MOTT MACDONALD

Report for Screening for Appropriate Assessment

Roundstone Sewerage Scheme - Foreshore - SI Works

25 March 2020

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	12th Mar. 2020	E. Johnston	R. Mansfield	J. Barnard	Initial Issue
B	25th Mar 2020	E Johnston	R Mansfield	J Barnard	Updated to reflect minor comments from client

Document reference: | | 386624-MMD-Ro-00-RP-C-1320

Information class: Standard

Contents

Tables

Figures

1 Introduction

1.1 Context

Irish Water wishes to carry out site investigation works in the foreshore at Roundstone, Co. Galway to determine the ground conditions present at the site of a proposed Terminal Pumping Station (PS) associated with a Wastewater Treatment Plant for the Roundstone agglomeration. The assessment of the ground conditions will inform the detailed design of the Terminal PS structure e.g. the type of piling to be employed, the depth of piles required, etc.

1.2 Requirement for Appropriate Assessment

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) requires that where a plan or project is likely to have a significant effect on a European Site, while not directly connected with or necessary to the nature conservation management of the site, it will be subject to 'Appropriate Assessment' to identify any implications for the European site in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

"Any plan or project not directly connected with or necessary to the management of the 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".* This report has been prepared to assist the competent authority in their Screening for Appropriate Assessment.

In this context it is noted that European Commission guidance provides clarity on what is considered a 'project' and in doing so points towards Article 1(2) of the EIA Directive which defines a 'project' as: ' … the execution of construction works or of other installations or schemes, other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources.' Furthermore, it is noted that any exemption from authorisation does not exclude a project from the assessment obligations under Article 6(3) of the Habitats Directive (C-98/03, paragraphs 43 –52).

This report has been prepared in accordance with the following European Commission and national guidance:

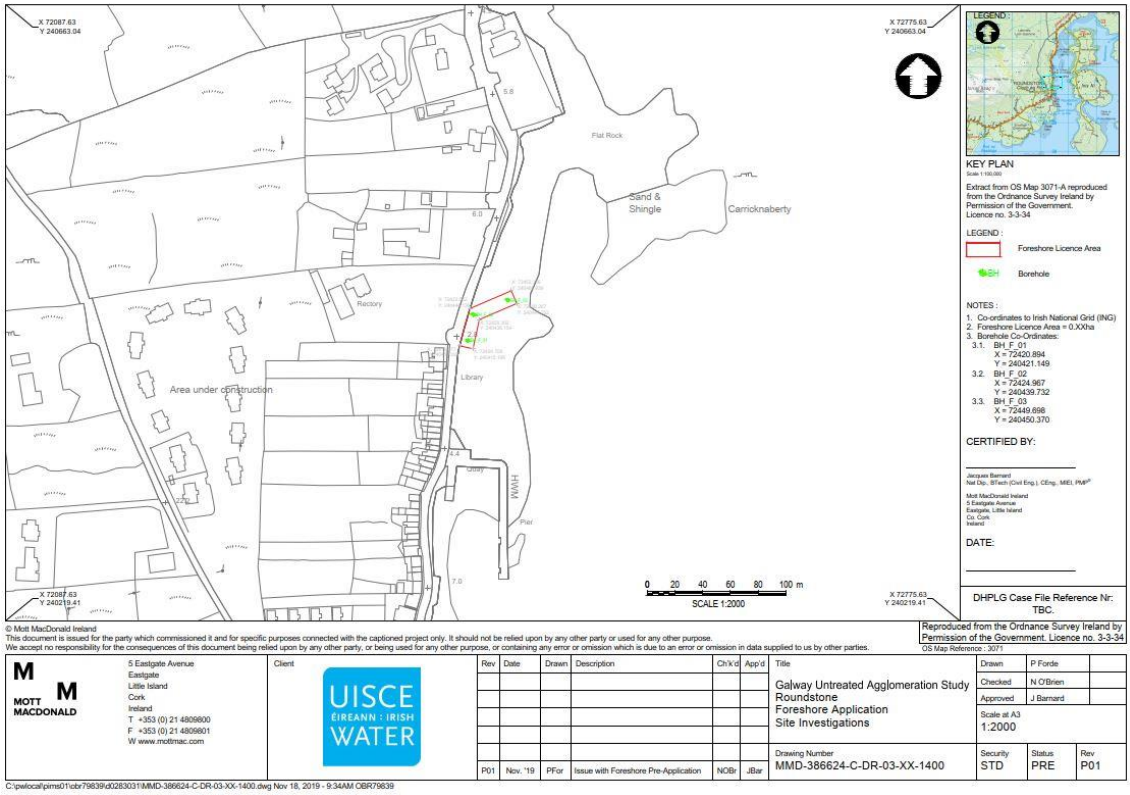
- EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC
- DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (Revised 2010)
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC Commission Notice C (2018) 7621.

