Rowan

Construction Environmental Management Plan/ Site Management Plan

Coffey Construction Ltd

January 2022

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Report Sign Off

REVISION	DATE	ORIGNATOR	REVIEWER
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1. Introduction

Rowan Engineering Consultants (ROWAN) Ltd were requested by Coffey Construction Ireland Ltd to draft a Construction Environmental Management Plan (CEMP) for land recontouring works near Slade, Saggart Co. Dublin.

1.1 Overview of the proposed project

The principal activities associated with the proposed development are;

- Land recontouring works of c 24,000m2 on a folio size of c. 5.3 ha (allowing buffers).
- The volume of material to be placed on the site is c. 24,000m3 with an average fill level of c. 1.5 m above existing. Refer to planning drawing numbered J1387-PH-001 REV 3 submitted as part of the planning application for full details.

1.2 Purpose and Scope of the CEMP

The scope of the CEMP covers the activities relating to the proposed infill at the proposed development in Saggart, County Dublin.

The CEMP is developed with the objective of avoiding adverse impacts. The Camac River which flows close to the north-eastern corner of the site.

The CEMP is applicable to the Client, the appointed construction contractor and also any sub-contractor's site staff during the construction phase of the proposed works.

2. Location of the Proposed Development

2.1 Site Location and Site Layout

The proposed project is located in the townland of Saggart, Co. Dublin. The nearest village to the site is Saggart, which is located c.600m north east of the proposed site. The proposed site is c.5.3ha. The site will be accessed via an existing entrance along the south eastern site boundary just off the Castle Road, 300m south of the Castle St entrance /exit of the source site of infill material. The proposed infill site is just west of the source site, the construction site of the the new Saggart Irish Water Reservoir. The site is bounded to the south-east by Castle Road and to the north by the Millbrook Manor Nursing Home and agricultural land and to the west by domestic sites and agricultural land.

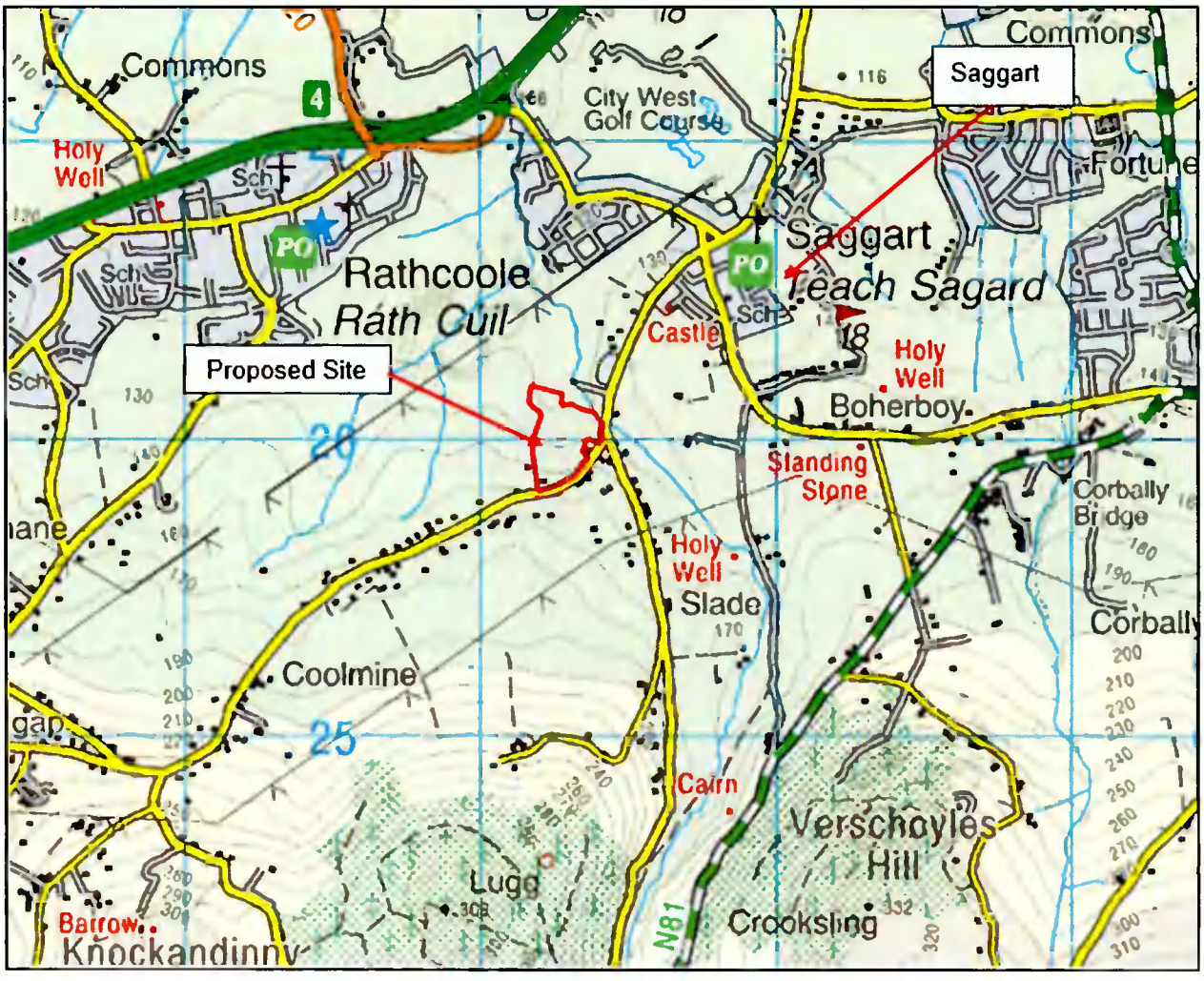

Figure 2-1: Site Location (outlined in red)

The site area of the proposed project is c.5.3ha. The proposed site layout is shown below in Figure 2.2.

