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Infrastructure Report

Residential Development on Lands at Mooretown, Swords

For

FINGAL COUNTY COUNCIL

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1 INTRODUCTION

1.1 BACKGROUND

AKM Design were commissioned by Fingal County Council to prepare a civil infrastructure design report for the proposed Residential Development at Mooretown, Swords. This report is intended to form part of a Planning Submission detailing the proposed civil infrastructure of the site.

1.2 EXISTING SITE

The existing site is a zoned residential site located in Mooretown. The site is split into 2no. land parcels located south of the Rathbeale Road (R125). The proposed development site lies either side of permitted development at Mooretown lands (referred to as Mooretown Phase 1 Planning Ref. LADP/002/24), and is located at the northwestern and southern portions of the site, integrating with Phase 1.

Figure 1.1 Proposed site location

1.3 EXISTING GROUND CONDITIONS

A detailed site investigation of the subject site and the previously approved phase was undertaken by Site Investigations Ltd. In July 2024 to determine the ground conditions and soil type characteristics of the site. The ground investigation included boreholes, trial pits, dynamic probing, CBR testing waste classification laboratory testing and extensive soil infiltration testing. Soil testing was also undertaken to determine the soil type and soil classification. The report concluded that the site primarily consisted of brown and brown grey overlying black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content soils. MADE GROUND was observed in 4no. trial pits.

Infiltration test results were poor in large parts of the site which were unsuitable for infiltration.

1.4 PROPOSED DEVELOPMENT

The proposed development consists of 360 no. residential units; a mix of houses, own-door duplexes, and apartments arranged in urban blocks ranging from 2- to 5-storeys, at a net density of 41 dwellings per hectare. A 2-storey crèche of c. 670 sq.m is proposed at the centre of the site. Supporting infrastructure proposed includes 580 no. car parking spaces (resident and visitor), 1,009 no. cycle parking spaces, public open space, communal amenity space, pedestrian and cycle links, hard and soft landscaping, connections to all utilities, and all associated and enabling site works.

Figure 1.2 Proposed Site Layout Plan

2 EXISTING PUBLIC SERVICES

2.1 GENERAL

A comprehensive topographical survey was carried out for the subject site. Existing drainage and utility records in the vicinity of the site were obtained from Uisce Eireann.

A summary of the existing services is provided below, and the Uisce Eireann records can be found as an appendix to this report.

2.2 FOUL WATER DRAINAGE

The proposed foul water drainage network is to be fully integrated into the network currently under construction as part of the Phase 1 works. Capacity has been included in this network for this purpose.

Uisce Éireann have been engaged as part of the design process to confirm foul drainage arrangements for the proposed development. Northern area will be connected to the on-site pump station, which has already been approved by Irish Water under reference CDS2400952001 considering the additional units proposed as part of this application. This pump station is currently under construction as part of the Phase 1 works. However, a foul gravity pipe bridge is required to facilitate this connection, and it will be submitted for approval to Uisce Éireann.

Centre-Western and Southern areas will be connected into the spurs left in Phase 1 of the development, where the design also accounted for the foul loading generated by the Phase 2 units. A Pre-Connection Enquiry was submitted on 2nd May 2025 under reference CDS25003155, and a Confirmation of Feasibility has been received and is attached to this report as an Appendix.

Figure 2.1 Existing Services Map [Source: Uisce Eireann]

2.3 SURFACE WATER DRAINAGE

The existing site is divided by existing drainage ditches which flow from the east and west into the site before combining within Phase 1 to flow north under Rathbeale Road and through Rathbeale Archaeological Park to discharge into the Broadmeadow River. This site is steeply graded and generally falls from highpoints of 40m in the south-west to low points of 24m to the north. The existing drainage ditches form isolated low points within the site. Infiltration characteristics are poor throughout the site.

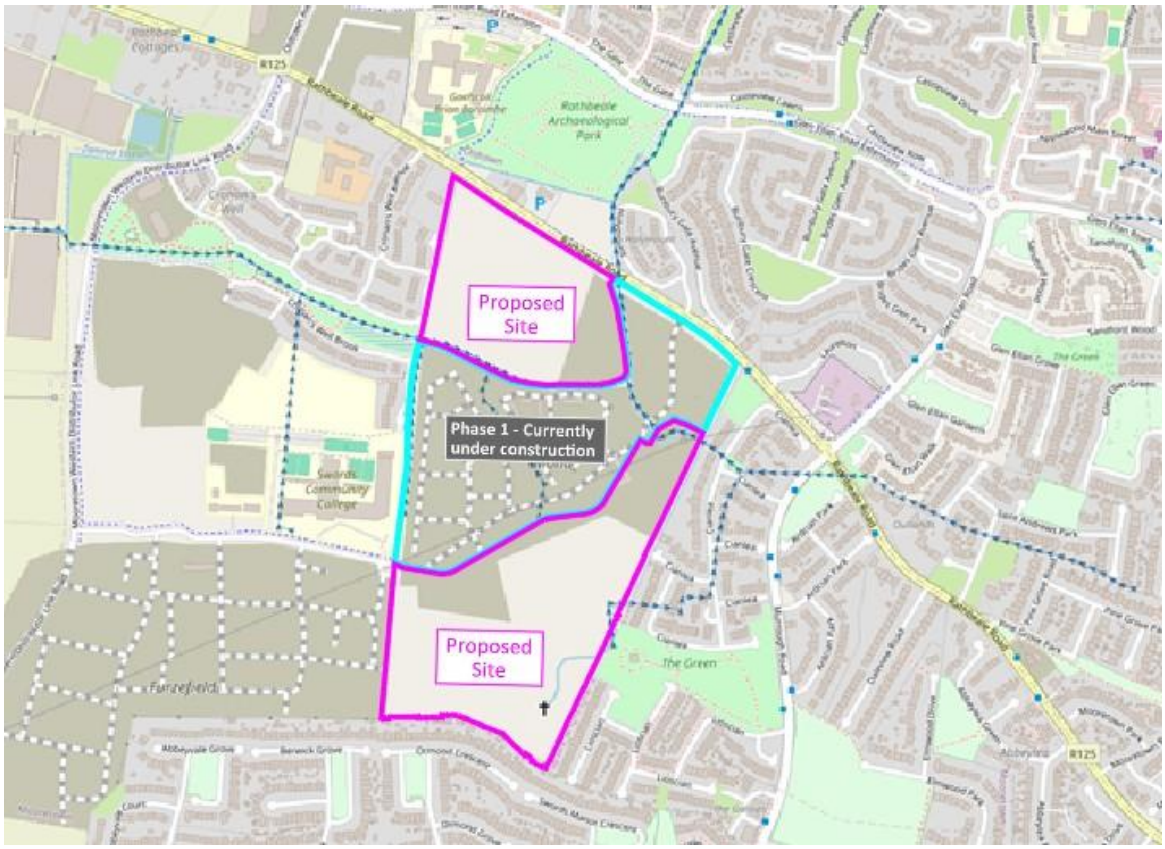

Figure 2.2 Existing Watercourses In/Around Subject Site [Source: Site Visit & EPA]

2.4 MAINS WATER SUPPLY

The proposed water supply network is to be integrated into the Phase 1 network which is currently under construction. Provision has been made for this through the construction of 150mm diameter connection spurs within the Phase 1 network for supply to the subject site.

3 PROPOSED SURFACE WATER DRAINAGE & ATTENUATION

3.1 SURFACE WATER POLICY

The management of surface water for the proposed development has been designed to comply with the policies and guidelines outlined in the Greater Dublin Strategic Drainage Study (GDSDS), and the requirements of Fingal County Council. The guidelines require the following 4 main criteria to be provided by the design:

- Criterion 1: River Water Quality Protection – satisfied by providing interception storage and treatment within the rain gardens, swales, tree pits, detention basins, permeable paving and garden areas.
- Criterion 2: River Regime Protection – satisfied by attenuating to greenfield run-off rates.
- Criterion 3: Level of Service (flooding) for the site – satisfied by the development's surface water drainage design, planned flood routing, run-off contained within site, flood storage and all buildings set greater than 0.5m above 100-year flood level & high-water level in the attenuation features.
- Criterion 4: River flood protection – attenuation volume and discharge limit designed to greenfield run-off rates.

3.2 SURFACE WATER STRATEGY

The details of the surface water drainage strategy for the subject site are presented in this report for assessment. To meet the requirements of the surface water policy above, the surface water strategy has been described in this section to give a clearer indication of how the design of the development has progressed to the submitted design.

In the engineering assessment of surface water quality and routing management, the fall location of the rainwater and its subsequent flow route to the receiving environment play significant roles. Treatment will be determined based on these parameters. Both source and site-wide treatment/SUDS measures will be strategically positioned along various flow routes. Consultations with Fingal County Council (FCC) indicated a preference for nature-based drainage solutions which were implemented in the proposed drainage strategy for the site which will be designed to comply with the FCC Green/ Blue Infrastructure for Development Guidance Note and the CIRIA SUDS Guide for best practice.

The subject site has six primary categories of surface water run-off: green space (Private Gardens), soft landscaping (Public Spaces), roofs, hard landscaping, parking, and roads. These categories are further differentiated based on public and private ownership. The implementation of sustainable urban drainage components depends on the flow trajectory and anticipated ownership and maintenance responsibilities. Each form is discussed, and concepts established

- Green Space (Private Gardens & Private Communal Spaces).

The primary recipients of the surface water are groundwater and plant uptake. Minimal maintenance is anticipated. To mitigate local flood risks, the design will include overflow gullies. For most storm events up to 1%AEP, there will be no input to the conveyance system, in accordance with the recommendations of the GDSDS.

- Green Space (Public Parks)

The primary recipients for surface water in these areas are groundwater and plant uptake. Landscaping and vegetation strategies will be employed to enhance drainage and promote plant water uptake. Flow paths and SuDS/NBS features direct runoff towards public open space. The open areas will be formed to encourage rainfall runoff to be managed as part of the landscape and it is anticipated that areas of greenspace may be subject to temporary ponding particularly after significant rainfall. Day-to-day rainfall runoff is proposed to travel along low flow route. Due to the steep topography of the site swales are proposed to manage excess runoff from open spaces.

- Roofs (Housing Units)

Run-off from the roofs will be guided through the stone buildup underneath the permeable paving and towards vegetated zones at the property's front. In extreme events, an overflow connection to the main conveyance drainage network will be provided.

- Hard Landscaped Areas (footpaths)

Water run-off in these regions will typically be channelled to edge drainage systems or to systematically arranged rain gardens, bio-retention areas, swales, vegetated areas, and green spaces. Hard landscaped (Footpaths) surfaces are designed to slope towards green spaces, facilitating natural drainage to the subsoil or absorption by plants.