2 Project Description and Potential Effects

2.1 Project Location

The project is located in Roundstone, County Galway. Roundstone is a coastal village situated approximately 76km to the west of Galway City, and approximately 20km south east of Clifden via the R341. Figure 2.1 presents the location of the boreholes in relation to the village of Roundstone.

Figure 2.1: Borehole Locations



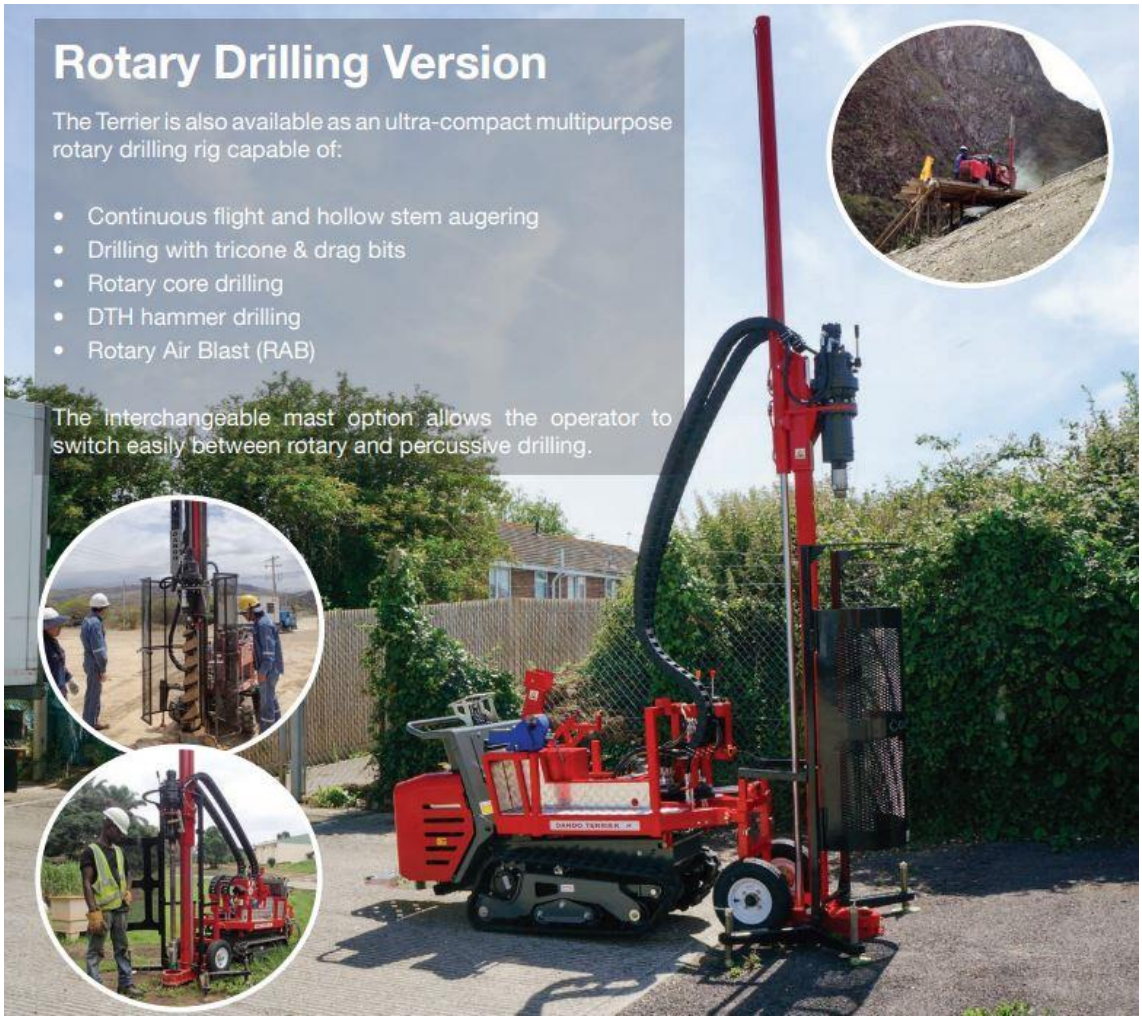
The works area is comprised of a rocky shoreline with shingle (Figure 2.2). The works area is inundated regularly by the tide. The foreshore is bordered by an existing road and urban development.

