Screening Determination Statement

The assessment of significance of effects:

Describe how the proposed development (alone or in-combination) is/is **not likely** to have **significant** effects on European site(s) in view of its conservation objectives.

The potential impacts of the proposed borehole drilling at Inch, Co. Kerry has been considered in the context of the relevant identified European Sites, their Qualifying Interests and Special Conservation Interests and any Conservation Objectives which have been set.

From the findings of the Screening exercise, it is concluded that the proposed project is not directly connected with or necessary to the management of any European site.

Therefore, an Appropriate Assessment Screening was prepared to identify the potential for likely significant effects on the qualifying features of any European Sites.

The findings of the screening exercise determined that drilling activities and ongoing monitoring will not give rise to potential significant effects on the Qualifying Interests or Special Conservation Interests of any European site.

Having regard to the methodology employed and the findings of this screening exercise, it has been concluded that Stage 2 Appropriate Assessment is not required in accordance with Section 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Conclusion:

	Tick as Appropriate:	**Recommendation:**
(i) It is clear that there is **no likelihood** of significant effects on a European site.	✓	The proposal can be screened out: Appropriate assessment not required.
(ii) It is **uncertain** whether the proposal will have a significant effect on a European site.		.. Request further information to complete screening .. Request NIS .. Refuse planning permission
(iii) **Significant effects** are likely.		.. Request NIS .. Refuse planning permission
Signature and Date of Recommending Officer:	Ted McCormack	
Signature and Date of the Decision Maker:		

National Parks and Wildlife Service

Drilling of boreholes at Inch, Co. Kerry

Report to inform Screening for Appropriate Assessment

794-NI-WAE-02225

F02

27 May 2026

TETRA TECH

Tetra Tech Belfast, Elmwood House, 74 Boucher Road, Belfast, BT12 6RZ, Northern Ireland

Tetra Tech Consulting Limited. Registered in England: No.01470149
Registered Office: 101 Park Drive, Milton Park, Abingdon, Oxfordshire, England, OX14 4RY

Document status

Document status					
Version	**Purpose of document**	**Authored by**	**Reviewed by**	**Approved by**	**Date**
F02	Final	AMcF/FM	FM	FM	27/05/2026

FM		27/05/2026

This report was prepared by Tetra Tech within the terms of Tetra Tech engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by Tetra Tech's client. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. Tetra Tech does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by	Prepared for
Tetra Tech	National Parks and Wildlife Service

Table of contents

1.0 Introduction 1
1.1 Appropriate Assessment 1
1.2 Screening for Appropriate Assessment 2
1.3 Appropriate Assessment 2
1.4 The Appropriate Assessment Process 3
2.0 Appropriate Assessment Methodology 4
2.1 Guidance on Appropriate Assessment 4
2.2 Likely Significant Effect 5
2.3 Mitigation Measures 5
2.4 Consideration of Ex-situ Effects 6
2.5 Conservation Objectives for European Sites 6
2.6 Consideration of In-combination Effects 7
3.0 Project Description 9
3.1 Installation method 11
4.0 Screening for Appropriate Assessment 14
4.1 Management of the European Site 14
4.2 Establishing an impact pathway 14
5.0 Screening impacts on European Sites 28
5.1 Potential for direct habitat loss 28
5.2 Potential for direct mortality 30
5.3 Potential for hydrogeological disturbance on European Sites 30
5.4 Potential for water quality impacts on European Sites 31
5.5 Potential for disturbance of SCI species 32
5.6 In-combination with other plans and projects 32
6.0 Appropriate Assessment Screening Conclusion 34
7.0 References 35

List of tables

Table 4-1 Summary of European Sites and their qualifying features within the zone of influence of the proposed project 16

List of figures

Figure 3-1 Site location at Inch, Co. Kerry illustrating the proposed access route and maximum extents of the drilling areas. 9

Figure 3-2 Boart Longyear LF90D Truck Mounted Drill Rig.....11

Figure 3-3 Left: Example of Protective Steel Casing. Right: Example of wooden bollards. .13

Figure 5-1 Proposed drilling sites and most recent habitat mapping (based on Ryle *et al*., 2009) 28

1.0 Introduction

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) introduced an obligation for Member States to establish Sites of Community Interest (SCIs) representing areas of high importance for rare and threatened habitats and species, and together comprising a network of 'Natura 2000' sites across the EU. The Natura 2000 network of sites in Ireland includes Special Areas of Conservation (SACs), designated under Irish legislation transposing the Habitats Directive, as well as Special Protection Areas (SPAs), as classified under the Birds Directive (Directive 2009/147/EC) and designated under Irish legislation; together these can be referred to as European sites. SACs have been designated for the conservation of Annex I habitats and Annex II species considered to be of community importance for conservation, while SPAs have been designated for the conservation of Annex I birds and other regularly occurring migratory birds and their supporting habitats. Those considered representative for site designation are termed Qualifying Interests (QIs) for SACs, and Special Conservation Interests (SCIs) for SPAs; for each site conservation objectives have been established to provide protection.

Tetra Tech Consulting Limited (Tetra Tech) was commissioned by NPWS to prepare a report to inform Screening for Appropriate Assessment in relation to the proposed drilling and installation of two borehole pairs at Inch, Co. Kerry.

This report aims to inform Appropriate Assessment Screening to establish the potential for likely significant effects from the proposed project on the network of European Sites.

This report provides relevant information to the Competent Authority in order for it to determine whether the Proposed Works are likely to have a significant effect on the integrity of any European site.

1.1 Appropriate Assessment

The 'Habitats Directive' (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) provides a framework for the legal protection of habitats and species of European importance. Under the articles of the Directive, it is necessary to undertake an **appropriate assessment** of a plan or project to determine whether it will have a 'likely significant effect' on sites designated at an international level for their nature conservation value. Article 6(3) of the Habitats Directive requires that –

> *"Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will*

not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Thus, Article 6(3) provides a two-stage process:

a) The first stage involves a screening for appropriate assessment; and

b) The second stage arises where, having screened the proposed development, the competent authority determines that an appropriate assessment is required, in which case it must then carry out that appropriate assessment.

For the purposes of applications for planning permission, Part XAB of the 2000 Act implemented the obligations under Article 6(3) into Irish law. In relation to other permitting regimes or where the competent authority is the project proponent, the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended ("the 2011 Regulations"), transpose those obligations.

1.2 Screening for Appropriate Assessment

Section 177U of the 2000 Act requires *inter alia* that a screening for appropriate assessment of an application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on a European site. While the provisions of section 177U adopt the terminology used in Article 6(3) of the Habitats Directive in terms of the test for screening, section 177U expands on this, in light of the interpretation given in decisions of the Court of Justice of the European Union. Thus, section 177U gives effect to the requirement to screen an application for development consent for appropriate assessment by assessing whether the proposed development is likely to have a significant effect on a European site by considering whether such a significant effect can or cannot be excluded.