Figure 2-2: Site Location Aerial View (outlined in red).

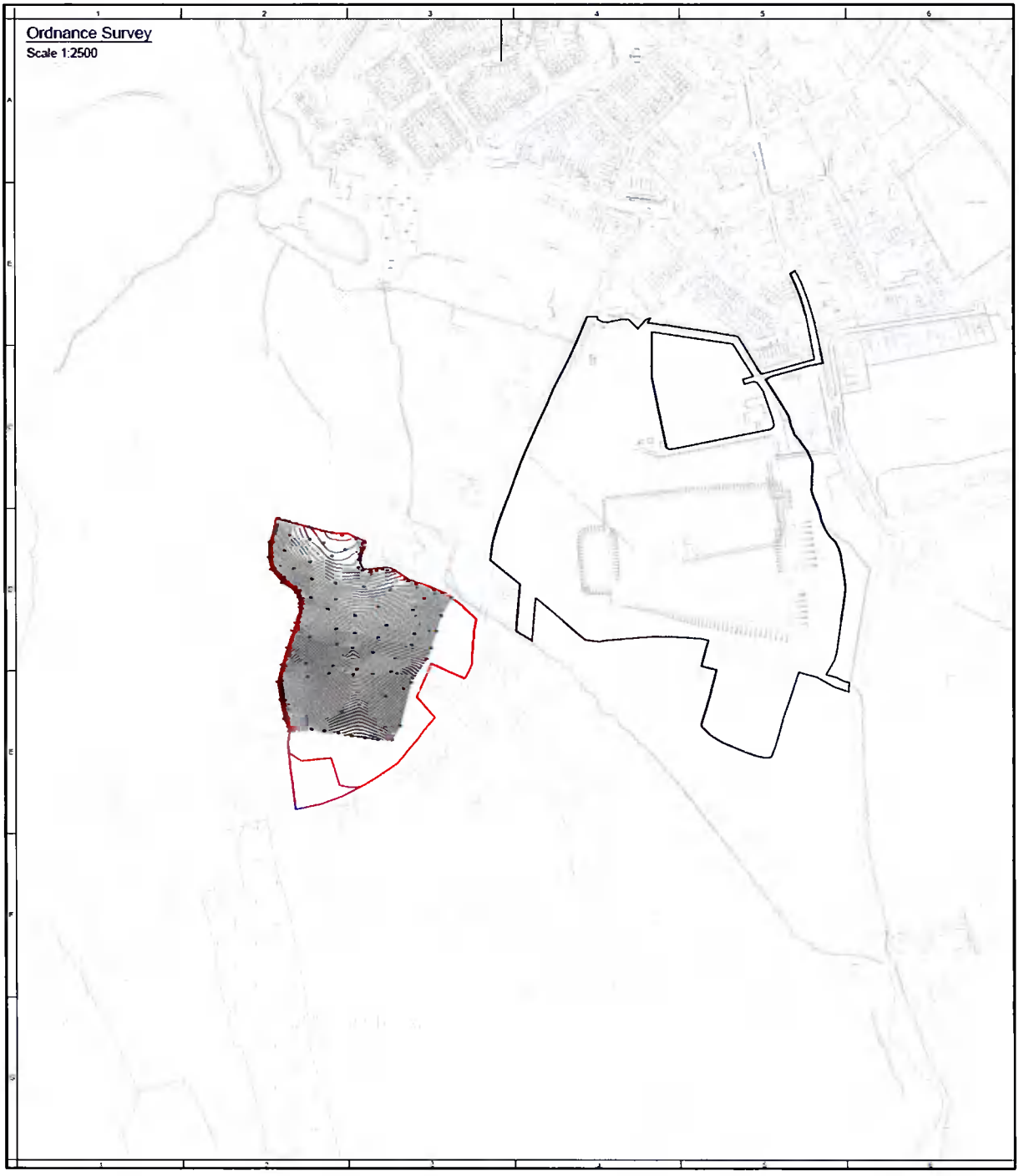

Figure 2-3: Site Location Plan and Site Plan with Proposed Development Boundary

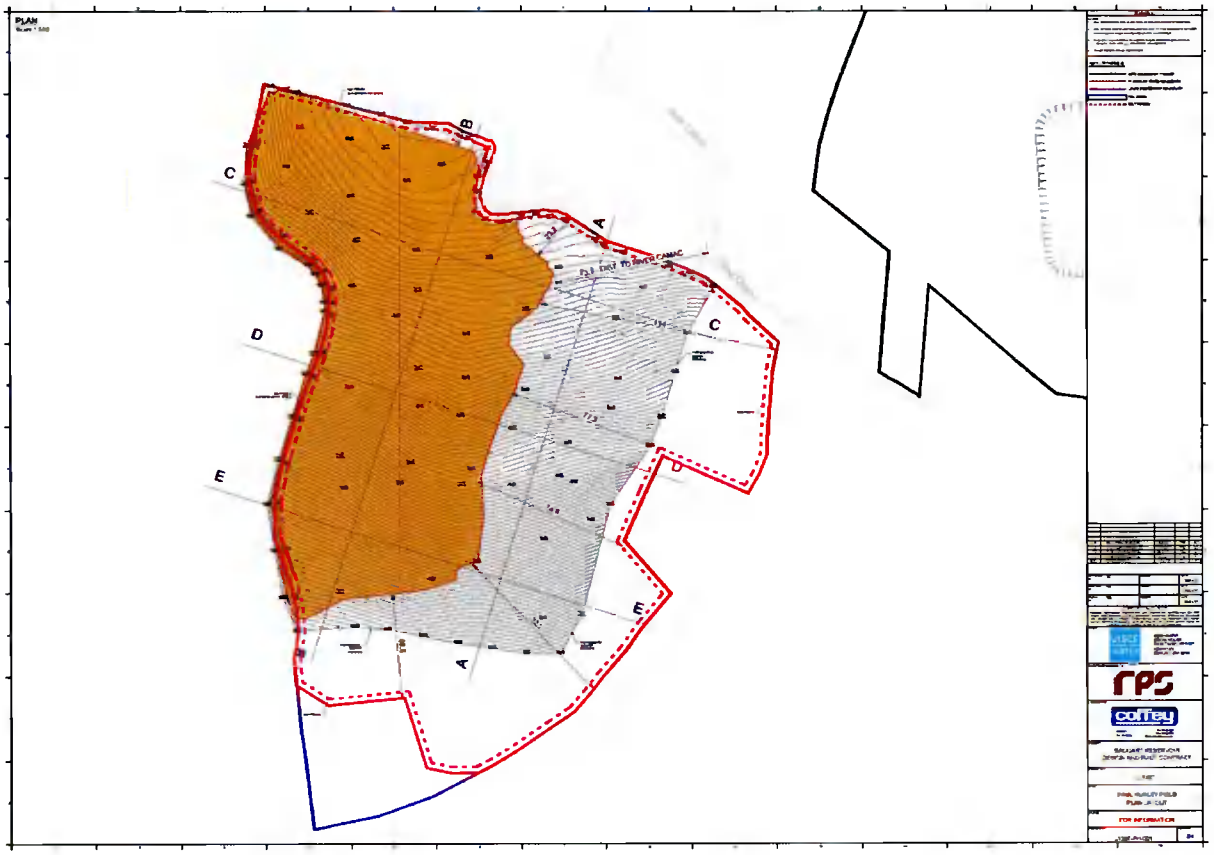