Figure 2.2: Foreshore Area

Ground investigation works are required to inform the detailed design of the proposed pumping station.

The works will entail a total of three rotary boreholes at the foreshore at Roundstone. The rig type envisaged for these works will be the same or similar as that presented in Figure 2.3 below. The required working area for a rig of this type is a minimum of 4m by 2m.

Figure 2.3: Rig Type Envisaged for the Works



Source: www.dynamicsampling.co.uk

Access to the foreshore for construction of the proposed pumping station will be via the green area adjacent to the northern pier.

This type of borehole rig typically has tracked wheels to allow for movement over rough terrain. The rig will either:

- Track down onto the shore at low tide through a gap in the wall
- Planks will be placed to allow the rig to track over the wall.

For health and safety reasons, all works will take place at low tide allow access to the works area. The foreshore is comprised of rocky outcrops with shingle. As such, there is no requirement for a platform to ensure rig stability, or to prevent the rig from sinking. The rig will be removed from the foreshore before each high tide to prevent the plant from being inundated.

The cores will be extracted via rotary core drilling. To lubricate the drill, water will either be brought to the works area by bowser or provided by connecting a hose into a nearby hydrant. The bowser will remain on the pier and the water will be piped to the works area through a hose. The water will be used to flush the borehole, to cool the heat generated by the drilling. This is

expected to take between 3,000 and 5,000ltr total across all three boreholes. The lubrication will also damp down any dust associated with the works.

The majority of this water will be absorbed into the ground surrounding the borehole. There may be a small amount of arisings from the borehole, however these will be contained within the works area. The works will take place at low tide. As such, there is no potential for these arisings to enter the coastal waters.

Following their extraction, the cores will be laid on to plastic sheeting and then placed into core boxes. The cores and any casings used to guide the droll will then be removed from the site, and the holes allowed to refill naturally.

2.1.1 Potential Effects

- The proposed works have potential to result in the following effects:
- Physical disturbance due to the rig tracking up and down the foreshore, and due to the borehole drilling itself
- Noise and vibration effects from the drilling
- A small amount of arisings from the borehole in the immediate footprint of the rig
- Hydrocarbon spills from plant

2.2 Proximity to European Sites

CIEEM guidelines[1] states that the "*zone of influence (ZoI) is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities*" and that the "*zone of influence will vary for different ecological features depending on their sensitivity to an environmental change*".

The likely biophysical changes associated with the boreholes were examined having regard to the timing, frequency, duration, location, extent and magnitude of the works. The zone of influence associated with these project effects was also derived from relevant published literature and guidance documents and examined having regard to the Interest / Features for which the European Sites are designated.