Regulation 42 of the 2011 Regulations requires *inter alia* that screening for appropriate assessment of a project, which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that project, individually or in combination with other plans or projects, is likely to have a significant effect on the European site.

1.3 Appropriate Assessment

Section 177V of the 2000 Act requires *inter alia* that an appropriate assessment carried out by the competent authority shall include a determination under Article 6(3) of the Habitats Directive as to whether or not a proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority where it has made a determination under section 177U(4) that an appropriate assessment is required, before consent is given for the proposed development.

1.4 The Appropriate Assessment Process

According to European Commission guidance documents '*Assessment of plans and projects significantly affecting Natura 2000 sites'* (EC, 2001) and '*Managing Natura 2000 sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC'* (EC, 2019), the obligations arising under Article 6 establish a step-wise procedure as follows:

- The first part of this procedure consists of a pre-assessment stage ('screening') to determine whether, firstly, a plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by the first sentence of Article 6(3).
- The second part of the procedure, governed by the second sentence of Article 6(3), relates to the appropriate assessment and the decision of the competent national authorities.
- A third part of the procedure (governed by Article 6(4)) comes into play if, despite a negative assessment, it is proposed not to reject a plan or project but to give it further consideration. In this case Article 6(4) allows for derogations from Article 6(3) under certain conditions.

The extent to which the sequential steps of Article 6(3) applies to a given plan or project depends on several factors, and in the sequence of steps, each step is influenced by the previous step. The order in which the steps are followed is therefore essential for the correct application of Article 6(3).

Each step determines whether a further step in the process is required. If, for example, the conclusion at the end of a Habitats Directive stage one screening appraisal is that significant effects on European sites can be excluded, there is no requirement to proceed to the next step.

2.0 Appropriate Assessment Methodology

2.1 Guidance on Appropriate Assessment

Appropriate Assessment Guidelines for Planning Authorities have been published by the Department of the Environment Heritage and Local Government (DEHLG, 2010a). In addition to the advice available from the Department, the European Commission has published a number of documents which provide a significant body of guidance on the requirements of Appropriate Assessment, most notably including, '*Managing Natura 2000 sites – the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*' (EC, 2019), which sets out the principles of how to approach decision making during the process, and updates the guidance taking into account current and relevant case law, including a number of recent judgements handed down in the European courts in respect of the interpretation of the Habitats and Birds Directives.

These principal national and European guidelines have been followed in the preparation of this stage one screening appraisal. The following list identifies these and other pertinent guidance documents:

- Communication from the Commission on the Precautionary Principle, Office for Official Publications of the European Communities, Luxembourg (EC, 2000a);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2019);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2021);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a);
- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DEHLG, 2010b);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);

- Marine Natura Impact Statements in Irish Special Areas of Conservation - A Working Document (NPWS 2012); and
- National Parks & Wildlife Service (2020) Guidance on Appropriate Assessment for Planning Authorities.
- Office of the Planning Regulator Practice Note (PN01) Appropriate Assessment Screening for Development Management' (OPR, 2021).

2.2 Likely Significant Effect

The Commission's 2018 Notice (EC, 2019) advises that the appropriate assessment procedure under Article 6(3) is triggered not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* threshold – thus, plans or projects that have no appreciable effect on the site are thereby excluded.

A likely significant effect is triggered when:

- there is a probability or a risk of a plan or project having a significant effect on a European site;
- the plan is likely to undermine the site's conservation objectives; and
- a significant effect cannot be excluded on the basis of objective information.

2.3 Mitigation Measures

In determining whether or not likely significant effects will occur or can be excluded in the stage one appraisal, measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. "mitigation measures") or best practice measures have not been taken into account in this screening stage appraisal. This approach is consistent with EU guidance and the case law of the Court of Justice of the European Union:

- In April 2018, the Court of Justice of the European Union issued a ruling in case C-323/17 People Over Wind & Peter Sweetman v Coillte Teoranta ("People Over Wind") that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

- The judgment in People Over Wind is further reinforced in EC (2019) and EC (2021) which refers to CJEU Case C-323/17.

2.4 Consideration of Ex-situ Effects

EC (2019) advises that Member States, both in their legislation and in their practice, allow for the Article 6(3) safeguards to be applied to any development pressures - including those which are external to European sites but which are likely to have significant effects on any of them.

The CJEU developed this point when it issued a ruling in case C-461/17 ("Brian Holohan and Others v An Bord Pleanála") that determined *inter alia* that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that an appropriate assessment must on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

In that regard, consideration has been given in this Habitats Directive stage one screening appraisal to implications for habitats and species located both inside and outside of the European sites considered in the screening appraisal with reference to those sites' Conservation Objectives where effects upon those habitats and/or species are liable to affect the conservation objectives of the sites concerned.

2.5 Conservation Objectives for European Sites

The conservation objectives for European sites are to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the site has been selected.

The favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing;
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status (or condition, at a site level) of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and

- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The published SSCO documents note that an appropriate assessment based on the most up to date conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. The most up-to-date Conservation Objectives for the European sites being considered in this appraisal have been applied to the analysis documented in this report and are clearly identified by their date of publication on a site-by-site basis. These were accessed from the National Parks and Wildlife Service (NPWS) website www.npws.ie in May 2026.

2.6 Consideration of In-combination Effects

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in the Commission's 2018 Notice (EC, 2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. Whilst the Directive does not explicitly define which other plans and projects are within the scope of the in-combination provision of Article 6(3), it is important to note that the underlying intention of this provision is to take account of cumulative impacts, and these will often only occur over time.

In that context, one can consider plans or projects which are completed, approved but uncompleted, or proposed. EC (2019) specifically advises that "*as regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced*".

OPR (2021) advises that plans and projects that are not yet proposed "*do not generally have to be taken into account in the assessment of in-combination effects, even if they are part of an overarching masterplan. The exception is where the project is considered to be functionally interdependent with the development before the competent authority*".

The Practice Note goes on to stipulate that in-combination effects must examine plans or projects that are:

- Projects completed;
- Projects approved but not started, or uncompleted;
- Projects proposed, i.e., for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined;
- Proposals in adopted plans; and
- Proposals in finalised draft plans formally published or submitted for consultation or adoption.

This report is based on a review of desktop data. No additional field surveys were carried out to inform this assessment.
Sources of information utilised for this report and accessed during May 2026 include the following:

- National Parks & Wildlife Service (NPWS) Designations Viewer;
- NPWS Site-specific conservation objectives and mapping (npws.ie);
- Site Specific Conservation Objectives -Spatial Data (March 2025) (npws.ie);
- National Biodiversity Data Centre (NBDC) Maps.

3.0 Project Description

The proposed project involves the drilling of two borehole pairs (shallow and deep) at Inch, Co. Kerry by the Geological Survey of Ireland (GSI). The monitoring boreholes will serve to record groundwater levels over time and will be incorporated in a strategic, national groundwater monitoring network which GSI plans to operate and maintain in the long-term (>20 years).