- Roads (Public)

Water run-off in roads areas will typically be channelled to kerb edge/road edge, which is then directed towards inlets (Dropped kerbs or similar) to green spaces/wetlands, rain gardens, bioswales or depressions. Road runoff will flow over the edge into these spaces, facilitating natural filtration and absorption by the underlying geology or vegetation.

3.3 SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS) ASSESSMENT

In accordance with the GDSDS and the limitations on drainage within the site it is proposed to provide SuDS for managing surface water from the development. The aim of the SuDS strategy for the site will be to:

- Attenuate surface water runoff
- Reduce surface water runoff
- Reduce pollution impact
- Replicate the natural characteristics of rainfall runoff for the site

An assessment of the potential SuDS that could be incorporated within the site was conducted using the SuDS Manual, CIRIA 753 and the BRE 365 Digest for Soakaway Design. The following SuDS components are being incorporated into the drainage design for the site.

Permeable Pavement (infiltration type system):

Porous paving block surfacing which can treat rainwater, at source, and allow infiltration through to an underlying porous sub-base. Water is stored within the voids of the sub-base before being slowly released through natural flow via the porous medium. As well as reducing the amount of run-off from the surface, permeable paving will slow down the rate of run-off from the pavement in extreme rainfall events contributing to attenuation of flows. In addition, permeable paving will increase the quality of water which is intercepted by the system through filtration, biodegradation, pollutant absorption and settlement and retention of solids, also the peak flows to the outfall will enhance settlement and biodegradation of pollutants. It is proposed to use permeable paving on all the private car-parking areas as shown on the enclosed drawings.

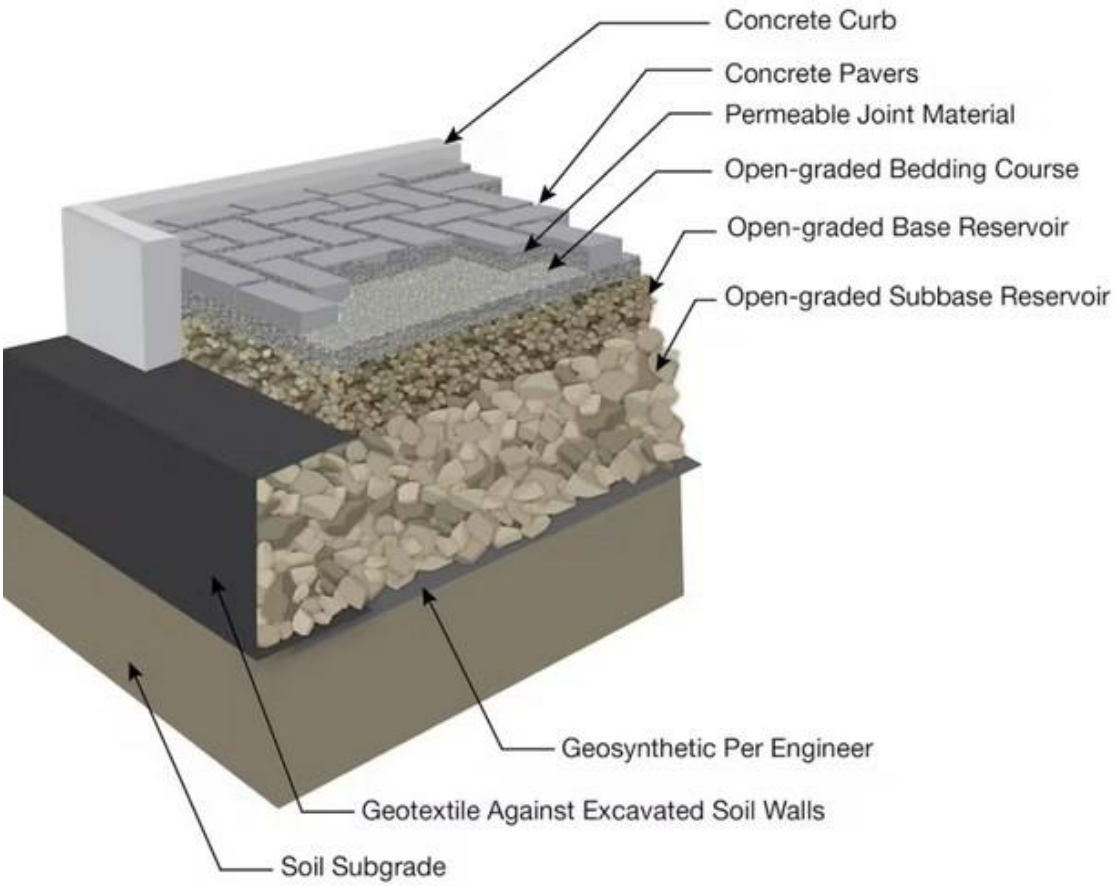

Figure 3.1 Permeable paving to private driveway

Swales:

Swales are shallow, flat bottomed, vegetated open channels designed to convey, treat and often attenuate surface water runoff. When incorporated into site design, they can enhance the natural landscape and provide aesthetic and biodiversity benefits. They are used to drain roads, paths or car parks where it is convenient to collect distributed inflows or runoff or as a means of conveying runoff on the surface while enhancing access corridors or other open space. Swales can replace conventional pipework as a means of conveying runoff, and the use of adjacent filter strips can also remove the need for kerbs or gullies. For this site swales are proposed for use in open space areas where sheet flow from roads discharges directly into the swale. Swales operate best for treatment and interception of runoff when sheet flow discharges directly from road edges into swales. For this reason, footpaths in public open space areas are placed behind the swales and not directly adjacent to roads where they would obstruct this flow. Due to the steep topography of the site, some swales will incorporate check dams or weirs to slow the rate of discharge from the swale and filter drains to maximise infiltration.

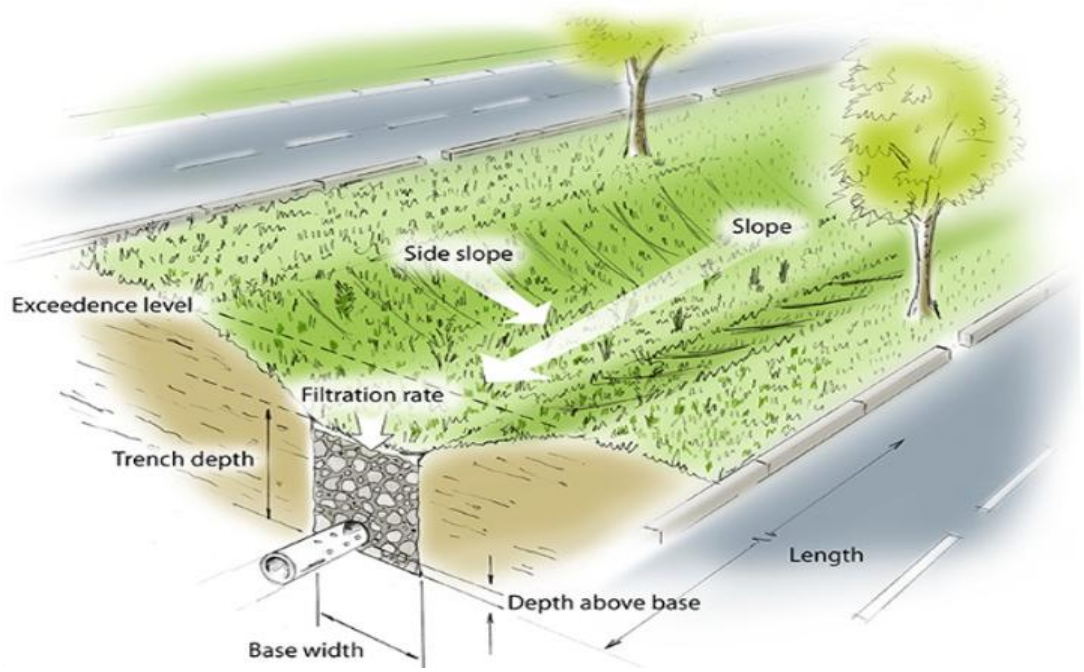

Figure 3.2 Schematic drawing of a typical swale

Bioretention systems:

Bioretention systems (including rain gardens) are shallow landscaped depressions that can reduce runoff rates and volumes and treat pollution using engineered soils and vegetation. They are particularly effective in delivering Interception and can also provide:

I. attractive landscape features that are self-irrigating and fertilising
II. habitat and biodiversity
III. cooling of the local microclimate due to evapotranspiration.

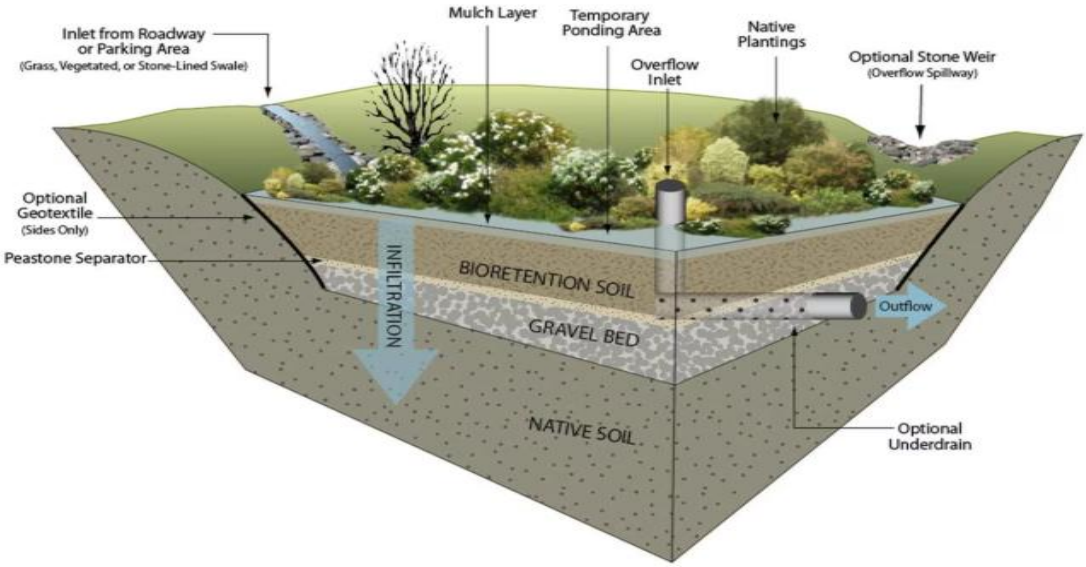

Figure 3.3 Bioretention system

3.4 ATTENUATION

Long term storage of runoff for major storm events is provided using above & below-ground storage areas with an emphasis on a SUDS based approach which prioritises interception and infiltration of "first-flush" runoff. The site is divided into 4no. drainage sub-catchments each designed with respect to the 3no. drainage sub-catchments under construction within Phase 1.