Figure 2-4: Proposed Infill Area as shown in brown shading (Refer to Planning drawing J1387-PH-001 REV 3).

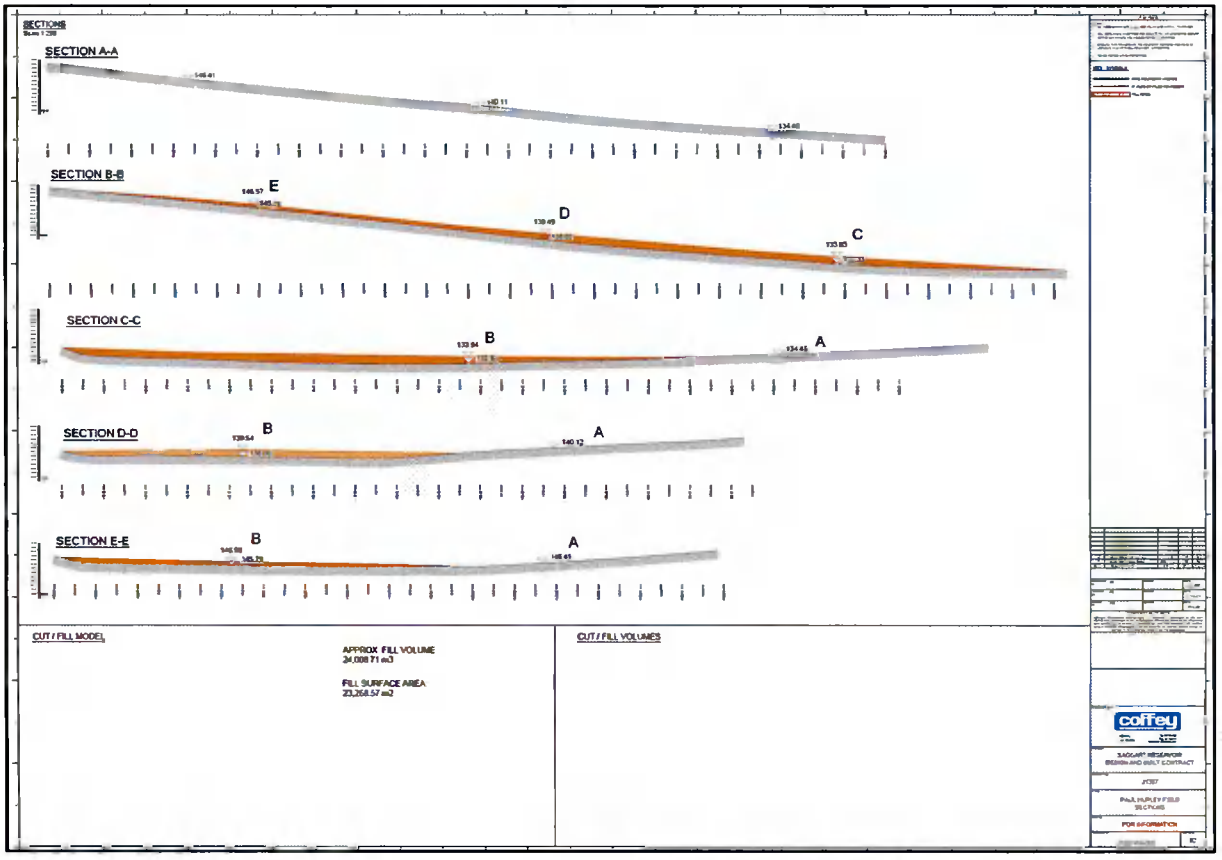

Figure 2-5: Extracts from cross sections of the site (Refer to Planning drawing J1387-PH-003