In addition, the recorded data will be used by NPWS to assess the influence of deep groundwater levels on the habitats, particularly the humid dune slacks and associated species at Inch, which will be used to inform conservation measures and management of the site in relation to the management of the fixed dunes and humid dune slacks.

The proposed monitoring boreholes will be drilled on the dune slacks at Inch, which is located within the boundary of Castlemaine Harbour SAC (000343) and Castlemaine Harbour SPA (004029). The selected drilling sites were agreed between personnel from GSI and NPWS based on optimum location for monitoring, incorporating the sensitivity of the site.



Figure 3-1 Site location at Inch, Co. Kerry illustrating the proposed access route and maximum extents of the drilling areas.

Castlemaine Harbour SAC (000343) is a large site located on the south-east corner of the Dingle Peninsula, Co. Kerry. It consists of the whole inner section of Dingle Bay, i.e. Castlemaine Harbour, the spits of Inch and White Strand/Rosbehy and a little of the coastline to the west. The River Maine, almost to Castlemaine, and much of the River Laune catchment, including the Gaddagh, Gweestion, Glanooragh, Cottoner's River and the River Loe, are also included within the site.

Inch Spit holds a fine sand dune system. It is one of the largest and best remaining dune systems in the country. Fore dunes are found on the western side of Rosbehy and Inch. In these younger, mobile dunes, Marram (*Ammophila arenaria*) is common, with Groundsel (*Senecio vulgaris*), Sea Rocket (*Cakile maritima*) and Dandelion (*Taraxacum agg.*) also present. Other characteristic species include Sand Couch (*Elymus farctus*), Lyme-grass (*Leymus arenarius*) and Sea Spurge (*Euphorbia paralias*). Fixed dune, a priority habitat under the E.U. Habitats Directive, is well-represented at the site, and in particular towards the tip of Inch Spit. Such areas support species such as Lady's Bedstraw (*Galium verum*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Wild Thyme (*Thymus praecox*), Kidney Vetch (*Anthyllis vulneraria)*, Wild Pansy (*Viola tricolor*), Biting Stonecrop (*Sedum acre*), Common Centuary (*Centaurium erythraea*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*) and Common Whitlowgrass (*Erophila verna*), among others. There is also a rich lichen and bryophyte flora.

The slightly damper conditions which prevail in dune slacks support Creeping Bent (*Agrostis stolonifera*), Crested Dog's-tail (*Cynosurus cristatus*), Glaucous Sedge (*Carex flacca*), Creeping Willow (*Salix repens*) and Jointed Rush (*Juncus articulatus*). The rare bryophyte Petalwort (*Petalophyllum ralfsii*), which is listed on Annex II of the E.U. Habitats Directive, has been recorded in this system. A smaller spit, with a similar diversity of dune types, occurs at Rosbehy on the southern shore, from where Yellow Centaury (*Cicendia filiformis*) and Knotted Pearlwort (*Sagina nodosa*) have been recorded from a dune slack along with other, more common, species.

Five plants listed in the Irish Red Data Book have been recorded at this site: Sea-kale, Corn Cockle (*Agrostemma githago*), Sea Pea, Pennyroyal (*Mentha pulegium*) and Irish Lady's-tresses (*Spiranthes romanzoffiana*). The three last-named are legally protected under the Flora (Protection) Order, 1999, as is the rare bryophyte, Petalwort which is a qualifying feature of the site. Other scarce species which occur here are Yellow Bartsia (*Parentucellia viscosa*), Laxflowered Sea-lavender (*Limonium humile*) and Blue-eyed-grass (*Sisyrinchium bermudiana*). Castlemaine Harbour is of major ecological importance. It contains a range of coastal habitats of excellent quality, including many that are listed on Annex I of the E.U. Habitats Directive, and two which are listed with priority status (fixed dunes and alluvial forests).

3.1 Installation method

Prior to drilling commencing, a temporary site boundary (approximately 20m x 20m) will be established around each borehole location and fenced off using heras fencing or similar. The drilling and installation activity will be conducted with GSI's drill rig (Figure 3-2**)**. The rig and all ancillary equipment and tools will be operated by GSI's experienced personnel. Additional plant and equipment required for the proposed works includes:

- GSI Vehicles (van or 4x4)
- Support Truck
- Water Pump
- Grout Plant



Figure 3-2 Boart Longyear LF90D Truck Mounted Drill Rig

Materials to be used during drilling and installation includes:

- Steel casing;
- Unplasticized polyvinyl chloride (uPVC) casing and screen;
- Sand;
- Cement;
- Bentonite pellets;
- Water (of potable quality).

All materials are inert.

All drilling will be undertaken with the rotary percussion method, which is the most common drilling method applied in Ireland for this type of installation. In the rotary percussion method, also referred to as the 'down the hole hammer' method, the drill bit at the end of drill rods is driven through subsoils and bedrock by compressed air. The diameter of the drill bit is 177.8 mm.

Drilling fluids or additives will not be used. Until the groundwater table is intercepted, the drilling process will produce *some* dust. In such temporary instances, water will be injected from the surface for dust suppression purposes.

There may be some discharge water and cuttings arising from the drilling process which in the absence of mitigation may be mobilised and reach Dingle Bay.

Upon mobilisation and set up, the sequence of drilling and installation activity for each borehole is outlined below.

Shallow Bedrock Borehole

- Conduct Symmetrix drilling with steel casing (254mm outer diameter, OD, and 200 mm inner diameter, ID), to a depth of approximately 1 m into competent bedrock;
- Install blank/solid unplasticized PVC (uPVC) casing (113.8mm OD and 103.8mm ID), fitted with a bottom plug/cap, to approximately 0.5 m above ground level;
- Grout the annulus outside the uPVC casing to ground level;
- Conduct 95mm Hyperbit drilling until first water strikes (<30m below ground level);
- Flush the resulting open borehole, using compressed air, to clean out fines;
- Remove the drill rods;
- Install a cover on the uPVC casing;
- Complete the ground surface finishing, including cement seal.

Deep Bedrock Borehole

- Conduct Symmetrix drilling with steel casing (254 mm OD and 200 mm ID) to a depth of approximately 1 m below the installed shallow bedrock borehole;
- Install blank/solid uPVC casing (113.8mm OD and 103.8mm ID), fitted with a bottom plug/cap, to approximately 0.5m above ground level;
- Grout the remaining annular space up to the ground level;
- Conduct 95mm Hyperbit system drilling until water strike (<60 m depth);
- Flush the resulting open borehole, using compressed air, to clean out fines;
- Remove the drill rods;
- Install a cover on the uPVC casing;
- Complete the ground surface finishing, including cement seal.

Precise drilled depths will be determined from observation and findings during the drilling process. At each borehole location, the first borehole will be drilled into the sand layer and installed as a shallow bedrock monitoring borehole, followed by the deeper bedrock

monitoring borehole (where conditions indicate that a deep well is not feasible due to conditions encountered during drilling of shallow wells then the deep well will not be drilled).

