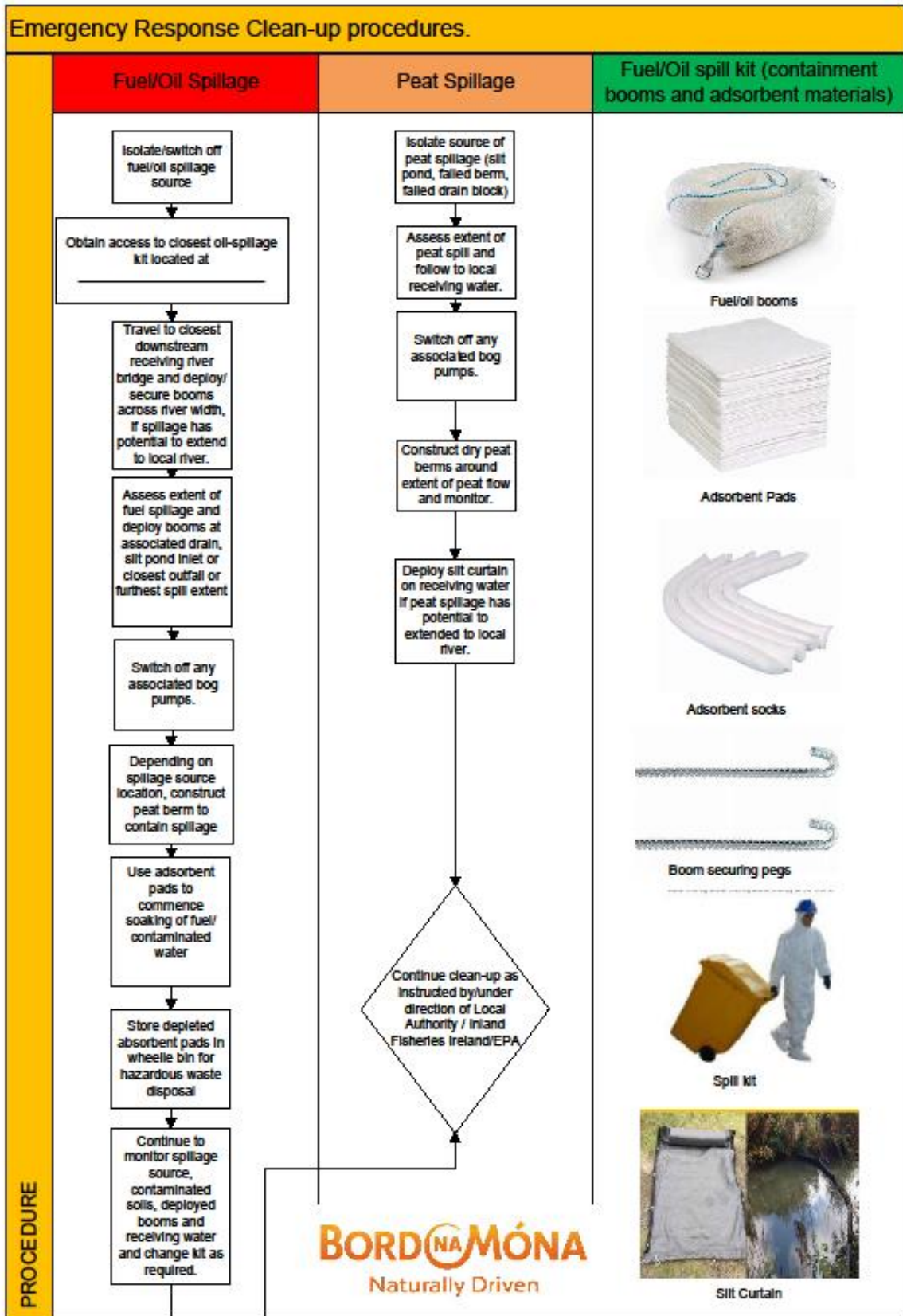
The Mitigation measures prepared specifically for this project have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and Best Practice. The Mitigation Measures are considered to be robust and proven measures which will avoid adverse effects to European Sites.

An Emergency Response Plan has been prepared (Appendix 1) so that an effective response to unforeseen events such as a berm failure can be put in place. The implementation of emergency response measures will ensure that such events are contained and do not result in significant adverse effects to Lough Ree SAC or SPA.

On this basis, it can be confidently concluded that failures in the mitigation measures and their prescribed outcomes will be avoided.

Nonetheless contingency measures will be in place for unforeseen events such as oil/fuel spillages, water pollution or any inadvertent release of sediment. This will ensure any unforeseen potentially adverse effects are identified in a timely manner and appropriate remedial action taken immediately. The Project Ecologists, Engineers and Environmental Compliance Officers will have a ‘stop-works’ authority to temporarily stop works over part of the site to avoid an infringement of the Environmental Commitments or an unforeseen environmental event. Works will not be allowed to re-commence until the issue is resolved.

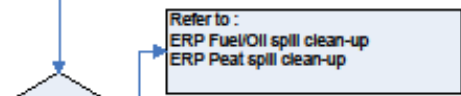
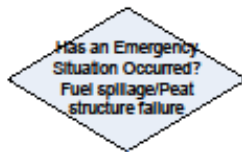
Appendix 1



EP 5.0 General Emergency Response (IPC Licence Condition 13)

Condition 13 Emergency Response

13.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment.



Refer to:
ERP Fuel/Oil spill clean-up
ERP Peat spill clean-up

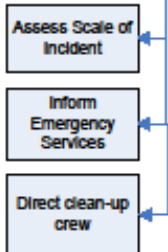
(xii) Effective spill/leak management of mobile fuelling units.



9.1.1 No potentially polluting substance or matter shall be permitted to discharge to off-site surface waters, off site storm drains or groundwaters.

9.1.13 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage.

Notify Compliance Department



The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

4.1.1 Any release to atmosphere resulting in significant impairment of, or significant interference with amenities or the environment.

4.1.2 Any emission which does not comply with the requirements of this licence.

4.1.3 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by a Local Authority.

The licensee shall include as part of the notification, date and time of the incident, details of the occurrence, and the steps taken to minimise the emissions and avoid recurrence.

In absence of Compliance Officer – Operations Manager shall assume this role

4.2 The licensee shall make a record of any incident as set out in Condition 4.1 above. The notification given to the Agency shall include details of the circumstances giving rise to the incident and all actions taken to minimise the effect on the environment and minimise wastes generated.

4.3 A summary report of reported incidents shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.

4.4 In the case of any incident as set out in Condition 4.1 above which relates to discharges to water, the licensee shall notify the appropriate Regional Fisheries Board, as soon as practicable after such an incident.

4.5 In the event of any incident, as set out in Condition 4.1.3 having taken place, the licensee shall notify the appropriate Local Authority as soon as practicable, after such an incident.

4.6 In the case of any incident, as set out in Condition 4.1.3, which has the potential to impact the conservation objectives of the Special Areas of Conservation and Natural Heritage Areas identified in Attachment 10.1 of the IPC application having taken place, the licensee shall notify Dúchas of the Department of Arts, Heritage, Gaeltacht and the Islands as soon as practicable after such an incident.

Compliance Officer records details of Incident as required on Aider

Reportable Environmental Incident?



Report to EPA via EDEN and Phone Call (056 7796700)

Out of Hours Emergency?

Complete EPA Incident Notification Form on Eden <https://www.edenireland.ie/>



Contact Designated On-Call Person (056 7796700)