2.2 Site Access

The soil and stone would be transported from the main construction site of the new Saggart Irish Water Reservoir from the Castle St entrance / exit of the construction site to the existing field entrance of the Hurley site also on Castle St. The route is approximately 300m on Castle St as shown on **Figure 2.5 below.**

There is no planned removal of hedge line vegetation on the perimeter of the site to allow access or other.

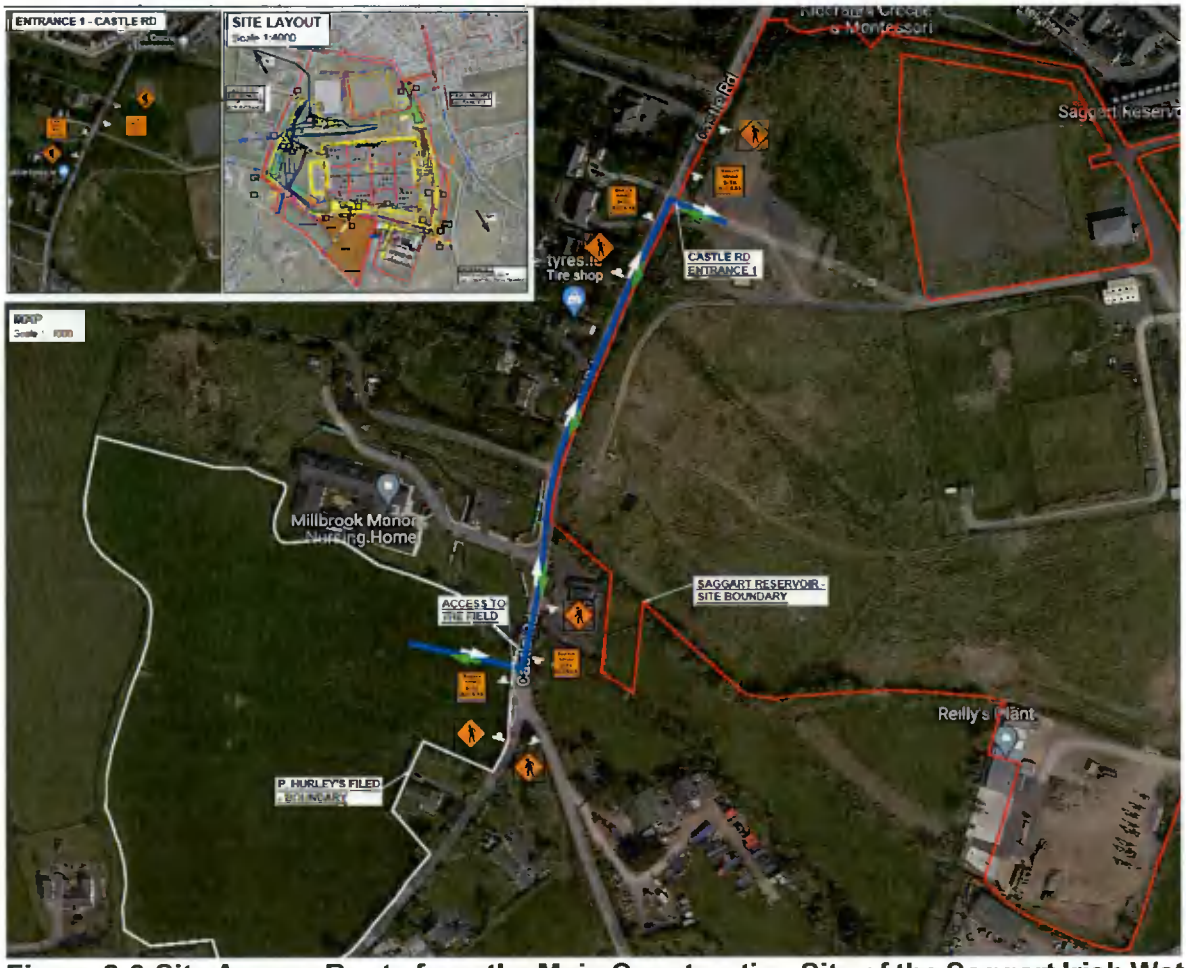

Figure 2-6:Site Access Route from the Main Construction Site of the Saggart Irish Water Reservoir.

2.3 Operational Phase of the Project

The appended site-specific Risk Assessment Method Statement (RAMS) J1387 details the proposed soil trip and infill process and can be summarised as follows:

Topsoil Strip:

- The field will be scanned for services prior to works commencing. A permit to dig will be completed and briefed to the Site Supervisor and Plant Operators highlighting any areas of concern (i.e., locations of onsite manhole chambers & services/utilities) by the site engineer.
- The extent of the site will be stripped of the topsoil.
- The topsoil strip is to be carried out using a 38-tonne excavator and D6 Bulldozer under site supervision
- Topsoil will be removed through placement of temporary 'windrows' at 3m heights to allow plant movement and ease of access until the material is removed to the bund.
- The topsoil will be stored in a sealed bund to ensure it is protected from the weather and segregated from the imported material.