The boreholes will be completed with a protective steel casing which will extend approximately 1.0 m above ground surface and will be surrounded by wooden bollards (Figure 3-3). Upon completion, site restoration works will be undertaken to bring the site back to pre-drilling conditions and make the boreholes as discreet features in the landscape.



Figure 3-3 Left: Example of Protective Steel Casing. Right: Example of wooden bollards.

The boreholes will be drilled and installed in accordance with the document “Guidelines for Drilling Wells for Private Water Supplies”, as published by the Institute of Geologists of Ireland (IGI, 2007), which aims to provide maximum safety to groundwater from potential contamination sources. The design includes a sanitary seal that serves to isolate the open, vertical section of each monitoring borehole from ground surface.

Upon completion, a data logger and modem will be installed in each monitoring borehole for automatic recording of water level, temperature and electrical conductivity, with real-time data transmission to a GSI server. Hence, manual readings are not necessary, although periodic visits (1–2 per year) will be required for equipment calibration and maintenance purposes.

The drilling and installation process is expected to take a maximum of 5 days.

4.0 Screening for Appropriate Assessment

4.1 Management of the European Site

The first aspect of screening is to establish whether or not the proposed project is directly connected with or necessary to the management of any site as a European site. In this case, the drilling of boreholes to monitor groundwater levels at Inch, Co. Kerry is being undertaken to inform the relationship between groundwater levels and the associated dune slacks. It is therefore reasonable to conclude that the proposed activities are **directly connected with or necessary to the management of Castlemaine Harbour SAC as a European site**. Therefore, Appropriate Assessment is not required.

However, given the potential for drilling activity to impact on qualifying interests of the site and the overlapping SPA, a report to inform screening for appropriate assessment has been completed as a risk assessment exercise only to consider in view of best scientific knowledge and in view of the conservation objectives of those European sites considered, whether or not the project, individually or in combination with other plans or projects, is likely to have a significant effect on any European site.

4.2 Establishing an impact pathway

The likely significance of effects on any European site from drilling of boreholes at Inch was assessed using the source-pathway-receptor model. The ‘source’ is defined as the individual element of the proposed works that has the potential to impact on a European site, its qualifying features and its conservation objectives. The ‘pathway’ is defined as the means or route (proximity, hydrological/ hydrogeological, aerial, disturbance pathways) by which a source can affect the ecological receptor. The ‘receptor’ is defined as the Special Conservation Interests (of SPAs) or Qualifying Interests (of SACs) for which conservation objectives have been set for the European sites being screened. Each element can exist independently; however an effect is created when there is a linkage between the source, pathway and receptor.

The selection of European sites for stage one screening follows guidance from the OPR (OPR, 2021), in addition to the NPWS ‘Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities’ (DEHLG, 2010b); this guidance recommends that the zone of influence for a proposed development is established on a case-by-case basis following the source-pathway-receptor framework, rather than by arbitrary distances (e.g. 15km), and that the precautionary principle should be adopted in the consideration of sites.

In considering a suitable zone of influence of this project, the possible pathways of impact have been considered. Given the works are located within the boundary of Castlemaine Harbour SAC (000343), there is potential for direct loss of habitat from the proposed

activities. Therefore, direct habitat loss has been considered as relevant within 100m of all drilling operations and access across the SAC.

Hydrological impacts may extend downstream if there are changes to water quality from the proposed works. Given the location of the site at the coast such impacts are likely to be localised. Therefore, as a precautionary approach downstream sites within 5km have been considered in this assessment.

In addition, the proposed drilling activities have the potential to lead to hydrogeological impacts, by lowering of the regional groundwater level if for example drilling were to create an outlet for upwelling groundwater. Therefore, potential for hydrogeological impacts has been considered for groundwater-dependent European sites within 5km of the proposed installation locations.

In addition, there is potential for disturbance impacts to bird species that use the site. Given the short-term duration of drilling activities and the localised nature of the drilling Special Protection Areas within 10km have therefore been considered at screening stage, since beyond this distance, Special Conservation Interests of these sites are likely to simply avoid the drilling site and immediate surroundings temporarily during the days of installation.

Given the potential impact pathways outlined above, 2 no. SACs and 2 no. SPAs are considered to occur within the maximum potential zone of influence of the proposed project. Details of these sites, including Qualifying Interests/Special Conservation Interests and distance from the study area are found in Table 4.1.

Each European site was individually reviewed to identify whether there were potential impact pathways evident from the proposed drilling activities. The assessment reviewed the potential for:

- Direct habitat loss arising from the proposed drilling project (within 100m of the proposed drilling locations and access route)
- Water quality effects arising from the proposed drilling activities that may affect downstream Annex I habitats, or Annex II species via habitat deterioration (5km downstream).
- Hydrogeological disturbance to groundwater-dependent habitats and species within European sites within 5km of the site.
- Disturbance or displacement effects on SCI bird species in the vicinity of the site (10km radius).

Table 4-1 Summary of European Sites and their qualifying features within the zone of influence of the proposed project

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
Castlemaine Harbour SAC (000343) (0km)	Estuaries [1130]	To maintain the favourable conservation condition of Estuaries in Castlemaine Harbour SAC, which is defined by a list of 2 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Castlemaine Harbour SAC, which is defined by a list of 3 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	Annual vegetation of drift lines [1210]	To maintain the favourable conservation condition of Annual vegetation of driftlines in Castlemaine Harbour SAC, which is defined by a list of 6 attributes and targets.	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has not been mapped within 100m of the proposed drilling locations and access route, therefore this habitat can be excluded from further assessment.
	Perennial vegetation of stony banks [1220]	To maintain the favourable conservation condition of Perennial vegetation of stony banks in	Based on coastal habitat mapping within the site-specific conservation objectives for

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		Castlemaine Harbour SAC, which is defined by a list of 6 attributes and targets.	Castlemaine Harbour SAC, this habitat has not been mapped within 100m of the proposed drilling locations and access route, therefore this habitat can be excluded from further assessment.
	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	No site-specific conservation objective set.	No impact pathway; therefore, this habitat can be excluded from further assessment.
	Salicornia and other annuals colonising mud and sand [1310]	To maintain the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Castlemaine Harbour SAC, which is defined by a list of 10 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	To maintain the favourable conservation condition of Atlantic salt meadows in Castlemaine Harbour SAC, which is defined by a list of 10 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	To maintain the favourable conservation condition of Mediterranean salt meadows in Castlemaine Harbour SAC, which is	Potential for water quality impacts from runoff generated during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		defined by a list of 10 attributes and targets.	
	Embryonic shifting dunes [2110]	To maintain the favourable conservation condition of Embryonic shifting dunes in Castlemaine Harbour SAC, which is defined by a list of 7 attributes and targets.	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has been mapped within 100m of the proposed drilling locations and access route, therefore there is potential for direct habitat loss.
	Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]	To maintain the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* in Castlemaine Harbour SAC, which is defined by a list of 7 attributes and targets.	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has been mapped within 100m of the proposed drilling locations and access route, therefore there is potential for direct habitat loss.
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) in Castlemaine Harbour SAC, which is de	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has been mapped within