[1] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

Table 2.1: Zone of Impact

Potential Effect	Zone of Impact
Physical disturbance	Physical disturbance may occur within the footprint of the works, and where the borehole rig tracks down to the works area.
Noise and vibration	Barham (2018) present a typical time history of underwater noise measured at approximately 50m from a rotary drilling operation in Northern Ireland. At 50m from the operation the sound pressure varied from 127 to 133dB re 1µPa RMS, with an average of 130dB re 1µPa RMS. The study also notes that at 830m the underwater noise levels were largely below background noise levels. It is of note that the rig referenced in this study is much larger than the rig to be used on site in Roundstone and so is likely to have a greater impact in terms of noise and vibration emissions than is expected at Roundstone. DAHG (2014) 'Guidance to manage the Risk to marine Mammals from man-made Sound in Irish Waters' specifies guidance for activities which pose a risk to marine mammals from sound. The document states: 'Drilling is generally acknowledged to produce moderate levels of continuous omnidirectional sound at low frequency (several tens of Hz to several thousand Hz and up to c.10 kHz). Source sound pressure levels have generally been reported to lie within the 145-190 dB re: 1 µPa range. While sound exposure levels from such operations are thought to be below that expected to cause injury to a marine mammal, they have the potential to cause lower level disturbance.' The guidance identifies 500m as the zone of impact for marine mammals. As such, having regard to the precautionary principal, the Zone of Impact as a result of the noise and vibration associated with the proposed works is identified as 500m.
Borehole arisings	For health and safety reasons, works will only take place at low tide. The works comprise a small rig taking three rotary cores (to a depth of 3m, 100mm diameter) out of the shore. Water within the borehole will be retained within the hole and eventually percolate out into the groundwater. There may be a small amount of arisings which emerge from the hole. These will be within the footprint of the borehole rig (approximately 4m x 2m). The zone of impact for the borehole arisings is therefore identified as the footprint of the borehole rig,
Hydrocarbon spill	There is potential for hydrocarbon spills associated with leaking of plant. Were this to occur it would likely take place within the footprint of the works and within the path the plant uses to track to the shore (approximately 90m at its longest distance). As the works will take place at low tide, there is a very low risk of seawater being contaminated by any spills. The Zone of Impact for hydrocarbon spills associated with the works is therefore 90m.

The following sites were identified as having Qualifying Interests/Special Conservation Interests with potential to occur within the potential zone of influence for the proposed works:

- Connemara Bog Complex SAC (002034)
  - *Lutra lutra* (otter) [1355]
  - Salmon
- Kilkieran Bay and Islands SAC (002111)
  - *Lutra lutra* (otter) [1355]
  - *Phoca vitulina* (harbour seal) [1365]
- West Connacht Coast SAC (002998)
  - *Tursiops truncatus* (common bottlenose dolphin) [1349]

The location of the works area in relation to European Sites is presented in Figures 2.3 and 2.4 below.