Prior to discharge to the public network, each catchment is provided with a flow control to limit discharge of runoff during major storm events and promote utilisation of the SUDS components within each catchment area. These SUDS components will provide treatment via filtration, infiltration, evapo-transpiration and long-term storage of runoff from major storm events to minimise the impact of the development on the downstream receiving network.

The runoff discharge rate from the site will not exceed the QBAR greenfield equivalent runoff rate. The stormwater attenuation required for this site was calculated using the Causeway Flow hydraulic modelling software which accounts for the fact that no water will be discharged from the site above the QBAR allowable outflow.

The impermeable areas contributing to the attenuation volume have had the following reduction factors applied:

- Impermeable roofs, roads, footpaths and shared surfaces; a runoff coefficient of 0.90 is being applied to roofs with 0.90 applied to roads & footpaths. This coefficient is considered reasonable to take account of run-off not collected and stored within the micro and macro texture of the surfacing. (Various sources recommend different reduction coefficients e.g. IS EN752 recommends Runoff Coefficient (C for the Rational Method) of 0.9 to 1.0 for impermeable areas and steeply sloping roofs. For flat roofs it recommends 0.5 to 1.0 depending on area).
- Areas of permeable paving, a runoff coefficient of 0.5 has been applied.
- Green areas, a runoff coefficient of 0.10 has been applied to gardens and 0.47 to public open spaces due to the relatively steep slope of the site and the poor infiltration characteristics. This is consistent with soil type 4 according to the CIRIA SuDS Manual.

A summary of the surface water runoff reduction factors and associated areas for each catchment is shown in Table 3-1 below.

Area	Gross Area (m^2)	Equivalent Impermeable Area (m^2)	Coefficient Runoff
Roads & Footpath	23,186	20,867	0.900
Permeable Parking	13,557	6,779	0.500
Roof	17,963	16,167	0.900
Open Spaces	27,933	13,129	0.470
Green areas & Gardens	16,327	1,633	0.100
Others	-	-	-
Total	**98,966**	**58,574**	0.592

Table 3.1 Surface Water runoff coefficients

Storage of excess runoff takes place in above-ground detention basins and attenuation tanks

3.5 DESIGN STANDARDS

Storm-water drainage has been designed in accordance with the GDSDS Volume 2. The following design parameters are applicable to the design:

- Time of entry: 5 minutes
- Pipe friction (Ks): 0.6mm
- Minimum velocity: 1.0 m/s
- Standard Average Annual Rainfall (SAAR): 770.8mm
- M5-60: 15.2mm
- Ratio r (M5-60/M5-2D): 0.277
- No flooding of storm network up to 100-year return period with climate change
- FFL - freeboard: greater than 500mm above 100-year flood level
- Climate Change Factor: 20%
- Urban Creep: 10%

Surface water sewers have been designed in accordance with IS EN 752 and the recommendations of the 'Greater Dublin Strategic Drainage Study', (GDSDS).

Surface water sewers will consist of uPVC or concrete (to IS 123) and laid strictly in accordance with Fingal County Council requirements for taking in charge. Manholes will generally take the form of precast concrete rings with precast perfect bases and constructed in accordance with Fingal County Council guidelines & Uisce Eireann Standard Details.

Surface water private drains will generally be 100mm to 150mm diameter and generally will consist of uPVC (to IS123) with concrete surround or concrete socket and spigot pipes (to IS 6). These drains will be laid to comply with "Recommendations for Site Development Works for Housing Areas" by the Department of the Environment and Local Government, Technical Guidance Document, Section H and B.S. 8301: Building Drainage.

3.6 CLIMATE CHANGE

Surface water calculations for the development made use of rainfall values for the Mooretown area as provided by Met Eireann. Rainfall intensities were increased by a factor of 20% to take account of climate change, in accordance with the GDSDS.

3.7 URBAN CREEP

In accordance with the recommendations of the CIRIA SuDS Manual, a 10% urban creep factor was applied to the impermeable residential areas, roofs and driveways. Roads and landscaped areas were maintained at their design values, as these areas are not subject to the density increases without planning applications, typically associated with urban creep.

3.8 SURFACE WATER QUALITY IMPACT

Majority of the proposed development does not present a high risk of run-off contamination as most of the site coverage will be roof area for the housing, green area (open spaces and house yards) and pedestrian walkways. The CIRIA SuDS Manual defines residential roofs and residential streets/driveways as "Low" or "Very Low" pollution hazard level for discharge to groundwater. The Manual also notes that "the risk posed by surface water runoff to groundwater is often low because of the protection afforded by the layers of unsaturated soils between the infiltration surface and the groundwater receptor." Wetlands, swales, permeable paving/soakaways and infiltration trenches are considered adequate for controlling the quality of the runoff expected from a residential development to provide protection of groundwater. They operate by filtering silts, hydrocarbons and other pollutants out of runoff through filtration.

3.9 INTERCEPTION

The GDSDS recommends that no run-off should pass directly to a river for rainfall depths of 5mm and up to 10mm if possible, i.e. interception. This development's SuDS-focused design means that interception storage is provided through permeable paving, swales, filter drains and tree pits/ bioretention areas. This interception storage will provide attenuation, filtration and treatment of "first-flush" runoff from within the development. Since the discharge rate is limited to Qbar we estimate that this development will have a net positive impact on the regional drainage network.

3.10 FLOOD RISK

The risk of flooding in the pre-development environment and potential impacts on the proposed development were addressed in the Site-Specific Flood Risk Assessment in Section 8 of this report. The assessment determined that any highly vulnerable developments are at a very low risk of flooding for even the CFRAM Coastal Flood Extents – High-End Scenario mapped by the OPW.

4 SuDS OPERATION & MAINTENANCE PLAN

4.1 INTRODUCTION

This section sets out the principles for the long-term management and maintenance of the Sustainable Drainage Systems (SuDS) to be constructed at the new development.

The purpose of this section is to set out the basis of the development SuDS Maintenance Plan and to ensure that the local authority is entrusted with a robust inspection and maintenance programme, ensuring the optimum operation of the surface water drainage network is continually maintained for the lifetime of the development and to prevent the increased risk of flooding both on and off site in accordance with the National Policy.

The activities listed in this document are generic to the relative SuDS types and represent the minimum maintenance and inspection requirements, however additional tasks or varied maintenance frequency may be instructed by the maintenance company as required. Specific maintenance needs of the SuDS elements should be monitored, and maintenance schedules adjusted to suit requirements.

All those responsible for maintenance should follow relevant Health and Safety legislation for all activities listed within this report including lone working, if relevant and risk assessments should always be undertaken.

Any contractor employed by the Management Company shall carry out periodic maintenance of all such SuDS in accordance with the schedules listed in this report. Inspection checks shall be carried out by a qualified and competent person, at the minimum intervals listed within the schedules and the appropriate work carried out.

4.2 SuDS LAYOUT & DESIGN

The storm water drainage strategy for the proposed development utilises SuDS features to intercept and convey all pluvial surface water runoff. The design of the system aims to attenuate runoff and encourage infiltration.

The proposed storm water system consists of the following SuDS components:

- Permeable paving.
- Bioretention systems/rain gardens/treepits.
- Swales.

There are three categories of maintenance activities referred to in this report:
Regular maintenance (including inspections and monitoring).
Consists of basic tasks done on a frequent and predictable schedule, including vegetation management, litter and debris removal, and inspections.

Occasional maintenance
Comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks (sediment removal is an example).

Remedial maintenance
Comprises intermittent tasks that may be required to rectify faults associated with the system, although the likelihood of faults can be minimised by good design.

Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and as such timings are difficult to predict.

4.3 SuDS MANAGEMENT & MAINTENANCE

Permeable Block Paving (Private Areas)

The following section refers to recommendations in the 'Design & Construction of Concrete Block Permeable Pavements', Edition 7, produced by Interpave. It is known that the infiltration rate of permeable block paving will decrease over time due to the build-up of detritus in the jointing material, and then eventually stabilise with age. This is accounted for in the pavement hydraulic design with a suitable factor of safety.

The maintenance of areas of permeable block paving will be the responsibility of the management company.

Recommended maintenance is minimal, as outlined in Table 1 below, and generally no more extensive than that for conventional block paving and less than for conventional gully and pipe drainage. Also, any problems with permeable block paving become apparent on the surface via a visual inspection, unlike the below-ground inspections needed for traditional pipe drainage. If the below measures are implemented as recommended, then the hydraulic performance of the permeable pavement should be unaffected over its design life. However, if the infiltration rate of the paving reduces significantly, allowing storm water to pond on the surface then it is recommended that the blocks should be uplifted and the laying course cleaned or replaced. The laying course and jointing material and permeable paving blocks may be reused, minimising costs.

Pervious pavements should be regularly cleaned of silt and other sediments to preserve their infiltration capacity. Extensive experience suggests that sweeping once per year should be sufficient to maintain an acceptable infiltration rate on most sites. A brush and suction cleaner should be used for regular sweeping. Care should be taken in adjusting vacuuming equipment to avoid removal of jointing material. Any lost material should be replaced.

<u>Planned Preventative Maintenance</u>

Routine Inspection & Monitoring

- Frequency: Quarterly and after major storm events
- Key Checks:

i. Inspecting the surface for sediment accumulation and moss/algae growth.
ii. Checking for standing water after rainfall (indicating reduced permeability).
iii. Assessing joints and infiltration capability of paving.
iv. Inspecting surrounding drainage systems, channels, and outfalls.
v. Checking for displaced or damaged paving blocks

<u>Regular Maintenance Tasks</u>

i. Sweeping & Vacuuming (Every 3-6 Months)
ii. Using a mechanical sweeper with suction to remove fine sediment
iii. Weed, Moss & Algae Control (As Needed, Typically Annually)
iv. Applying herbicide or manually removing weeds growing in joints
v. Jointing Material Replenishment (Annually or as needed)
vi. Inspecting and topping up jointing aggregate in block paving to prevent shifting.
vii. Identifying any subsidence, heaving, or cracking in the pavement
viii. Conducting a simple permeability test by pouring water and timing infiltration
ix. Checking to ensure surrounding kerbs, channels, and geotextiles are intact.

<u>Response Maintenance (RM) – Emergency Maintenance & Repairs</u>

Blocked or Clogged Surface (Water Ponding or Poor Drainage)

- Deploying a regenerative air sweeper or vacuum sweeper for deep cleaning.

- If sediment buildup is excessive, removing and replacing the top layer of jointing aggregate.
- Power brushing to restore porosity.

Flooding or Severe Water Runoff Issues

- Inspecting and clearing nearby drainage channels, gullies, or outlets.
- Checking for soil or debris washed onto the pavement and removing promptly.
- Investigating subsurface clogging; if severe, removing and replacing filter layers.