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		fined by a list of 9 attributes and targets:	100m of the proposed drilling locations and access route, therefore there is potential for direct habitat loss.
	Dunes with Salix repens ssp. argentea (*Salicion arenariae*) [2170]	To maintain the favourable conservation condition of Dunes with Salix repens ssp. argentea (*Salix arenariae*) in Castlemaine Harbour SAC, which is defined by a list of 10 attributes and targets.	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has been mapped within 100m of the proposed drilling locations and access route, therefore there is potential for direct habitat loss.
	Humid dune slacks [2190]	To maintain the favourable conservation condition of Humid dune slacks in Castlemaine Harbour SAC, which is defined by the following list of 11 attributes and targets.	Based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has been mapped within 100m of the proposed drilling locations and access route, therefore there is potential for direct habitat loss. Potential for hydrogeological impacts if there were significant

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
			changes in groundwater quantity and quality. Potential for water quality impacts from runoff generated during drilling activities.
	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	To restore the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* in Castlemaine Harbour SAC, which is defined by a list of 14 attributes and targets.	Based on woodland habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC, this habitat has not been mapped within 100m of the proposed drilling locations and access route, therefore this habitat can be excluded from further assessment.
	Sea Lamprey (*Petromyzon marinus*) [1095]	To maintain the favourable conservation condition of Sea lamprey in Castlemaine Harbour SAC, which is defined by a list of 5 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	River Lamprey (*Lampetra fluviatilis*) [1099]	To maintain the favourable conservation condition of River lamprey in Castlemaine Harbour SAC, which is defined by a list of 5 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
	Salmon (*Salmo salar*) [1106]	To maintain the favourable conservation condition of Salmon in Castlemaine Harbour SAC, which is defined by a list of 6 attributes and targets.	Potential for water quality impacts from runoff generated during drilling activities.
	Otter (*Lutra lutra*) [1355]	To restore the favourable conservation condition of Otter in Castlemaine Harbour SAC, which is defined by a list of 7 attributes and targets:	Potential for direct mortality during construction works. Potential for water quality impacts from runoff generated during drilling activities.
	Petalwort (*Petalophyllum ralfsii*) [1395]	To maintain the favourable conservation condition of Petalophyllum ralfsii in Castlemaine Harbour SAC, which is defined by a list of 3 attributes and targets:	Potential for direct disturbance as Petalwort is known to occur within the Humid dune slacks habitat at Inch and may occur within 100m of the proposed drilling locations based on coastal habitat mapping within the site-specific conservation objectives for Castlemaine Harbour SAC.
Slieve Mish Mountains SAC (002185) (1.1km)	Northern Atlantic wet heaths with *Erica tetralix* [4010]	To restore the favourable conservation condition of Northern Atlantic wet heaths with Erica tetralix in Slieve Mish Mountains SAC, which is defined by a list of 20 attributes and targets:	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
	European dry heaths [4030]	To restore the favourable conservation condition of European dry heaths in Slieve Mish Mountains SAC, which is defined by a list of 19 attributes and targets:	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
	Alpine and Boreal heaths [4060]	To restore the favourable conservation condition of Alpine and Boreal heaths in Slieve Mish Mountains SAC, which is defined by a list of 14 attributes and targets.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
	Blanket bogs (* if active bog) [7130]	To restore the favourable conservation condition of Blanket bogs (* if active bog) in Slieve Mish Mountains SAC, which is defined by a list of 19 attributes and targets.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
	Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110]	To maintain the favourable conservation condition of Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) in Slieve Mish Mountains SAC, which is defined by a list of 12 attributes and targets.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
	Calcareous rocky slopes with chasmophytic vegetation [8210]	To restore the favourable conservation condition of Calcareous rocky slopes with chasmophytic vegetation in Slieve	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		Mish Mountains SAC, which is defined by a list of 9 attributes and targets.	
	Siliceous rocky slopes with chasmophytic vegetation [8220]	To restore the favourable conservation condition of Siliceous rocky slopes with chasmophytic vegetation in Slieve Mish Mountains SAC, which is defined by a list of 8 attributes and targets.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
	Killarney Fern (*Vandenboschia speciosa*) [6985]	To maintain the favourable conservation condition of Killarney Fern (*Vandenboschia speciosa*) in Slieve Mish Mountains SAC, which is defined by a list of 16 attributes and targets.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
Castlemaine Harbour SPA (004029) (0km)	Red-throated Diver (*Gavia stellata*) [A001]	To maintain the favourable conservation condition of Red-throated Diver in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Cormorant (*Phalacrocorax carbo*) [A017]	To maintain the favourable conservation condition of Cormorant in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	To maintain the favourable conservation condition of Light-bellied Brent Geese in Castlemaine Ha	Potential for noise disturbance during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		rbour SPA, which is defined by a list of 2 attributes and targets.	
	Wigeon (*Anas penelope*) [A050]	To maintain the favourable conservation condition of Wigeon in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Mallard (*Anas platyrhynchos*) [A053]	To maintain the favourable conservation condition of Mallard in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Pintail (*Anas acuta*) [A054]	To maintain the favourable conservation condition of Pintail in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Scaup (*Aythya marila*) [A062]	To maintain the favourable conservation condition of Scaup in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Common Scoter (*Melanitta nigra*) [A065]	To maintain the favourable conservation condition of Common Scoter in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Oystercatcher (*Haematopus ostralegus*) [A130]	To maintain the favourable conservation condition of Oystercatcher in Castlem	Potential for noise disturbance during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		aine Harbour SPA, which is defined by a list of 2 attributes and targets.	
	Ringed Plover (*Charadrius hiaticula*) [A137]	To maintain the favourable conservation condition of Ringed Plover in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Sanderling (*Calidris alba*) [A144]	To maintain the favourable conservation condition of Sanderling in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Bar-tailed Godwit (*Limosa lapponica*) [A157]	To maintain the favourable conservation condition of Bar - tailed Godwit in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Redshank (*Tringa totanus*) [A162]	To maintain the favourable conservation condition of Redshank in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Greenshank (*Tringa nebularia*) [A164]	To maintain the favourable conservation condition of Greenshank in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Turnstone (*Arenaria interpres*) [A169]	To maintain the favourable conservation condition of Turnstone in Castlemain	Potential for noise disturbance during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		e Harbour SPA, which is defined by a list of 2 attributes and targets.	
	Chough (*Pyrrhocorax pyrrhocorax*) [A346]	To maintain the favourable conservation condition of Chough in Castlemaine Harbour SPA, which is defined by a list of 2 attributes and targets.	Potential for noise disturbance during drilling activities.
	Wetland and Waterbirds [A999]	To maintain the favourable conservation condition of the wetland habitat in Castlemaine Harbour SAC as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by 1 attribute and target.	Potential for hydrogeological disturbance should drilling impact on groundwater levels and flows.
Dingle Peninsula SPA (004153) (0.15 km)	Fulmar (*Fulmarus glacialis*) [A009]	To restore the favourable conservation condition of Fulmar in Dingle Peninsula SPA, which is defined by a list of 7 attributes and targets.	Potential for noise disturbance during drilling activities.
	Peregrine (*Falco peregrinus*) [A103]	To maintain the favourable conservation condition of Peregrine in Dingle Peninsula SPA, which is defined by a list of 5 attributes and targets.	Potential for noise disturbance during drilling activities.
	Chough (*Pyrrhocorax pyrrhocorax*) [A346]	To restore the favourable conservation condition of Chough in Dingle	Potential for noise disturbance during drilling activities.