Figure 2.4: Works area in relation to the closest European Site

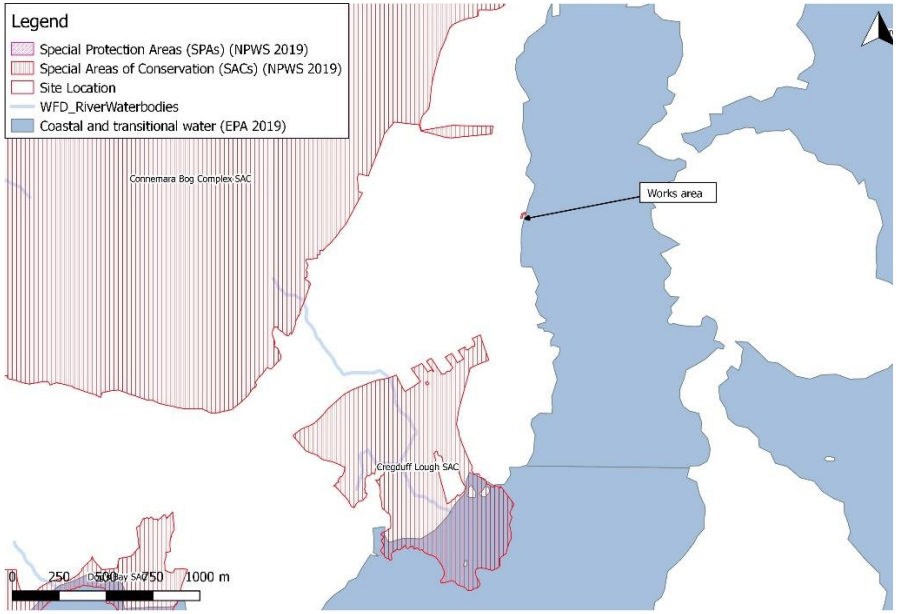
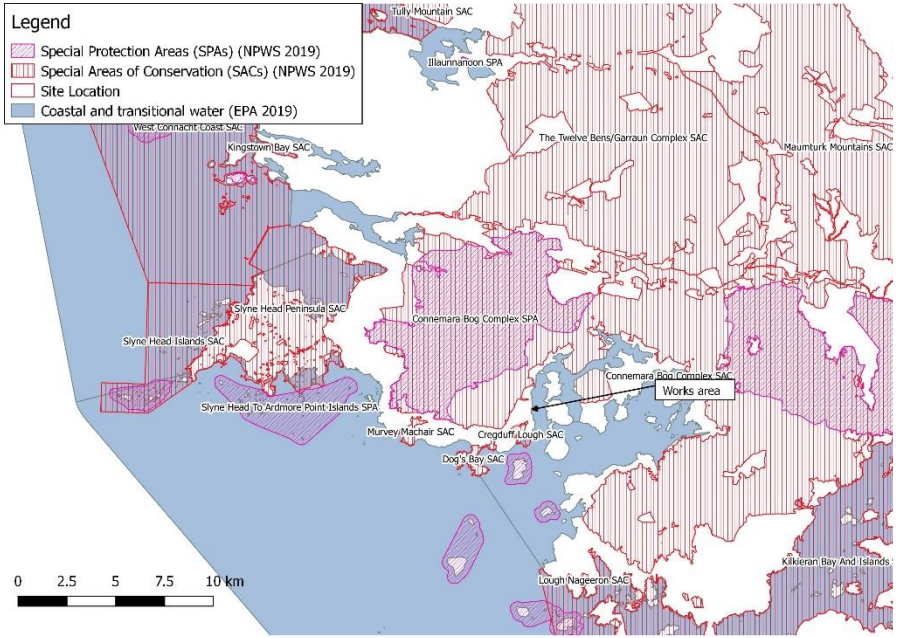


Figure 2.5: Works area in relation to European Sites in the wider landscape



2.3 Assessment of Significant Effects

The characteristics of the project, and the significance of the likely effects of the ground investigation works at Roundstone on the Connemara Bog Complex SAC (002034), Kilkieran Bay and Islands SAC (002111), West Connacht Coast SAC (002998) are assessed in Table 2.2 hereunder. The assessment was made having regard to the checklist provided in '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, 2001), the zone of impact identified, and the Source Pathway Receptor links associated.