Construction of Access Road:

- A short access road will be constructed at the entrance (See Figure 4) once all topsoil is stripped from the entrance area, the 38-tonne excavator can commence ground cuts and excavate 0.3m deep and 6m wide for the proposed route as per the site layout plan. 6F2 stone capping and 2inch down stone will be utilised to create the construction haul route.
- This stone haul route will be built up in 2 layers of 0.150m, where each layer will be compacted adequately using a 10-tonne roller.

Transportation and compaction of material:

- 8 Wheeled tipper trucks will remove the subsoil from the Coffey's Site.
- The trucks will follow the route shown in blue in figure 4 to Hurleys field.
- The material will be tipped in Hurleys field and spread using the D8 Bulldozer, the material will then be compacted using the 10-tonne roller in layers of 150mm.
- The material will be built up to design level.
- An Engineer will be onsite providing and checking levels.

2.4 Decommissioning of the proposed project

At the end of its operational life, the following will be implemented.

- Once the imported material has reached the design levels the importation will stop. The compaction of the area will be completed.
- The topsoil will then be spread out over the field using the D8 Bulldozer to the levels in an even layer.
- The new area of topsoil will have any stones removed and then seeded.
- Any stone placed at the entrance placed to facilitate the trucks will be removed and this area topsoiled and re-seeded.
- All Construction fencing will be removed, the entrance will be left as it was before the works.
- As the equipment used in the infilling and levelling processes 'belong' to the adjacent main site, these will be returned to compounds when not in use.

2.5 Environmental Constraints of Note at the Site

2.5.1 Site Habitats

The land-use surrounding the site is predominantly agricultural and improved agricultural grassland is the dominant habitat in the lands that surround the site. Other habitats represented locally include small areas of scrub, scattered trees, hedgerows and treelines. There are a number of watercourses close to the application site, including the Camac River which flows close to the north-eastern corner of the site.

2.5.2 Water Features

The Camac River which flows close to the north-eastern corner of the site.

The Camac River (IE-EA_09C020100) (to the southwest of the proposed site) and the proposed site are located within the Liffey Catchment. The proposed site is located in the (Liffey_SC_090) sub catchment.

Under the WFD, all water bodies are required to meet good status within a certain time period. Ireland is now in the second cycle of the WFD and therefore good status should be achieved in all water bodies by the end of this current cycle, i.e., 2021. If a waterbody is unlikely to achieve

this status, then it is deemed to be *At Risk*. The Camac River is described as being *Not At Risk* and of *Good Status*.

Figure 2-7: Surface water features relevant to the development site.

2.5.3 Soils, Geology & Hydrogeology Environment

Groundwater Aspects: There are no Source Protection Zones, Karst Features or Boreholes located in the immediate area of the proposed site.

Aquifer Vulnerability: The dataviewer for the Geological Survey of Ireland (GSI) described the site as being located in an area of Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones. The vulnerability rating for the proposed site is classed as moderate for the majority of the site, high and extreme in the southern section of the site, high along the northern boundary and low in the northwest corner of the site. Refer to **Figure 2.6.**