Structural Damage (Dislodged, Sunken, or Cracked Blocks)

- Re-bedding and replacing damaged or loose blocks using the same material type.
- If subsidence is evident, lifting blocks, recompacting the sub-base, and reinstalling paving.
- For extensive cracking, investigating underlying causes such as heavy loads or poor sub-base compaction

Oil or Chemical Spills

- Containing and absorbing spills using sand, absorbent pads, or specialist granules.
- Removing and replacing contaminated jointing material if necessary.
- Using environmentally friendly degreasers to break down oil residues

Vandalism, Accidents, or Heavy Vehicle Damage

- Replacing vandalized or broken paving blocks with matching material.
- Reinforcing high-traffic areas with heavier-duty paving or sub-base improvements.
- Installing protective bollards or barriers in vulnerable areas to prevent vehicular damage

Freeze-Thaw & Winter Damage

- Repairing frost heave damage by relaying affected paving blocks and ensuring proper sub-base drainage.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 4.1 - Maintenance Plan for Pervious Pavements

Bioretention System/Rain Gardens/Treepits

During the first few months after installation, the system should be visually inspected after rainfall events, and the amount of deposition measured, to give an idea of the expected rate of sediment deposition. After this initial period, system should be inspected each quarter, to verify the appropriate level of maintenance.

Litter picking should be frequent, as rubbish is detrimental to the visual appearance of bioretention systems. Frequent street sweeping in the catchment area will increase the time interval between cleaning out forebays or the filter surface and will reduce the loading or fine suspended solids that can potentially clog the filter medium.

Herbicides and pesticides (such as Roundup) and fertilizers should not be used on bioretention areas. This is because these pollutants will wash thought the system quite easily.

Planned Preventative Maintenance

Routine Inspection & Monitoring

- Frequency: Quarterly (minimum) and after major storm events
- Key checks:

i. Inspecting inlets, outlets, and overflow structures for blockages.
ii. Checking for standing water after rainfall (indicating reduced infiltration).
iii. Assessing vegetation health, density, and coverage.
iv. Inspecting soil conditions to detect compaction or erosion.
v. Checking for signs of sediment accumulation in filter media.
vi. Monitoring pollutant loads (oil, litter, debris).
vii. Verifying that underdrains (if present) are functioning correctly.

Regular Maintenance Tasks

Debris & Litter Removal (Monthly or as needed)

- Removing organic debris, rubbish, and leaves to prevent clogging.
- Checking to ensure no build-up around inlets, outlets, and overflows.

Weeding & Vegetation Management (Every 3-6 Months)

- Removing invasive plant species to maintain biodiversity.
- Trimming vegetation to encourage healthy root development and maintain design function.
- Replanting if necessary to ensure adequate plant coverage for pollutant filtration.

Mulch Replacement (Annually)

- Topping up or replacing mulch layer to maintain moisture retention and prevent weed growth.
- Removing and replacing contaminated mulch if signs of pollution are present.

Sediment Removal (Annually or as needed)

- Scrapping off excess sediment from the surface to prevent clogging.
- If infiltration is compromised, removing and replacing the top layer of filter media.

Infiltration Rate Testing (Every 1-2 Years)

- Conduct percolation tests to ensure design infiltration rates are maintained.
- If infiltration is slowing significantly, consider remedial aeration or soil replacement.

Structural & Hydraulic Functionality Checks (Annually)

- Inspecting kerbs, embankments, and retaining structures for stability.
- Ensuring that flow control devices, underdrains, and outfalls are working correctly.
- Checking that the system directs water properly and does not bypass treatment.

Response Maintenance (RM) – Emergency Maintenance & Repairs

Blocked or Overflowing Drainage System

- Clearing inlets, pipes, and outlets using manual or mechanical means.
- Removing accumulated silt and check for underlying infiltration issues.
- Restoring vegetation or replace filter media if clogging persists

Persistent Standing Water / Reduced Infiltration

- Aerating or till the topsoil layer to improve permeability.
- Removing and replacing clogged filter media if necessary.
- Checking and clearing underdrains if present.

Structural Damage (Erosion, Bank Slumping, or Washouts)

- Reinforcing eroded areas with additional vegetation or biodegradable erosion control blankets.
- Adjusting grading and introducing additional check dams or flow dissipators.
- Recompacting and reshaping embankments if structural failure is evident.

Pollution Incidents (Oil, Chemical, or Heavy Metal Contamination)

- Isolating the affected area and removing contaminated soil or mulch.
- Applying absorbents for oil spills and disposing of waste correctly.
- Replacing impacted vegetation and filter media

Vandalism, Unauthorized Access, or Damage from Vehicles

- Repairing broken fencing, signage, or protective barriers.
- Replacing damaged vegetation and mulch.
- Installing bollards or barriers in vulnerable locations to prevent vehicle encroachment

Maintenance schedule	Required action	Typical frequency
Regular inspections	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
Regular maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
Occasional maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years

Table 4.2 - Maintenance Plan for Bioretention System

Detention Basins/Swales

The operations contained within this section specific to the maintenance of landscaping, shall be read in conjunction with any development landscape maintenance plan(s).

The land drainage system including the detention basin, swales and associated and pipework will be subject to a routine monitoring and maintenance schedule as part of the general site management. This will be carried out at regular intervals between April and October and between November March unless otherwise detailed. A record of maintenance visits and remedial operations shall be maintained. The following guidelines are offered as an initial regime, but maybe either increased or decreased by the management company depending on the local environment and any external contributing factors.

The key maintenance requirement for the detention basins, swales and associated pipework will be the maintenance of vegetation and mowing of grass within and on the banks/verges and the removal of accumulated sediments and collection of litter and debris.

During the inspections the general operation, and structural condition of the inlet / outlet headwalls and any erosion of banks or scour control features should be identified and rehabilitated as required.

Additional vegetation in and on the banks of the basins should be trimmed at least twice a year or as required to maintain a height of 75–150mm. Cuttings from any clearance work should be removed from the basin/swale to avoid it causing blockages downstream.

Accumulated sediments should be removed from the bed of the swale as required (once deposits exceed 25 mm in depth). The frequency of this operation can vary depending on local conditions. However, it is recommended that the level of silts should be monitored at least once a year and a maintenance regime implemented to suit.

De-silting of the any area will usually be on a 10–15-year cycle depending on the on-going silt level checking. The desilting work will be carried out under the supervision of consulting engineers and to a pre-agreed method statement. Such a method statement should be submitted in writing to Fingal County Council and agreed in advance of the commencement of the works.

Planned Preventative Maintenance

Routine Inspection & Monitoring

- Frequency: Quarterly and after major storm events
- Key Tasks:

i. Checking for standing water, indicating potential clogging or poor infiltration.
ii. Inspecting inlets, outlets, and overflow structures for blockages or erosion.
iii. Assessing vegetation health and coverage to ensure optimal filtration.
iv. Examining soil conditions for compaction, sediment accumulation, or erosion.
v. Monitoring slopes and embankments for stability and washout risks.
vi. Ensuring surrounding areas are draining correctly into the bioretention system

Regular Maintenance Task

Debris & Litter Removal (Monthly or as needed)

- Removing leaves, litter, and organic debris to prevent blockages.
- Clearing any sediment buildup from inlets and outlets

Weeding & Vegetation Management (Every 3-6 Months)

- Removing invasive species and ensuring diverse plant growth for filtration.

- Pruning plants to maintain intended water flow and avoiding overgrowth.
- Replanting any areas with poor vegetation cover to maintain effectiveness.

Mulch & Soil Replacement (Annually or as required)

- Replenishing mulch layers to maintain moisture and support filtration.
- Aerating or replacing soil

Sediment Removal (Annually or as needed)

- Removing accumulated sediments to prevent clogging and maintain flow.
- If excessive, investigate upstream sediment sources and implement mitigation.

Hydraulic Functionality Checks (Annually)

- Ensuring the system retains and infiltrates stormwater within the expected timeframe.
- Verifying that underdrains (if present) are functioning properly.
- Checking that flow paths are free from obstructions and erosion.

Response Maintenance (RM) – Emergency Maintenance & Repair

Blocked Inlets or Outlets

- Removing obstructions manually or with vacuum equipment if severe.
- Flushing outlets and checking for structural damage

Standing Water or Poor Drainage

- Loosening or replacing compacted soil layers.
- Excavating and removing accumulated sediments from the surface.
- Checking underdrain system and flushing if necessary

Erosion or Bank Slumping

- Regrading and stabilising eroded areas with erosion control blankets or vegetation.
- Adjusting flow paths or installing check dams if necessary.
- Reinforcing embankments with additional planting or soil stabilization techniques

Vegetation Die-Off

- Replanting with native, flood-tolerant species suited to bioretention.
- Amending soil with organic material to improve plant health.
- Assessing water availability and irrigation needs during dry seasons.

Overflow or Flooding Issues

- Checking that overflow structures are properly directing excess water.
- Adjusting flow controls upstream to slow runoff entry.
- Considering expanding or modifying the basin/swale if persistent issues occur.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23)
Occasional maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required

Table 4.3 - Maintenance plan for the Detention basins/Swales

4.4 RECORD KEEPING

All Sustainable Drainage Systems (SuDS) on-site will be subject to a comprehensive record-keeping system throughout construction.

Key records will consist of as-built drawings, hydraulic performance data, maintenance logs, inspection reports, repair history, and vegetation management records

Digital records will be securely stored and made accessible to relevant stakeholders, including site management, maintenance personnel, and local authorities, ensuring transparency and accountability. This systematic approach to record-keeping will facilitate timely interventions, support future site modifications, and provide a historical reference for SuDS performance over the site's lifetime.

5 PROPOSED FOUL WATER DRAINAGE

5.1 PROPOSED FOUL WATER LAYOUT

The foul drainage network for the site will be integrated into the network for Phase 1 and capacity has been built into the Phase 1 network to accommodate the proposed development.

The foul drainage network will be divided into 2no. catchments: The 53 units in the northern cell of the proposed development will connect via gravity to the foul pump station currently under construction as part of the Phase 1 works. This pump station will discharge to the gravity foul network within Phase 1. Capacity has been built into the pump station for these additional units. The southern part of the proposed site will connect via gravity via 4no. connections Phase 1 pipe network which connects to the public network west of the site in the Cronan's Well estate. Capacity has been allowed in the network for this.

A pre-Connection Enquiry was made to Uisce Eireann for which a Confirmation of Feasibility (CoF) was issued on Aug 26th 2025, and Statement of Design Acceptance (SoDA) on Mar 16th 2026. It indicated that there is capacity in the public network subject to the completion of upgrade works to the Glen Ellen Road Storage Tank which is currently under construction via third party. It also indicated that the Phase 2 network will be reviewed in conjunction with the Phase 1 network at connection application stage. The CoF and SoDA are attached as appendix to this report.