European Site (and distance from proposed drilling site)	Qualifying Features	Conservation Objectives	Impact Pathway
		Peninsula SPA, which is defined by a list of 9 attributes and targets.	

5.0 Screening impacts on European Sites

5.1 Potential for direct habitat loss

The proposed drilling activity will take place within the boundary of Castlemaine Harbour SAC, on an area mapped as Fixed coastal dunes (2130). While the works will require driving a drilling rig and associated vehicles (van/4x4) across the fixed dune habitat, as well as some temporary disturbance to the vegetation on the surface at the proposed drilling site, the physical disturbance will be restricted to two very small areas (each <20m x 20m). Driving across the fixed dune habitat will not lead to any long-term impact on the habitat due to the vegetated nature of the land which is currently grazed by livestock.

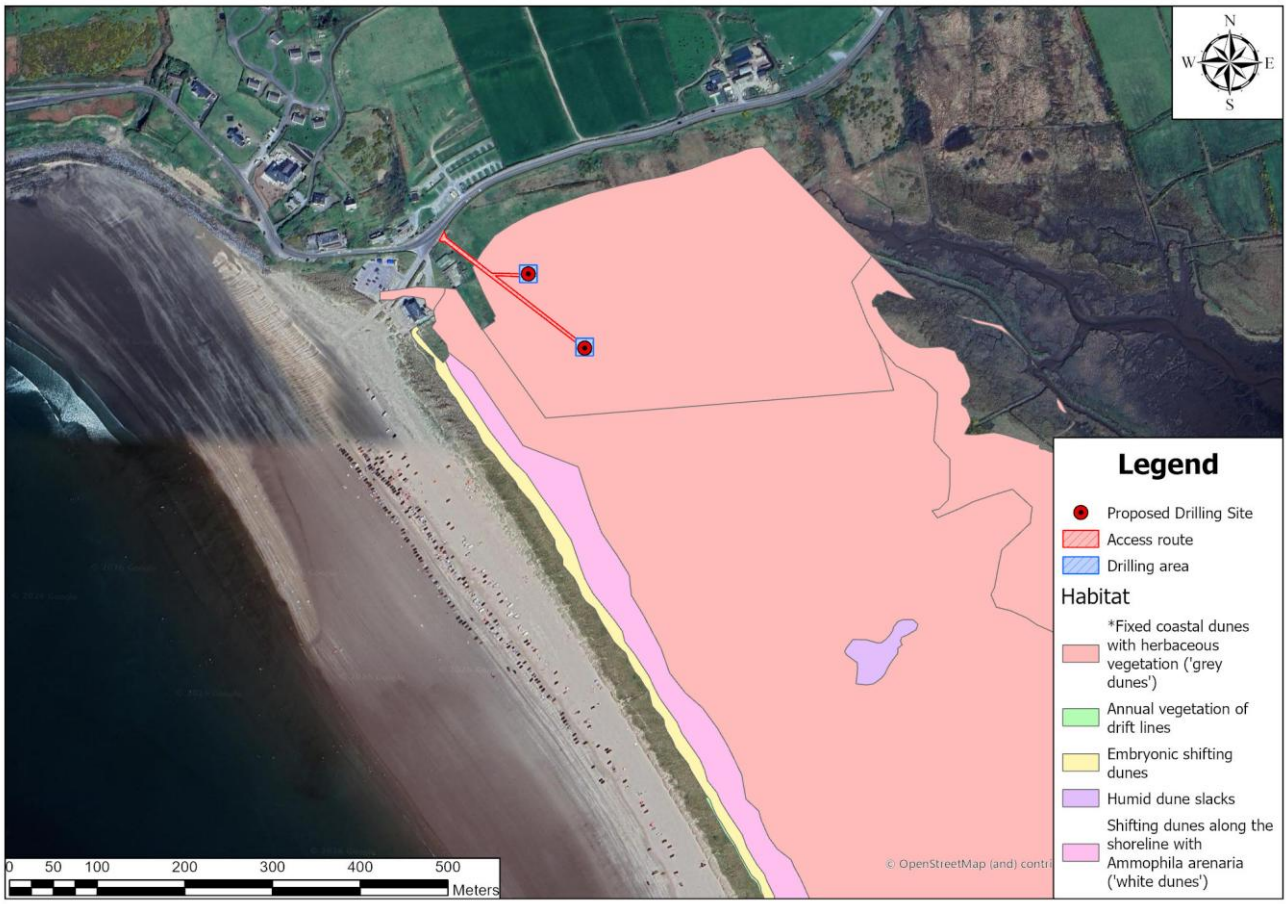


Figure 5-1 Proposed drilling sites and most recent habitat mapping (based on Ryle *et al.*, 2009)

Site-specific conservation objectives for this habitat include the attributes and targets outlined in Table 5-1.

Table 5-1 SSCOs for Fixed coastal dunes (2130) within Castlemaine Harbour SAC

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. Habitat only found and mapped at one sub-site: Inch – 0.34ha.	Based on data from the Coastal Monitoring Project (Ryle et al., 2009). Figure of 0.34ha for Inch based on aerial photograph (2000). Actual area likely to be greater.
Habitat distribution	Occurrence	No decline, subject to natural processes.	See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on Ryle et al. (2009). Inch shows strong transitional vegetation communities
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% cover, subject to natural processes	Based on Ryle et al. (2009)
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on Gaynor (2008) and Ryle et al. (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at monitoring stops	Maintain range of sub-communities with typical species listed in Ryle et al. (2009)	See coastal habitats supporting document
Vegetation composition: cover and height of Salix repens	Percentage cover; centimetres	Maintain more than 10% cover of Salix; vegetation height should be in the range of 5–20 cm	Maintained through appropriate grazing regime
Vegetation composition: negative indicator species (including *Hippophae rhamnoides)*	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Includes invasive or nutrient-indicator species; should be absent or controlled

While the proposed drilling may lead to some temporary localised disturbance, the project will not reduce the overall habitat area, as the final direct footprint of each borehole is <1m^2. Furthermore, there will be no impact to habitat distribution, sediment supply or vegetation structure associated with the temporary disturbance of the drilling activity. While some area of bare ground may be generated, these will be very small (<5m^2 at each borehole), representing <0.3% of the habitat area at Inch. There will be no impacts on any of the other attributes and targets due to the very localised nature of the works and therefore, Fixed coastal dunes (2130) can be excluded from further assessment.