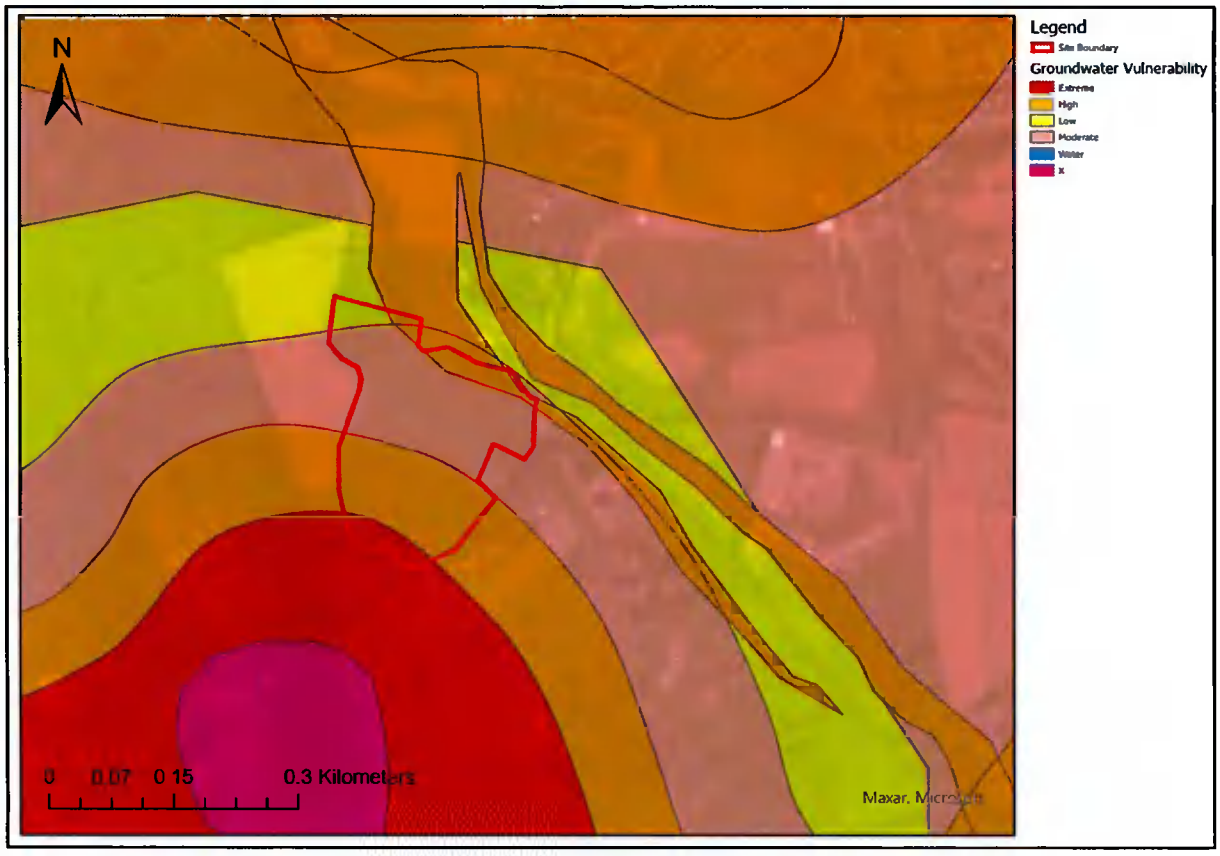

Figure 2-8: Groundwater Vulnerability at the Proposed site.

3. Construction Environmental Management Plan

3.1 Construction Environmental Mitigation

Construction environmental mitigation will be expected to follow best practice and any specific measures required in the planning conditions. The objective of this mitigation is to avoid/reduce the potential for environmental impacts during the (infill) phase.

This mitigation will be implemented by the construction contractor and is detailed in Table 3.1 below.

Table 3.1: Construction Environmental Mitigation

Aspect	Potential Environmental Impact	Description
Traffic and Transport	Impacts on road safety / traffic flows	Traffic management is detailed in the Construction Stage Traffic Management Plan. Truck movements generated from the project are estimated to be approximately 3000 truck movements over a one-month time period. • Delivery times are to be limited to the specified working hours, 08:00-13:00, Monday to Friday and 08:00-17:00 on Saturday. • A wheel wash facility will be provided for all trucks moving material to ensure no muck on roads. • Appropriate information and signage along construction route must be provided on approach roads either side of the infill site and construction site entrances as detailed in the site specific Construction Stage Traffic Management Plan, • Traffic signage and temporary construction stage traffic measures are to be implemented in accordance with the Department of Transport's Traffic Signs Manual, particularly Chapter 8 entitled "Temporary Traffic Measures and Signs for Road works".
Population and Human Health	Impacts on population and human health	• All HGV's leaving the site will directed through a wheelwash in order to prevent mud and other wastes being tracked onto public roads; • During prolonged dry or windy periods, any areas with the potential to generate dust will be watered and; • Public roads will be inspected regularly for cleanliness and cleaned as necessary.

Aspect	Potential Environmental Impact	Description
Noise	Impacts on noise sensitive locations	The mitigation measures that will be implemented on site to minimise environmental impacts relating to noise, will include All vehicle engines will be switched off when not in use; • Restricted speed limits will be implemented on site to reduce the generation of noise from moving HGV's within the site; • Working hours will be limited during which site activities are permitted to 07:00-18:00 Monday to Friday, and 08:00-13:00 on Saturdays; • A site representative responsible for matters relating to noise will be appointed to liaise with client and residents.
Soils, Geology, Hydrology and Hydrogeology	Pollution event on local soils, geology surface and groundwaters	The River Camac is approximately 70m to the closest point of infill. The following mitigation measures that will be implemented on site during the construction phase: • No construction activities will be undertaken within 70m of the River Camac. In the event, the sedimentation / erosion of soils occurs on site, strict controls will be implemented by the construction contractor to confirm that there will be no release of sediment into the River Camac during the construction phase. • Silt fencing is proposed around the entire perimeter of the field, • All soil materials will be visually inspected for signs of potential contamination. Should any contamination be identified, the relevant soils will be stored separately, sampled and disposed of by a licensed waste contractor (as required). • There will be no oils, fuels, greases, and hydraulic fluids stored onsite. • There will be no refuelling taking place onsite

Air Quality and Climate	Nuisance Dust & resulting impact on local residents	• Impacts to air quality during the construction phase are not considered to be significant. Mitigation measures that will be implemented on site during the construction phase shall include: • Hard surfaces will be swept to remove any mud or aggregate build up; • The local road in the vicinity of the development site will be inspected regularly for cleanliness and cleaned, as necessary. • All HGV's leaving the main site will be directed through a wheel wash in order to prevent mud and other wastes being tracked onto the public roads; • Any materials not suitable for infill will be removed immediately to avoid stockpiles; • Soil handling and movement will only take place when the soils are in the optimum condition. This optimum soil condition may be described as moist but friable. • No soils will be moved when they are too dry or when there are unusually windy weather conditions; • With regard to exhaust emissions and GHG emissions: • Vehicles on the site will be not left idling for more than a few minutes; • Energy consumption & emissions data will be considered in the purchasing new plant and vehicles • The proximity of the infill to the source site is noted to reduce exhaust and GHG emissions compared to a site which would be further away. • • Daily visual Inspections will be carried at the 5 locations (D1-D5) around the site boundary. All visual inspections will be summarised in the Weekly Environmental Inspection Checklist which is Appendix 1 of this CEMP. • The visual inspections will assist in monitoring the effectiveness of dust mitigation measures. • • Dust Monitoring • • Dust deposition monitoring will be undertaken on a monthly basis at 5 locations on the site boundary as shown in Appendix 1. These locations can be adjusted as required, depending on the phasing of the site works etc. • This monitoring will be carried out using Bergerhoff dust deposition gauges. • The off site laboratory analysis of the Bergerhoff jars will be undertaken at a suitably accredited laboratory and deposition will expressed as mg/m2/day. • The laboratory results will be compared against the "Technical Instructions on Air Quality Control – TA Luft" 2002 emission value for dustfall of 350 mg/m2/day. • Where measured concentrations in deposited dust are found to exceed these baseline limits the cause/source of the excessive dust will be investigated, and any additional feasible and reasonable measures available will be implemented to reduce impact and reduce any impact to the environment and/or the local community. • Any excessive levels of dust observed by the site operator or measured in the dust deposition analysis will be recorded