5.2 DESIGN CALCULATIONS

The proposed foul water drainage system for the subject site has been designed to discharge into the existing foul drainage system via gravity in the Cronan's Well Estate. Minimum gradients and pipe diameters for the main sewers are designed in accordance with the principles and methods set out in Uisce Eireann's Code of Practice & Standard Details for Wastewater Infrastructure, IS EN 752 (2008), IS EN12056: Part 2 and Building Regulations Part H.

6 PROPOSED WATER SUPPLY

6.1 WATER SUPPLY - GENERAL

Water supply to the development will be provided through 5no. 150mm dia. connections to the Phase 1 water distribution network. These connections and capacity were allowed for in the design of the Phase 1 network.

A pre-Connection Enquiry was made to Uisce Eireann for which a Confirmation of Feasibility (CoF) was issued on Aug 26th 2025 and Statement of Design Acceptance (SoDA) on Mar 16th 2026. The CoF indicated that there is sufficient capacity in the public network for the proposed development but that the design would be reviewed in conjunction with Phases 1 & 2 at connection application stage.

6.2 WATERMAIN DESIGN & CALCULATIONS

The following criteria will be applied:

- Watermains shall be laid in non-trafficked areas to maximum possible extent.
- The location of valves, hydrants, air valves etc. in trafficked areas shall be avoided wherever practical.
- Watermains shall not pass under any structure.
- An average cover of 0.9m shall be provided in trafficked areas.
- Proper designed concrete thrust blocks shall be provided at all bends and tees located along the watermain where required.
- Marker tape, in blue PVC and incorporating a corrosion resistant tracing system and printed with the works 'WATERMAIN' throughout shall be laid directly over the centre line of the pipe, at least 300mm above the pipe. The tracer system shall be continuous and adequately secured to valves and fittings.
- No common connections shall be provided. Each dwelling shall have its own individual connection.
- All boundary boxes/meter chambers shall be in public access areas.

The water demand is designed in accordance with the principles and methods set out in Uisce Eireann's Code of Practice for Water Infrastructure Connections and Developer Services Design & Construction Requirements for Self-Lay Developments July 2020.

Overall water demand is calculated using UE CoP for Water Infrastructure section 3.7.2.

6.3 HYDRANTS

Hydrants shall comply with the requirements of BS 750:2012 and shall be installed in accordance with Uisce Eireann's Code of Practice and Standard Details & TGD Part B. Refer to AKM drawings for the watermain layout which also shows hydrant locations.

7 SITE ACCESS AND ROAD LAYOUT

7.1 EXISTING ACCESS

The site is divided into two sections north and south of Phase 1 which is currently under construction. Access is currently provided to the site via Phase 1 construction accesses.

7.2 PROPOSED VEHICULAR ACCESS

Proposed vehicle accesses to the site – all of which come via the Phase 1 road network as marked in figure 7-2 below.

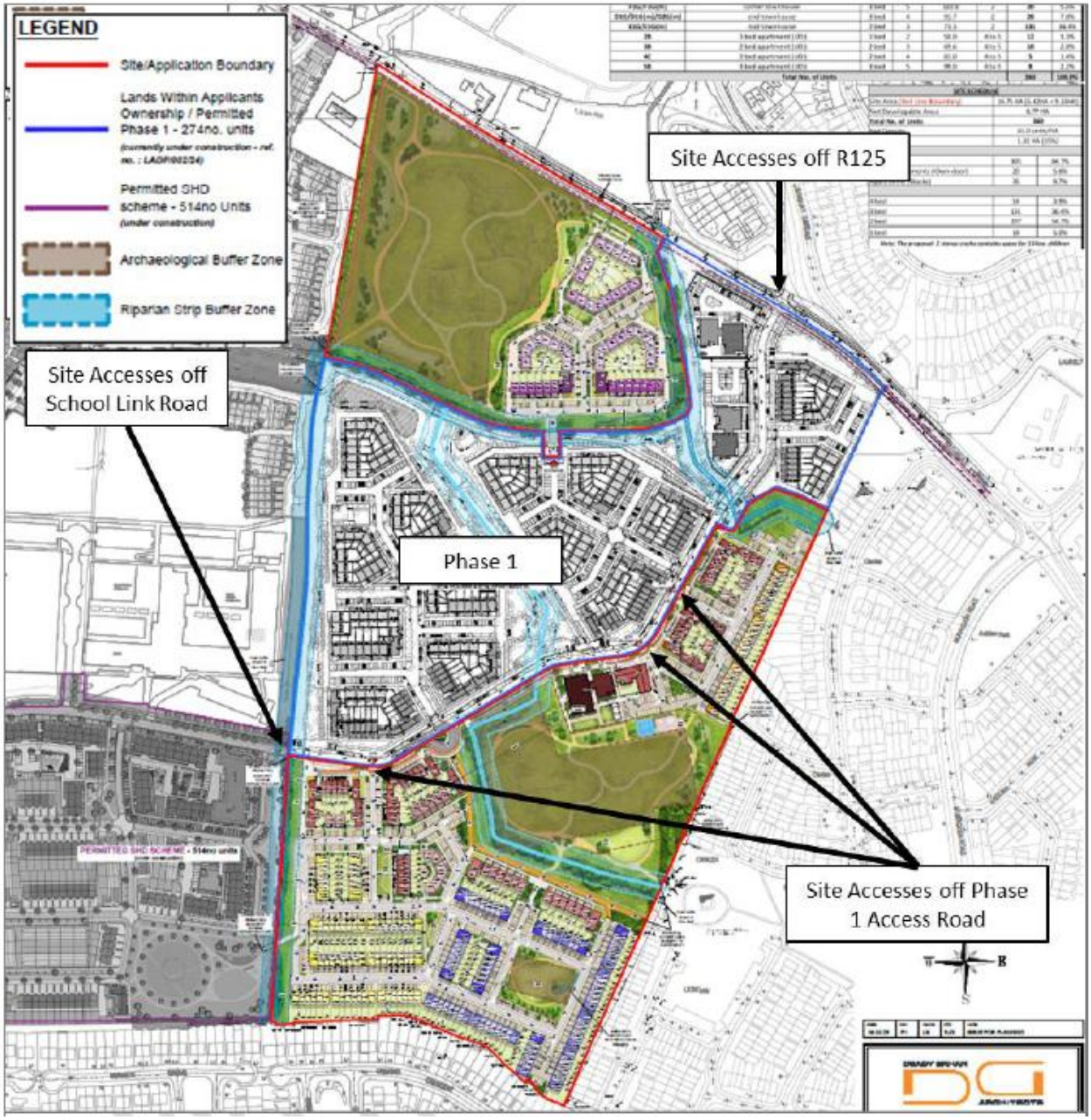

Figure 7-2. Proposed Vehicular access into the site

As per the guidelines laid out in the Design Manual for Urban Roads & Streets (DMURS) standard roads in the development will be 5.5m wide with a 2m wide footpath. Internal radii on bends will generally be 3m. Any homezones/shared spaces within the development will have a 4.8m wide trafficable area with a 1.2m wide pedestrian refuge area. The primary link road through the development will have a 6m trafficable width and road build-ups and cross sections are consistent with Fingal County Council Taking-In-Charge Policy (Refer to drawing 25051-AKM-XXXX-XX-DR-C01-510001). Traffic calming will be provided via speed ramps and junction tabletops within the development and at entrances to shared zones. A layout is proposed which manages speed by restricting the length of any straight road (Refer from 25051-AKM-XXXX-XX-DR-C01-500001 to 25051-AKM-XXXX-XX-DR-C01-500007). A separate DMURS compliance statement has been prepared. See Transport Insights Traffic and Transport Assessment included as part of this planning application documentation.

7.3 PROPOSED PEDESTRIAN AND CYCLE ACCESS

Pedestrians and cyclists will access the site at the same locations as the vehicular access introduced above with an additional access to the proposed shared path. The subject development proposals include a segregated foot/cycle and shared paths along the southern side the of Link Road currently under construction. This is consistent with proposals from Phase 1.

7.4 SITE PERMEABILITY

In addition to the primary access points, the internal layout is designed to provide a high level of permeability. This is achieved by providing frequent connections and avoiding cul-de-sacs for pedestrians and cyclists. The internal network provides direct routing options, linking the residential units to the proposed greenway, public open spaces, link road, and the adjacent Phase 1 development. This layout ensures physical integration with the wider external infrastructure networks in accordance with DMURS principles.

7.5 SWEPT PATH ANALYSIS

The internal streets for the subject site have been designed as per the recommendations of DMURS in including internal road dimensions, longitudinal slopes and corner radii. The proposed whole development was designed to accommodate all types of anticipated vehicles which include cars, refuse vehicles and fire tender vehicles. (Refer to drawing 25051-AKM-XXXX-XX-DR-C01-510001)

A swept path analysis has been carried out on the proposed road layout to demonstrate that the site's proposed corner radii and turning heads will accommodate everyday vehicles such as cars. Other vehicles such as refuse trucks and fire tender have also been tracked to ensure they can turn and manoeuvre around the development.

7.6 PROPOSED PARKING

Car parking has been provided as a mixture between in-curtilage and on-street housing units with additional on-street parking to be provided for duplex/maisonette units and visitor parking provided in strategic locations throughout the site.

8 FLOOD RISK ASSESSMENT

8.1 INTRODUCTION

This Flood Risk Assessment has been carried out in accordance with the DEHLG/OPW Guidelines on the Planning Process and Flood Risk Management published in November 2009. This assessment identifies the risk of flooding at the site from various sources and sets out possible mitigation measures against the potential risks of flooding. Sources of possible flooding include coastal, fluvial, pluvial (direct heavy rain), groundwater and drainage system failure. This section provides an assessment of the subject site for flood risk purposes only.

8.2 SITE BACKGROUND

The subject site is a greenfield site and divided into 2no. cells which bound the northern and southern boundaries of the previous phase of the development which is currently under construction. Figure 8.1 outlines the development site and how the local drainage network connects to the River Broadmeadow and its tributaries.