In relation to other habitats present within 100m of the access route and drilling locations (embryonic shifting dunes, shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), dunes with Salix repens ssp. argentea (*Salicion arenariae*) and humid dune slacks), the proposed drilling activities and access routes will not take place on any of these features. None of these habitats occur within 50m of the proposed drilling activities. Given the extremely limited footprint of the activities, which will only directly impact on the direct footprint of the drilling rig and associated equipment, there is no potential for direct habitat loss and these habitats can be excluded from further assessment.

Although occasional ongoing visits will be required following borehole completion, this activity will only comprise walking across the fixed dune habitat and there is no potential for likely significant effects associated with these activities.

5.2 Potential for direct mortality

There is a risk of direct mortality of mobile species such as Otter and SCI species for Castlemaine Harbour SPA and Dingle Peninsula SPA. However, given the limited number of traffic movements required over a relatively short duration (maximum 5 days of drilling activity) the risk of direct mortality on these species is extremely low and not considered to be above a *de minimis* threshold. Therefore, the risk of likely significant effects through direct mortality can be ruled out.

5.3 Potential for hydrogeological disturbance on European Sites

Preliminary assessment identified several groundwater-dependent habitats that could be impacted by significant changes to groundwater quality and quantity. Several groundwater-dependent habitats and one groundwater-dependent species within Slieve Mish Mountains SAC have been identified. However, the groundwater flow direction from the proposed drilling locations is likely to be towards the east towards Castlemaine Harbour based on topography. Slieve Mish Mountains SAC is located a minimum of 1.1km north of the proposed drilling locations, with groundwater flow towards Dingle Bay and Castlemaine Harbour to the south. Given the location of Inch peninsula, largely separated from Dingle Peninsula, it is highly unlikely that there is any possibility of groundwater connectivity between the drilling site and Slieve Mish Mountains SAC. Therefore, the risk of impacts to

groundwater quantity or quality that may lead to likely significant effects is extremely low and the habitats and species within this site can be excluded from further assessment.

In the case of groundwater-dependent habitats within Castlemaine Harbour SAC, if drilling were to lead to significant changes to groundwater levels or flow regime, this has the potential to impact on the SSCOs for these features, particularly humid dune slacks. However, the proposed borehole design includes steel and uPVC casing, grouting of the annular space to ground level and a sanitary seal, which will isolate the boreholes from shallow ground conditions and minimise the potential for vertical cross-connection between water-bearing horizons or the creation of a preferential drainage pathway. The drilling footprint is very small, the drilling activity is temporary, and the completed installations are intended only to record groundwater conditions rather than modify them. On that basis, and having regard to the local bedrock aquifer characteristics, the proposed project is not expected to result in any ecologically significant change to the groundwater regime (quantity or quality) supporting groundwater-dependent habitats within Castlemaine Harbour SAC.

Therefore, it can be concluded that the risk of likely significant effects to groundwater-dependent habitats within Castlemaine Harbour SAC can also be excluded.

5.4 Potential for water quality impacts on European Sites

Drilling of boreholes may generate contaminated runoff from the temporary drilling areas, particularly during rainfall, where contaminants including sediment, drill cuttings, or small quantities of fuel or oil could be mobilised. In the absence of mitigation measures, this runoff could enter surrounding surface waters and cause a short-term decline in water quality. The proposed drilling areas are located within the Caherpierce_010 sub-basin which forms part of the Emlaghmore_SC_010 waterbody. The Caherpierce_010 sub-basin drains into Castlemaine Harbour. Caherpierce_010 sub-basin was assigned good status in the latest monitoring cycle by the EPA (2019-2024) based on a modelling approach, while Castlemaine Harbour was assigned moderate status (improving from poor in the previous monitoring cycle (2016-2021)). Moderate status was assigned based on ecological status, phytoplankton and presence of specific pollutants (Polybrominated diphenyl ethers (PBDEs)).

It is acknowledged that in the absence of mitigation measures (specifically creation of bunded area for any runoff or drill washings) there is a potential for pollutants, namely sediment, drill cuttings, fuels and lubricants to be mobilised and enter the Caherpierce_010 sub-basin and eventually enter Castlemaine Harbour. Runoff could reach some habitats that are sensitive to changes in water quality (estuaries, mudflats and sandflats not covered by seawater at low tide, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows, humid dune slacks) or impact species that are sensitive to changes in water quality (Sea Lamprey, River Lamprey, Salmon, Otter and

Petalwort). In addition, the wetland habitat within Castlemaine Harbour SPA could be adversely impacted by severe impacts on water quality.

The humid dune slacks are located in a separate sub-catchment to the proposed drilling site and are unlikely to have any hydrological connectivity with the area where runoff may be generated, meaning this habitat and Petalwort can be ruled out of any further assessment. It is possible that other habitats listed above could be hydrologically connected to the drill site and could be adversely affected by significant changes in water quality. However, it is anticipated that any runoff would be extremely limited, and even in the absence of mitigation would not be so significant as to lead to likely significant effects. The dilution potential of Castlemaine Harbour means any water quality impacts are unlikely to be perceptible and can be considered below a *de minimis* threshold.

Therefore, potential for water quality impacts to lead to a likely significant effect on any qualifying feature of Castlemaine Harbour SAC and on the wetland habitat of Castlemaine Harbour SPA can be excluded from further assessment.

5.5 Potential for disturbance of SCI species

It is possible that the proposed drilling activities could lead to short-term disturbance to Special Conservation Interests of both Castlemaine Harbour SPA and Dingle Peninsula SPA. However, given the limited spatial extent of the proposed drilling activities (20m x 20m) relative to the broader area around the SPA, and short duration of the works (maximum 5 days of drilling activities), the risk of causing disturbance that would lead to likely significant effects on any of the SCI species of either SPA is considered extremely low.

5.6 In-combination with other plans and projects

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in the Commission's 2018 Notice (EC, 2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. The significance of any identified combined effects of the proposed development and other past, present or reasonably foreseeable future plans or projects must be evaluated.

In that context, plans or projects which are completed, approved but uncompleted, or proposed have been considered. EC (2019) specifically advises that "as regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e., for which an application for approval or consent has been introduced". On the basis of advice contained in EC (2019) and OPR (2021), relevant County Development Plans (CDPs) / Local Area Plans (LAPs) were considered in terms of their potential to have in-combination effects with the proposed project.