Aspect	Potential Environmental Impact	Description
		in the Complaints and Corrective Actions Records (Appendix 4). In addition, they will be identified and recorded in the Weekly Environmental Inspection Checklist in Appendix 1.
Biodiversity/ Ecology	Impacts on Ecological Features	Mitigation measures that will be implemented on site during the construction phase shall include: • All site development works shall adhere to best practice. • The work areas must be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out and cordoned off in advance of work commencement. • Prior to the commencement of the infill on site, the site manager and the contractors should be made aware of the ecological sensitivity of the site, both in terms of the protection of surface water and groundwater. • All site works must follow those specified in the Construction Management Plan. • Efficient construction practices and sequences shall be employed on site, and this will minimise soil erosion and potential pollution of local watercourses with soil and sediment. Unnecessary clearance of vegetation shall be avoided. Works within the site shall be avoided during periods of heavy rainfall. • In order to protect water quality in The River Camac, all site preparation and construction works shall conform to all guidelines within the document Inland Fisheries Ireland Requirements for the Protection of Fisheries Habitats during Construction and Development Works and River Sites (www.fisheriesireland.ie) and the updated guidelines entitled Guidelines on Protection of Fisheries During Construction Works in And Adjacent to Waters (2016). Guidelines in the CIRIA (Construction Industry Research and Information Association) Publications including C532 – Control of Water Pollution from Construction, guidance for Consultants and Contractors should also be followed. • A buffer zone between construction works and the river shall be maintained at all phases of construction and operation. There must be no deposition of soil within this buffer strip. • Hydrocarbon / fluid management measures shall include: o Fuels, oils, greases and hydraulic fluids will not be stored onsite. o No refuelling or lubrication of equipment shall take place
Waste Management	Ineffective waste management	No waste will be generated as a result of this project. The project in itself is reducing waste and using a by-product for beneficial re-use in line with EPA Article 27 Guidance.

4. Emergency Response Procedure

The purpose of the emergency response procedure (ERP) is to address an emergency situation which may originate on-site. The main scenario's which were considered to potentially occur on site were associated with:

- A spill or leakage;
- A fire; and

4.1 Emergency Spill/Leakage Protocol

The procedure for dealing with spillages and/or leakages on site is as follows:

- The site operator shall be notified of a spill/leakage immediately by site staff;
- Where there is any indication that environmental pollution (releases to the environment) has, or may have, taken place, then The site operator will liaise with the appropriate Authority as deemed required;
- If possible, the type & nature of the spilled material and the volume shall be confirmed. Any risks to human health and/or the environment shall be determined;
- Stop the source and contain the spillage;
- Limit the spillage effected area by blocking, diverting or confining the spillage;
- Smaller leaks/spillages shall be contained using a spill kit, where absorbent product will be applied to the spill and removed as soon as it has absorbed all the material. All contaminated spill kit material shall be put into a suitable waste container and labelled as to the contents, prior to collection by a licenced waste contractor;
- If a bigger spillage occurs, access to any surface water features is to be blocked off to stop potential discharges. Then, staff shall clear up the spillage and dispose of the spill material to an authorised waste facility;
- If a spillage results in discharges to a surface water feature or there is potential for adverse impact on the environment, the site operator shall report to the appropriate authority (eg south Dublin County Council / Irish Water, Inland Fisheries Ireland) and agree a course of action;
- A record of the spill/leakage incident shall be retained on-site.

4.2 Fire

In the event of a fire, persons near the outbreak of the fire shall alert the site operator. In an emergency situation, the appropriate services will be notified.

The following information will be provided:

1. **The name of the company**

2. Address

Saggart, Co. Dublin.

3. Details of the Fire

Emergency contact details are:

Local Garda Station: Rathcoole: 016667900

Local Fire Station: Tallaght: 016734000

Dialling 999/112 will connect the caller with any of the emergency services.

If a fire on-site has an adverse impact on the environment, South Dublin County Council, Irish Water and Inland Fisheries Ireland (as relevant) will be notified and they shall agree a course of action.

4.3 Chemicals/Oils/Fuels On-Site

No volumes of oil/fuels/chemicals are expected to be stored on site and refueling will not take place on the site. The following controls shall be implemented by the construction contractor in relation to the leakages of mobile equipment.

- Appropriate and sufficient spill control materials will be installed at strategic locations within the site. Spills kits for immediate use will be kept in the cab of mobile equipment.
- Spill kits will be stored in the site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits must include suitable spill control materials to deal with the type of spillage that may occur and where it may occur. Typical contents of an on-site spill kit will include the following as a minimum
    - Absorbent granules.
    - Absorbent mats/cushions.
    - Absorbent booms.
- Spill kits will contain gloves to handle contaminated materials and sealable disposal sacks.
- Fuel, oils, greases and hydraulic fluids will not be stored onsite.
- Re-fuelling of construction vehicles will not take place onsite.
- The contractor will ensure that no hazardous or noxious materials enters a watercourse/drain. Should this situation arise emergency procedures will be activated.