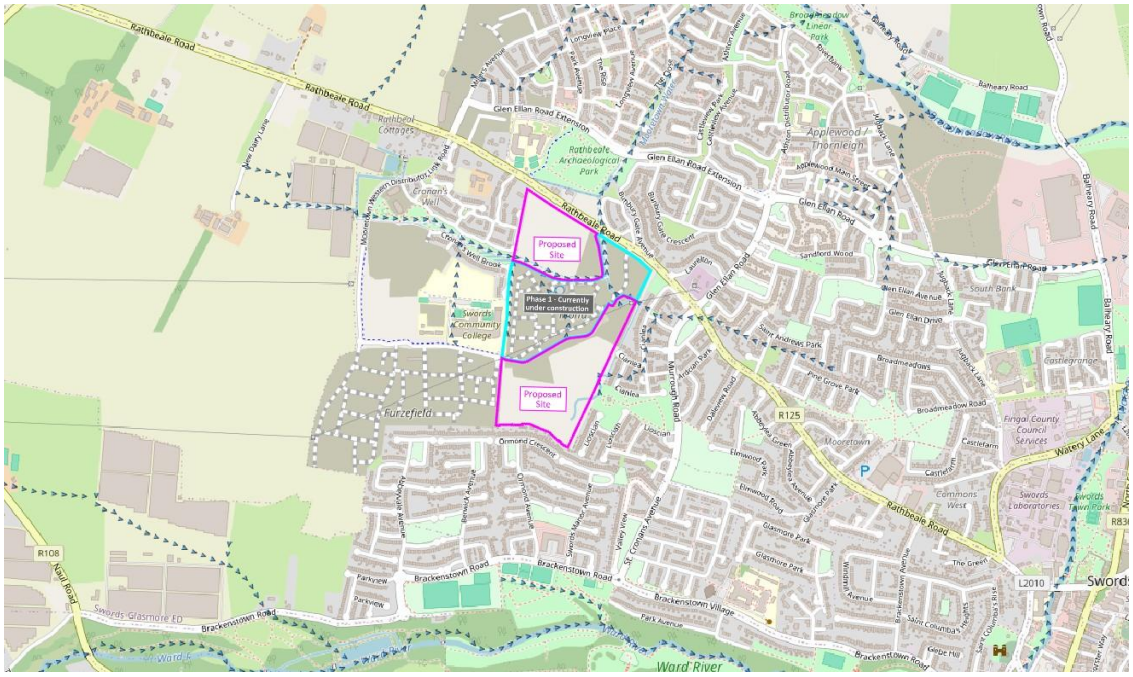

Figure 8-1. Site Location and Nearby Watercourses [Source: EPA]

8.3 TOPOGRAPHY

Topographic survey data shows that the site is steeply graded and generally falls from highpoints of 40m in the south-west to low points of 24m to the north. The existing drainage ditches form isolated low points within the site.

8.4 WATERCOURSES

The existing site is divided by existing Mill Stream and drainage ditches which flow from the east and west into the site before combining within Phase 1 to flow north under Rathbeale Road and through Rathbeale Archaeological Park to discharge into the Broadmeadow River. The existing drainage ditches form isolated low points within the site. Infiltration characteristics are poor throughout the site.

8.5 FLOOD HISTORY

The historical flooding history for the already approved entire site was obtained from national flood hazard mapping website, www.floodmaps.ie, which highlights areas at risk of flooding through the collection of recorded data and observed flood events. See Figure 8-2 for historic flood events in the area. It can be seen that none have occurred within the immediate vicinity of the subject site.

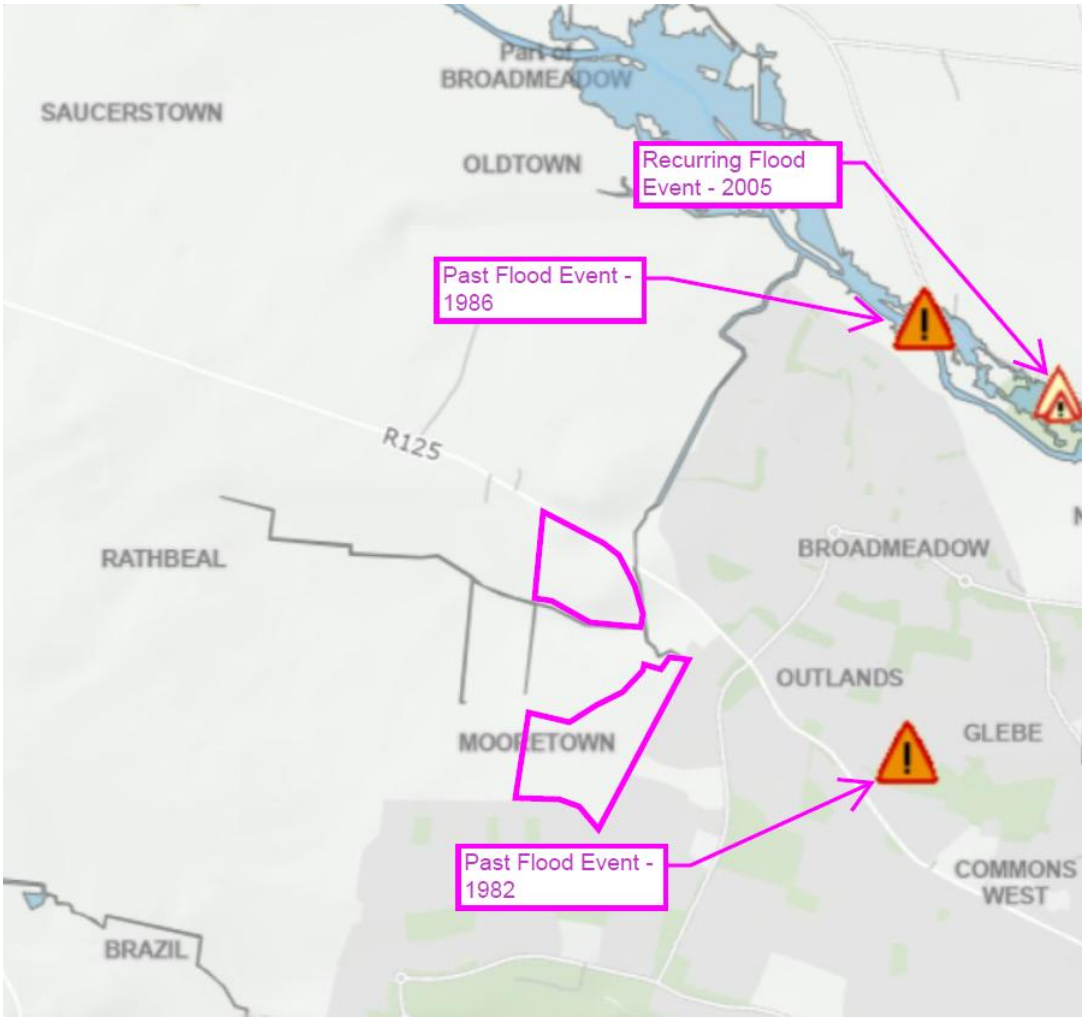

Figure 8-2. Historical Flooding [Source: Floodinfo.ie]

8.6 PREDICTIVE FLOODING

The site has been subject to review under the following predictive flood mapping / modelling studies:

- CFRAM Predictive Flood Maps – Present-Day Scenario
  - See extract in Figure 8.3 below and the full map is attached as an appendix to this report.
- CFRAM Coastal Flood Extents – High-End Future Scenario:
  - Low Probability flood events have an indicative 1-in-a-1000 chance of occurring or being exceeded in any given year. This is also referred to as an Annual Exceedance Probability (AEP) of 0.1%.
  - The High-End Future Scenario extents were generated taking in in the potential effects of climate change using an increase in rainfall of 30% and sea level rise of 1,000 mm (40 inches)
- CFRAM River Flood Extents – High-End Future Scenario:

- Low Probability flood events have an indicative 1-in-a-1000 chance of occurring or being exceeded in any given year. This is also referred to as an Annual Exceedance Probability (AEP) of 0.1%.
- The High-End Future Scenario extents where generated taking in in the potential effects of climate change using an increase in rainfall of 30% and sea level rise of 1,000 mm (40 inches)

The results from the CFRAM analysis are depicted in the CFRAM Flood Maps in Figures 8-3 & 8-4 below. It can be seen that the subject site is not at risk from fluvial or coastal flooding under the high-end future flood scenario.

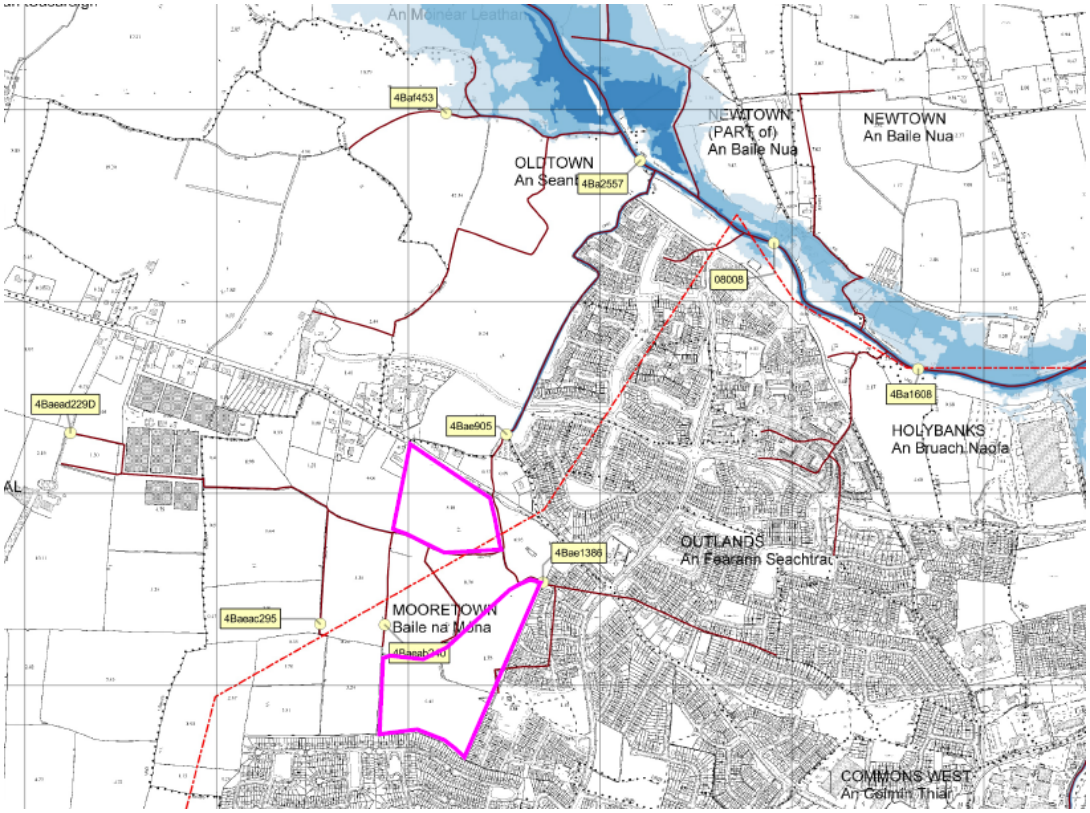

Figure 8-3. CFRAM Present Day Floodzone Mapping – [Source: floodinfo.ie]