Table 2.2: Characteristics of the Project and Potential for Significant Effect

Characteristics	Details	Potential for Significant Effects
Size, scale, area, land-take	The works are small scale in nature, comprising three boreholes within the foreshore area. The works are short term in nature, anticipated to take 5 days to be completed. There will be no permanent land-take as a result of the proposed works.	There is no potential for significant effect to any European site caused by the size, scale, area, and land-take associated with the proposed works.
Physical changes that will arise due to the project (from excavation, piling, dredging, etc.)	The proposed works are wholly outside of the Natura 2000 network. There will be no change in terms of land use in any European sites. The lands that will be affected by the works comprise a small area of rocky seashore. The works will require the removal of three cores of rock (3m deep and 100mm in diameter) from within the works area. These will be left to fill naturally following the works.	There is no potential for significant effect to any European site caused by physical changes associated with the proposed works.
Resource requirements (water abstraction etc.)	Water to lubricate the borehole rig will either be imported to site in a bowser, or through the existing water network at Roundstone. There will be no abstraction within any European sites as result of the proposed works.	There is no potential for significant effect to any European site caused by resource requirements associated with the proposed works.
Emissions and waste (disposal to land, water or air)	**Dust:** As previously discussed, the drilling associated with the borehole will be lubricated with water from a bowser. As such there is no potential for dust as a result of the proposed works. **Surface water emissions** As previously discussed, for health and safety reasons, works will only take place at low tide. The works comprise a small rig taking three rotary cores (to a depth of 3m, 100mm diameter) out of the shore. Water within the borehole will be retained within the hole and eventually percolate out into the groundwater. There may be a small amount of arisings which emerge from the hole. These will be within the footprint of the borehole rig (approximately 4m x 2m). There is potential for hydrocarbon spills associated with leaking of plant. As previously discussed the works will take place at low tide. In addition, there is a significant distance between the works area and any coastal based European sites (closest with connectivity via the coastal waters is located	There is no potential for significant effect to any European site caused by emissions associated with the proposed works

Characteristics	Details	Potential for Significant Effects
	approximately 2.4km from the works area. As such there is no potential for significant impact to any European sites as a result of surface water emissions produced by the proposed works. **Noise and vibration** <u>Marine mammals</u> There are records for common seal, and for bottlenose dolphin in the vicinity of the works area (NBDC database). The works are expected to take place in either Q4 2020 or Q1 2021, to keep road disturbance to a minimum. As such, the works will not coincide with the typical breeding/calving season or moulting season for seals (June to August). Equally the works will not coincide with typical calving season for dolphins (June to September). The proposed ground investigation works are short term in nature, expected to take place over a period of 5 working days. There are no records of key haul out areas for common seal within 500m. The bay surrounding the works area has not been identified as critical habitat for dolphins. As such, any disturbance will be low level, short term in nature, and will not disturb seals or dolphins from sensitive areas. As such this does not constitute a significant effect to either dolphins or seals in the location. <u>Otter</u> The works area consists of a low-lying piece of rocky shoreline that is inundated entirely by the tide, abutted by a wall, road and urban development. As such there is no potential for holts or couches to be present within the working area, or within 150m of the works area. Otter may utilise the seashore for foraging and commuting. Otters are crepuscular. As works will take place during daylight hours there will be no disturbance to otter as a result of the works. <u>Salmon</u> Salmon associated with the Connemara Bog Complex SAC may occur within the coastal waters surrounding the works area. The potential effects of anthropogenic sound on fish can range from direct mortality to no obvious behavioural responses and are dependent on the class of sound i.e. either continuous or impulsive (Popper et al. 2014, Popper & Hawkins 2019). Impulsive noise carries a greater risk of fish mortality. The noise associated with the rotary borehole would not be considered impulsive. Salmon, despite having a swim bladder, have a lower sensitivity to frequencies than other fish because their swim bladder is more distant from, and is not mechanically linked to their otoliths (Knudsen et al. 1992; Harding et al. 2011; Andersson et al. 2017; Popper & Hawkins 2019). As such,	