5. Silt Fencing for the River Camac.

There shall be no discharges of contaminated waters to ground or surface waters from the infill phase. In order to avoid indirect sedimentation impacts on The River Camac, there will be a buffer of c.80m and the installation of silt fence around the perimeter of the infilled area.

A silt fence will remove the potential for sediment movement during wet weather events. This is particularly important along the River Camac. The silt fence will be a permeable geotextile barrier installed vertically on support posts and entrenched in the ground. **Figure 5.1** below illustrates a silt fence in operation and attached drawing J1387-PH-001 REV 04 shows its proposed layout on the site.

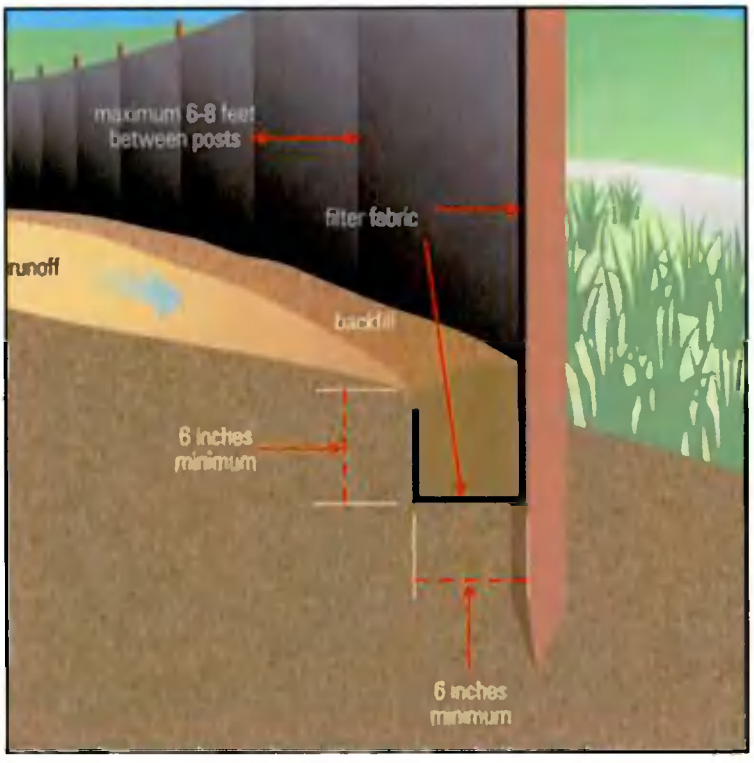

Figure 5-1: Silt fencing arrangements for vulnerable section along the River Camac.

6. Site Inspection Procedure and Checklist

Regular site assessments will be undertaken to confirm that the CEMP is being followed. These will include.

- Daily and weekly site walkovers using prescribed check lists
- Environmental Toolbox talks;
- Visual checking and recording of mechanical plant for leaks and mechanical issues in order to minimise leakage and breakdowns on site. The purpose is to identify any need for pre-emptive maintenance, so as to avoid any accidental spillage of hydrocarbons.

The checklists proposed for use are appended to this CEMP.

Attachment 1 – Environmental Checklist

Introduction & Scope

This environmental inspection procedure outlines the requirements for the conduct of regular visual inspections at the site, Slade Saggart, Co. Dublin.

Regular visual inspections are performed to ensure a clean working environment.

The inspections also aim to identify potential environmental hazards in the work area and to minimise associated risks.

Responsibilities

The site operator

- Undertake regular visual inspections of the Site;
- Undertake and record the Weekly Check inspections (per checklist attached); and
- Implement and adhere to any required corrective actions/ control measures.

Inspection Procedure

1. Review the Weekly Checklist Form;
2. Conduct the inspection by walking around the work environment;
3. Identify any hazards and areas of non compliance against the checklist;
4. Record all findings, ensuring the Form is signed and dated and includes details of the personnel conducting the environmental inspection;

Environmental Inspection Checklist

Date: _____

Person: _____

Weather condition (precipitation, sun, wind- speed and direction)

Environmental Inspection Checklist	Comments	Corrective Actions Needed (Y/N)
GENERAL		
Site clean and tidy – no litter, good housekeeping?		
Are there any leaks or mechanical issues with plant and equipment on-site?		
Do any corrective action records remain open?		
DUST EMISSIONS		
Are site activities sprayed to minimise dust generation?		
Are dusty sections of the site sprayed with water?		
Are speed control measures being complied with		
WATER ENVIRONMENT		
Are emission values at the monitoring points being met?		
Are vehicles cleaned before leaving the main site?		
Are wheel washing facilities at the main site properly maintained		
Is sand and silt in the wheel washing bay regularly removed?		
Is the site entrance and surrounding public road kept clean and free of mud?		

Environmental Inspection Checklist	Comments	Corrective Actions Needed (Y/N)
Is wastewater regularly removed off-site		
Is water recycled where possible for dust suppression/ wheelwash etc?		
NOISE		
Is the site operating within the agreed working hours?		
Is idle equipment turned off?		
Any noise mitigation measures adopted?		
WASTE MANAGEMENT		
Are wastes regularly removed off-site for recycling/ appropriate disposal?		
Are all wastes collected and disposed of by licensed contractors		
Are waste containers appropriately & clearly labelled?		

Dust Monitoring Locations