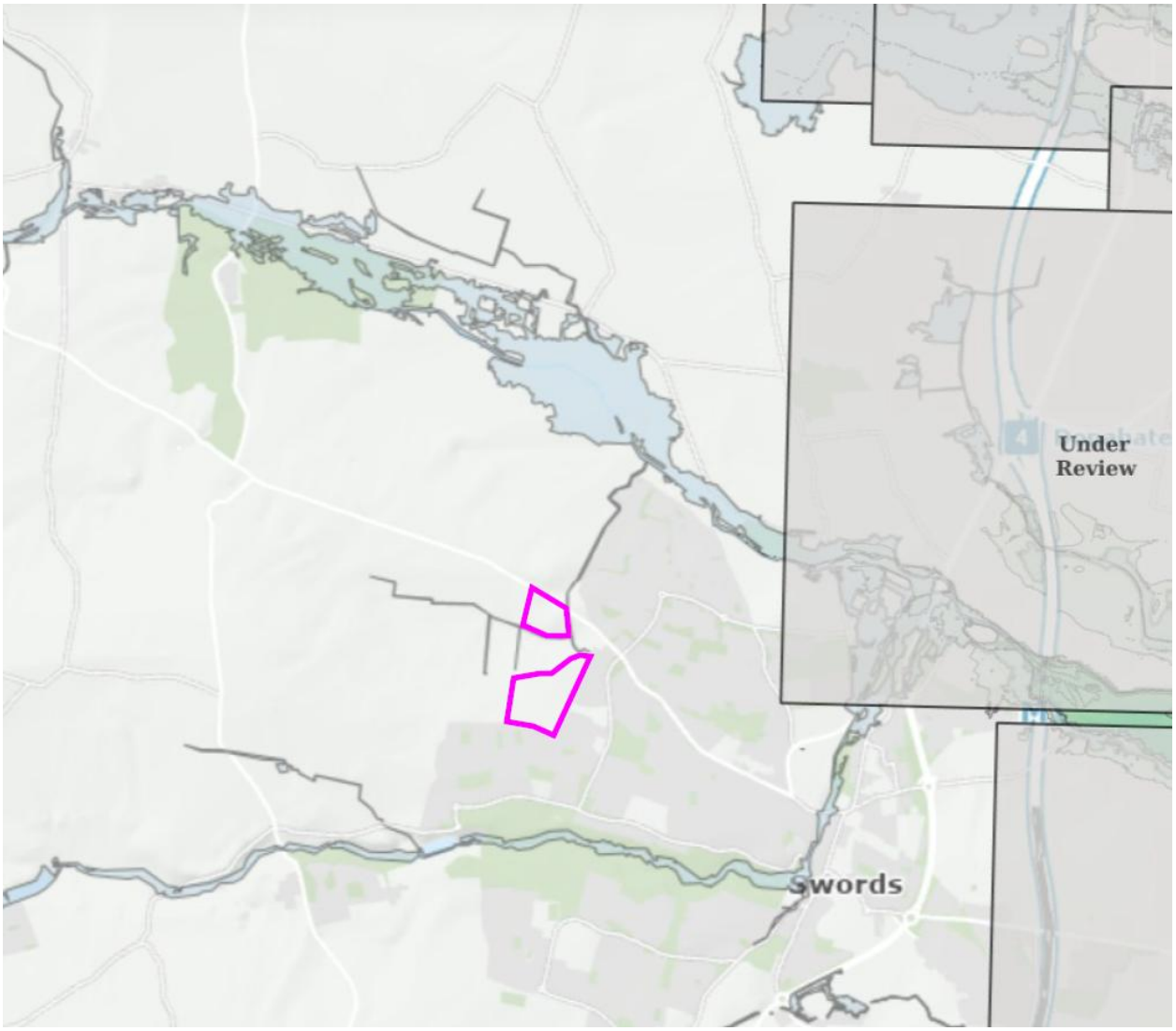

Figure 8.4 – CFRAM Flood Mapping – High-End Future Scenario – Coastal & River Flooding

8.7 CONCLUSION

The subject lands have been analysed for risks from flooding from the Irish Sea, fluvial flooding, pluvial flooding and ground water. Whilst residential developments are considered highly vulnerable to flooding it has been determined that the residual flood risk from any source is low.

Signed:

Cathal Kennedy BA, BAI, MSc, CEng, MIEI
AKM Consulting Engineers

APPENDIX A – TOPOGRAPHICAL SURVEY

SCALE 1:1250

APPENDIX B – GROUND INVESTIGATION REPORT

S.I. Ltd Contract No: 6269

Client:	Fingal County Council
Engineer:	Waterman Moylan
Contractor:	Site Investigations Ltd

Mooretown – Phase 2,
Swords, Co. Dublin
Site Investigation Report

Prepared by:

.....

Stephen Letch

Issue Date:	26/07/2024
Status	Final
Revision	0

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Appendices:

1. Cable Percussive Borehole Logs
2. Trial Pit Logs with Dynamic Probe Results and Photographs
3. Soakaway Test Results and Photographs
4. California Bearing Ratio Test Results
5. Geotechnical Laboratory Test Results
6. Environmental Laboratory Test Results
7. Waste Classification Report
8. Survey Data

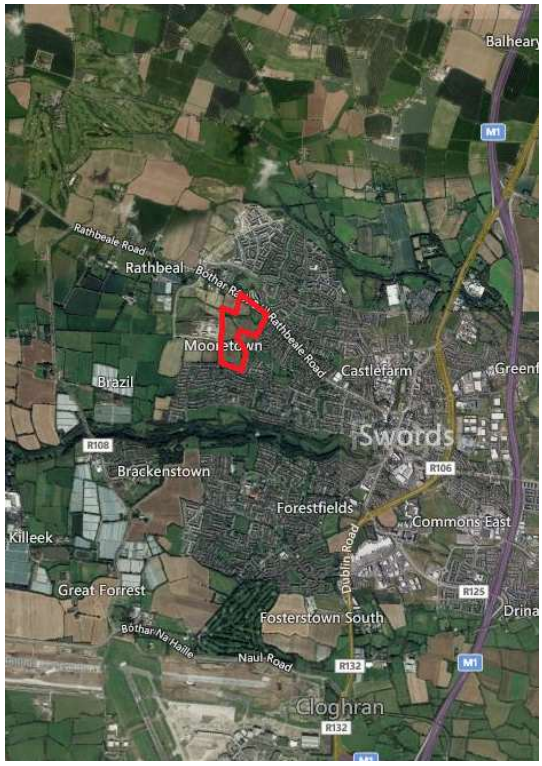
1. Introduction

On the instructions of Waterman Moylan, Site Investigations Ltd (SIL) was appointed to complete a ground investigation for a residential development at Mooretown, Swords, Co. Dublin. The investigation was for a residential development on the site and was completed on behalf of the Client, Fingal County Council. This investigation was completed in April 2024.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

The site is located to the west of Swords town centre in north Co. Dublin. The first map below shows the location of Swords and Mooretown to the north of the city centre and the second map shows the location of the site to the west of the town centre.



3. Fieldwork

All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design. The fieldworks comprised of the following:

- 10 No. cable percussive boreholes
- 189 No. trial pits with dynamic probes
- 12 No. soakaway tests
- 86 No. California Bearing Ratio Tests

3.1. Cable Percussive Boreholes

Cable percussion boring was undertaken at 10 No. locations using a Dando 150 rig and constructed 200mm diameter boreholes. The boreholes terminated at depths ranging from 6.70mbgl (BH01 and BH06) to 8.80mbgl (BH08). It was not possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 1.00mbgl where N=18-(1,2/3,5,5,5)). Where refusal of 50 blows across the test zone was encountered was achieved during testing, the penetration depth is also reported (e.g., BH01 at 6.00mbgl where N=50-(5,8/50 for 285mm)).

The logs are presented in Appendix 1.

3.2. Trial Pits with Dynamic Probes

189 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated, which were returned to the laboratory for geotechnical testing.

Adjacent to the trial pits, dynamic probes were completed using a track mounted Competitor 130 machine. The testing complies with the requirements of BS1377: Part 9 (1990) and Eurocode 7: Part 3. The configuration utilised standard DPH (Heavy) probing method comprising a 50kg weight, 500mm drop height and a 50mm diameter (90°) cone. The number of blows required to drive the cone each 100mm increment into the sub soil is recorded in accordance with the standards. The dynamic probe provides no information regarding soil type or groundwater conditions.

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by Foirbart that is most relevant to Irish soil conditions and within this paper the following equations were included:

Granular Soils: DPH N_{100} x 2.5 = SPT N value

Cohesive Soils: C_u = 15 x DPH N_{100} + 30 kN/m^2

These equations present a relationship between the probe N_{100} value and the SPT N value for granular soils and the undrained shear strength of cohesive soils.

The trial pit logs with the dynamic probe results are presented in Appendix 2 along with the photographs.

3.3. Soakaway Tests

At 12 No. locations, soakaway tests were completed and logged by SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The soakaway test results and photographs are presented in Appendix 3.

3.4. California Bearing Ratio Tests

At 86 No. locations, undisturbed cylindrical mould samples were recovered to complete California Bearing Ratio tests in the laboratory. The results facilitate the designing of the access roads and can also be used for slab foundations for the playing courts. The tests are completed to BS1377: 1990: Part 4, Clause 7 ‘Determination of California Bearing Ratio’.

The CBR test results are presented in Appendix 4.

3.5. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log and along with a site plan in Appendix 8.

4. Laboratory Testing

Geotechnical laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing included:

- 6 No. Moisture contents
- 6 No. Atterberg limits
- 6 No. Particle size gradings
- 6 No. pH, sulphate and chloride content

Environmental testing was completed by ALS Environmental Ltd. and this allows for a Waste Classification report to be produced. The environmental testing consists of the following:

- 6 No. Suite I analysis
- 6 No. loss on ignition tests

The geotechnical laboratory test results are presented in Appendix 5 with the environmental test results and Waste Classification report presented in Appendix 6 and 7 respectively.