Characteristics	Details	Potential for Significant Effects
	salmon have a relatively narrow bandwidth of hearing (up to c. 300 -500Hz) (Popper & Hawkins 2019) and are less likely to be impacted by noise effects. There are no watercourses likely to be utilised by migrating salmon within 1km of the works area (EPA 2019). As such, even in the event of avoidance behaviour by salmon in the bay, they will not be deflected away from spawning grounds. Furthermore, the works are short term in nature, and will take place at low tide only over a maximum of five working days. As such there is no potential for significant effects to salmon as a result of noise and vibration emissions associated with the boreholes. **Waste** The cores extracted from the site will be removed from the works area along with any core casings.	
Transportation requirements	Transportation to the works area will be via the existing road network, and by tracking down the shore to the works area. The works will not result in an increase in local traffic volumes.'	There is no potential for significant effect to any European Site caused by transportation requirements associated with the proposed works.
Duration of construction, operation, decommissioning, etc.	The entirety of the works will take a maximum of five working days. There will be no operational or decommissioning phase to the works.	There is no potential for significant effect to any European Site caused by the duration of construction, operation, decommissioning, etc. associated with the proposed works.
Cumulative and In-combination Effects	A search of the Galway County Council planning database (http://www.eplanning.ie/GalwayCC) was undertaken to examine projects with potential for in combination effects. Applications which were made typically consisted of extensions and renovations to existing houses, and retention of existing developments. These are small scale developments which do not have the potential to result in cumulative impacts in association with the proposed works. One planning application of note was made for a WWTP upgrade to the south of the works area (Planning no: 191902). No decision has been made to date in relation to these works. The works proposed consist of an upgrade and replacement of existing tanks located approximately 1km to the south of the borehole location. They are set back from the shoreline. The upgrade works are small scale and short term in nature. As such, there is no potential for cumulative or in-combination effects as a result of the proposed works. The Untreated Agglomeration Study has identified a number of areas around Galway which are currently discharging untreated wastewater. Roundstone is one such location. Ultimately plans for a new Wastewater Treatment Plant and associated pumping stations and pipelines will be submitted to Galway County Council to seek planning permission. The ground investigation works are being carried out in order to inform the detailed design of a pumping station. As such, the boreholes will be completed prior to the construction of the WWTP and associated infrastructure. In addition, the	There is no potential for significant effects caused by cumulative or in-combination effects.

Characteristics	Details	Potential for Significant Effects
	WWTP project will be subject to its own environmental assessment. Given the timing of the works, and the nature and scale of the proposed boreholes, there is no potential for cumulative or in-combination effects on any European Sites. Given the nature, scale, timing, and location of the proposed works, there are no other plans or projects identified with the potential for cumulative or in-combination effects.	

2.4 Summary

The current assessment investigates the potential for significant effects on the special conservation interests of the Connemara Bog Complex SAC (002034), Kilkieran Bay and Islands SAC (002111), West Connacht Coast SAC (002998) arising from the proposed ground investigation works. The assessment considers whether the proposed works, either alone or in combination with other projects or plans, will have a significant effect of the European site.

It is concluded that there is no potential for significant effects on the Connemara Bog Complex SAC (002034), Kilkieran Bay and Islands SAC (002111), and the West Connacht Coast SAC (002998) from the GI works either alone or in-combination with other plans and/or projects.

2.5 Findings of No Significant Effects Matrix

The findings of this report for screening for Appropriate Assessment are summarised in the Findings of no Significant Effects Matrix in Table 2.3 and are presented to aid the Competent Authority in their screening assessment.

Table 2.3: Findings of No Significant Effects Matrix

Name of Project or Plan	Roundstone Ground Investigation Works
Name and location of European sites	• Connemara Bog Complex SAC (002034) approximately 400m from the works • Kilkieran Bay and Islands SAC (002111), approximately 8km from the works • West Connacht Coast SAC (002998), approximately 15km from the works
Description of the project or plan	The proposed works comprise three boreholes on the foreshore at Roundstone.
Is the project or plan directly connected with or necessary to the management of the site?	No
Are there other projects or plans that together with the project or plan being assessed could affect the site?	No
The assessment of significant effects:	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.	No likely effects were determined from the proposed works
Explain why these effects are not considered significant	No likely effects were determined therefore there can be no alteration of the conservation condition or objectives of the European Site due to the proposed works.
List of agencies consulted: provide contact name and telephone or e-mail address	None
Response to consultation.	n/a
Data collected to carry out the assessment	
Who carried out the assessment?	Erin Johnston, Ecologist with Mott MacDonald
Sources of data?	Refer to References Section.
Level of assessment?	Desktop study

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