The Kerry County Development Plan (CDP) 2022-2028 was considered. This Plan was reviewed and considered in terms of its potential to result in in-combination effects likely to have a significant effect on any European site. The Natura Impact Report considered the potential for impacts of the CDP on European sites. It concluded that, having incorporated mitigation measures, the CDP would not adversely affect the integrity of any of the European sites considered. Given the localised nature of the drilling activities, together with the strategic nature of the CDP, there is not considered to be any potential for in-combination effects with this plan. It is more likely that in-combination effects would occur at the project scale which has been considered further below.

A planning search was undertaken on the Kerry County Council website for local projects approved or pending that could potentially give rise to in-combination effects. There are several planning applications approved or pending in proximity to the proposed drilling site at Inch. The applications are predominantly for the construction of new infrastructure such as housing extensions, sheds, telecommunications infrastructure and some commercial premises (restaurants etc), although none of these applications are located within the immediate vicinity of the project site. Given the small scale of many of these developments and the spatial separation of these projects, there is not considered to be any potential for in-combination effects from these developments.

A determination in relation to humid dune slack restoration measures at Inch has been published by NPWS. This project involves using a small digger to sensitively remove enriched surface layers within the designated restoration areas. In addition, a 52 m section of track, laid using local sandstone, was also proposed to facilitate access of machinery to the site and to create a turning circle. Following an analysis of the activity, the EAU determines, in accordance with Regulation 42A(8) of the 2011 Regulations, that the humid dune slack restoration measures within Castlemaine Harbour SAC are entirely comprised of activities that directly support the Conservation Objectives of the Special Area of Conservation. Should these works coincide with the proposed drilling activities, there is potential for increased disturbance to SCI species. However, given the limited scale and extent of the drilling and dune restoration activities, together with the treatment undertaken at the respective facilities, it is considered unlikely that there is any potential for significant in-combination effects above a *de minimis* threshold.

It is considered that no other plans or projects lie within proximity to the proposed works or have potential to give rise to significant in-combination effects with the proposed project.

6.0 Appropriate Assessment Screening Conclusion

This Appropriate Assessment Screening Report was completed in compliance with EU and Irish law and the relevant European Commission and national guidelines as set out at Section 2 of this report, and on the proposed project as described at Section 3 of this report, to determine whether or not likely significant effects on any European site could be excluded as a result of the proposed project.

The potential impacts of the proposed project have been considered in the context of the European Sites identified in Section 4, their Qualifying Interests and Special Conservation Interests and any Conservation Objectives which have been set.

From the findings of the Screening exercise, it is concluded that the proposed project **is directly connected with or necessary to the management of Castlemaine Harbour SAC as a European site**. The work is being conducted to inform the management of several of the qualifying features of the site including humid dune slacks.

However, it was recognised that the proposed drilling activities could lead to significant effects on the other qualifying features of the SAC and other European sites within the zone of influence of the project. Therefore, an Appropriate Assessment Screening was prepared as a risk assessment tool to identify potential impacts on other qualifying features.

In summary, the findings of this screening exercise determined that drilling activities and ongoing monitoring will not give rise to potential significant effects on the Qualifying Interests or Special Conservation Interests of any European site.

Having regard to the methodology employed and the findings of this screening exercise, it has been concluded that Stage 2 Appropriate Assessment is not required in accordance with Section 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

7.0 References

DEHLG (2010a) *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

DEHLG (2010b) *Circular NPW 1/10 & PSSP 2/10: Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin. Available at: https://www.npws.ie/sites/default/files/general/Circular%20NPW1-10%20%26%20PSSP2-10%20Final.pdf

EC (2000a) *Communication from the Commission on the Precautionary Principle*. European Commission, Brussels. Available at: https://op.europa.eu/en/publication-detail/-/publication/21676661-a79f-4153-b984-aeb28f07c80a/language-env

EC (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Commission Environment DG. Office for Official Publications of the European Communities, Luxembourg. Available at: https://www.forest-trends.org/wp-content/uploads/imported/13assess-projects-significantly-affecting-natura-2000-sites-pdf.pdf

EC (2007) *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission*. European Commission, Brussels. Available at: https://www.mmediu.ro/app/webroot/uploads/files/11.%20new_guidance_art6_4_en.pdf

EC (2013) *Interpretation Manual of European Union Habitats, EUR 28*. European Commission, DG Environment. Available at: https://cdr.eionet.europa.eu/help/natura2000/Documents/Int_Manual_EU28.pdf

EC (2019) *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. Official Journal of the European Union C 33/1. European Commission. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:033:FULL

EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Official Journal of the European Union C 437/1. European Commission. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C:2021:437:FULL

EPA (2026) *Catchments and Waterbody Status Information*. Environmental Protection Agency. Available at: https://www.catchments.ie/

IGI (2007) *Guidelines for Drilling Wells for Private Water Supplies*. Institute of Geologists of Ireland, Dublin. Available at: https://igi.ie/publications/guidelines/

Kerry County Council (2022) *Kerry County Development Plan 2022-2028 Natura Impact Report*. Kerry County Council, Tralee. Available at: https://consult.kerrycoco.ie/en/system/files/materials/5/NIR.pdf

National Biodiversity Data Centre (2026) *Biodiversity Maps*. National Biodiversity Data Centre. Available at: https://maps.biodiversityireland.ie/

NPWS (2011) Conservation Objectives: Castlemaine Harbour SAC 000343 and Castlemaine Harbour SPA 004029. Version 2.0 (19th July 2011). National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000343.pdf

NPWS (2012) *Marine Natura Impact Statements in Irish Special Areas of Conservation – A Working Document*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Available at: https://www.npws.ie/sites/default/files/general/Marine%20Assessment%20Working%20Document.pdf

NPWS (2020) *Guidance on Appropriate Assessment for Planning Authorities*. National Parks and Wildlife Service. Available at: https://www.npws.ie/protected-sites/guidance-appropriate-assessment-planning-authorities

NPWS (2021) Conservation Objectives: Slieve Mish Mountains SAC 002185. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002185.pdf

NPWS (2025a) Conservation Objectives: Dingle Peninsula SPA 004153. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage. Available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004153.pdf

NPWS (2025b) *NPWS Designations Viewer*. National Parks and Wildlife Service. Available at: https://experience.arcgis.com/experience/edf34d92e28040fd87d3d14f55d8d95f

NPWS (2025c) *Site Specific Conservation Objectives (SSCO) – Spatial Data (March 2025)*. National Parks and Wildlife Service. Available at: https://www.npws.ie/maps-and-data/designated-site-data/ssco-data

OPR (2021) *Practice Note PN01: Appropriate Assessment Screening for Development Management*. Office of the Planning Regulator, Dublin. Available at: https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf

Ryle, T., Murray, A., Connolly, K. & Swann, M. (2009) Coastal Monitoring Project 2004-2006. A Report to the National Parks and Wildlife Service. Available at: https://www.npws.ie/sites/default/files/publications/pdf/Ryle_et_al_2009_Coastal_Monitoring_Project.pdf