5. Ground Conditions

5.1. MADE GROUND

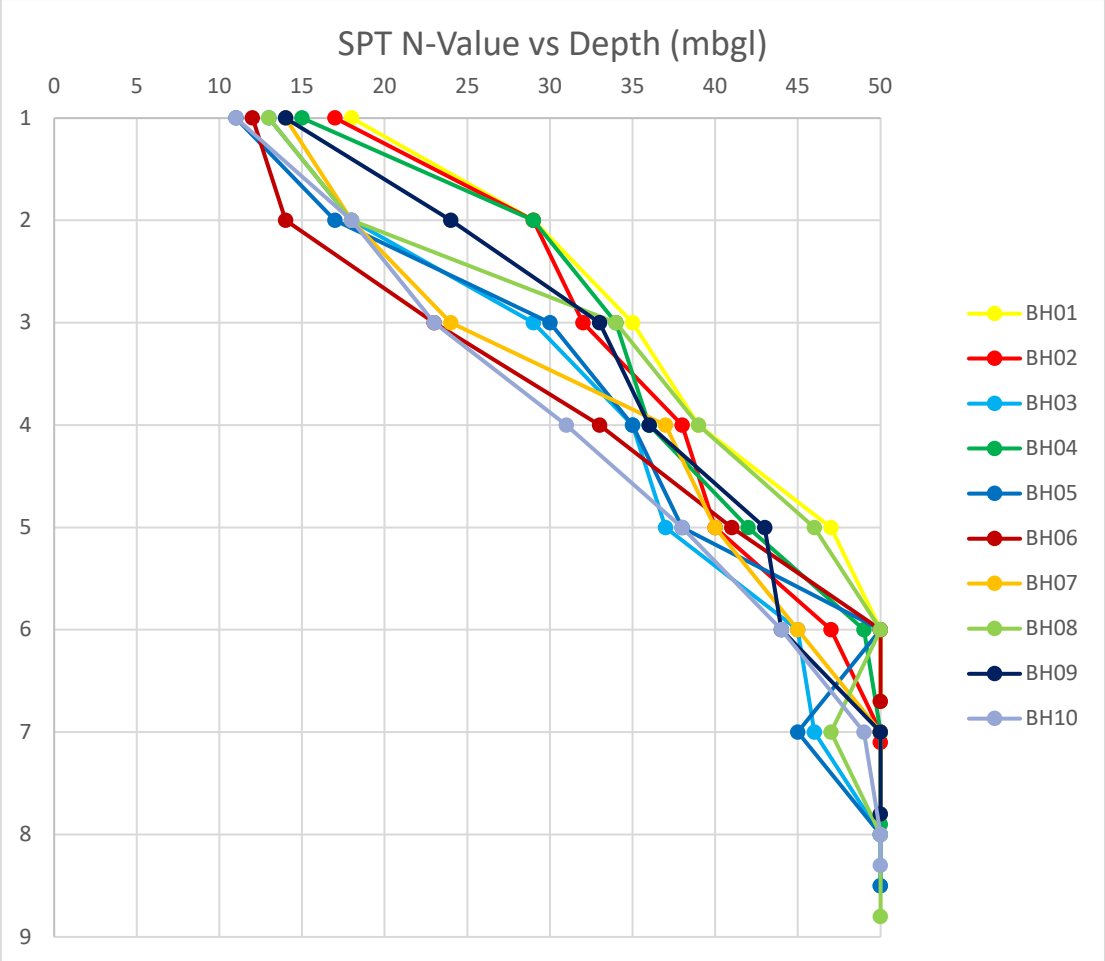
MADE GROUND was recorded at 4 No. trial pits, TP004, TP017, TP022 and 029, generally to 0.70mbgl or less but did extend to 1.80mbgl at TP004. The material was logged as grey brown and dark grey slightly sandy slightly gravelly silty clay with cobbles and anthropogenic material of timber, red brick, plastic, rag, concrete brick and scrap metal fragments recorded.

5.2. Overburden

The natural ground conditions are consistent with cohesive soils encountered across the site. This includes brown and brown grey overlying black slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content soils. These ground conditions are encountered across the north Co. Dublin region with the brown soils firm in strength and the black soils stiff becoming very stiff.

The SPT N-values ranging from 11 to 18 at 1.00mbgl and then increasing to 14 to 29 at 2.00mbgl, with the higher values in the black soils, and the values continue to increase to 23 to 35 at 3.00mbgl. The graph overleaf shows the SPT N-values vs depth.

Laboratory tests of the shallow cohesive soils confirm that CLAY soils dominate the site with low to intermediate plasticity indexes of 14% to 16% recorded. The particle size distribution curves were poorly sorted straight-line curves with 41% to 45% fines content.



5.3. Groundwater

Groundwater details in the boreholes and trial pits during the fieldworks are noted on the logs in Appendix 1 and 2. Groundwater ingresses were recorded in all the boreholes, at depths ranging from 2.50mbgl (BH10) to 3.50mbgl (BH09). 46 No. trial pits also recorded groundwater ingresses from 0.40mbgl to 2.60mbgl with ingress rates recorded as seepages to rapid ingresses.

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Shallow Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

The boreholes encountered firm brown slightly sandy slightly gravelly silty CLAY at 1.00mbgl and the SPT N-values at these depths range from 11 to 18.

Using a correlation proposed by Stroud and Butler between SPT N-values and plasticity indices, the SPT N-value can be used to calculate the undrained shear strength. With the low to intermediate plasticity indexes recorded in the laboratory for the soils encountered on site, this correlation is C_u=6N. Therefore, using the lower value of 11, this indicates that the undrained shear strength of the CLAY is 66kN/m^2. This can be used to calculate the ultimate bearing capacity, and this has been calculated to be 355kN/m^2. Finally, a factor of safety is applied and with a factor of 3, an allowable bearing capacity of 120kN/m^2 would be anticipated using the lower SPT values.

As previously stated in Section 5.2., these soils are common across north Co. Dublin and the allowable bearing capacities for these soils are often increased to 150kN/m^2 for the brown CLAY and 250kN/m^2 to 300kN/m^2 for the deeper black CLAY.

For analysis of bearing capacities from the dynamic probes, the N_{100} values are used as follows in cohesive soils. The undrained shear strength (C_u) is calculated using the N_{100} value as per the equation in Section 3.1. This can then be used in calculations to work out the ultimate bearing capacity (ULS) and when a factor of safety of 3 is applied, the allowable bearing capacity (ABC) can be provided.

The table overleaf shows the allowable bearing capacities for N_{100} values 1 to 10 at 1.00mbgl and these can be used provide the allowable bearing capacity at each probe location.

N_{100} Value	Cohesive Soils		
	C_u	ULS	ABC
1	45	245	82
2	60	324	110
3	75	400	135
4	90	480	160
5	105	555	185
6	120	630	210
7	135	705	235
8	150	780	260
9	165	855	285
10	180	930	310

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- Foundations are to be constructed on a level formation of uniform material type.
- All man-made or filled material is to be removed prior to construction.
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m^3.
- Based on groundwater observations this analysis assumes the groundwater will not influence the construction or performance of these foundations.
- All bearing capacity calculations allow for 25mm settlement.

The trial pit walls generally remained stable during excavation but four locations did record some instability and therefore, it would be recommended that all excavations should be checked immediately and regular inspection of temporary excavations should be completed during construction to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:
There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall, nearby construction and tides.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, groundwater was recorded in all the boreholes and 46 No. trial pits during the fieldworks. There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress (less than 2.00mbgl) into excavations of the CLAY will be slow to medium. If granular lenses are encountered in shallow excavations, then the possibility of water ingressing into an excavation increase with a higher ingress rate.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Soakaway Test

The soakaway tests failed the specification as the water level did not fall sufficiently enough to complete the test. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The tests were terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation. The unsuitability of the soils for soakaways is further suggested by the soil descriptions of the materials in this area of the site where the soakaway was completed, i.e., well compacted clay soils.

6.4. Pavement Design

The CBR test results in Appendix 4 vary from 0.5% to 6.3%. Overall 15 No. samples were 1.8% or below, 38 No. samples ranged from 2.0% to 3.9%, with the remaining 33 No. samples at 4.0% to 6.3%.

Inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.5. Contamination

Environmental testing was completed on six samples from the investigation and the results are provided in Appendix 6. For material to be removed from site, Suite I testing was carried out to determine if the material is hazardous or non-hazardous and then the leachate results were compared with the published waste acceptance limits of BS EN 12457-2 to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill.

The Waste Classification report created using HazWasteOnline™ software shows that the material tested can be classified as non-hazardous material.

Following this analysis of the solid test results, the leachate disposal suite results showed that the determinands remained within the Inert waste thresholds.

Six samples were tested for analysis but it cannot be discounted that any localised contamination may have been missed. Any MADE GROUND excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils. Additional testing of these soils may be requested by the individual landfill before acceptance and a testing regime designed by an environmental engineer would be recommended to satisfy the landfill.

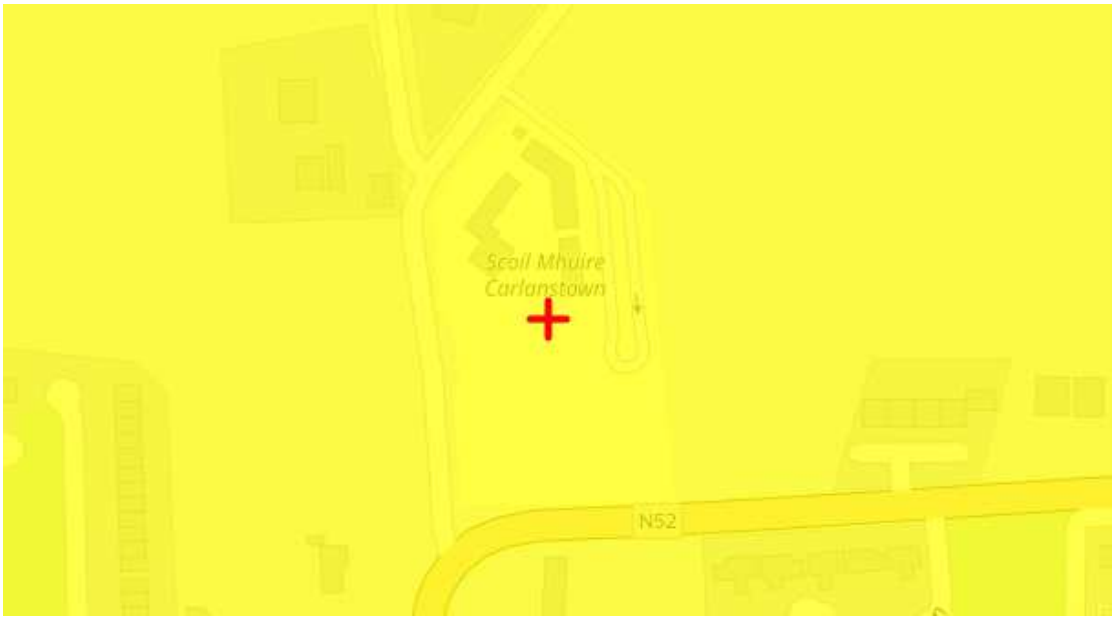
6.6. Aggressive Ground Conditions

The chemical test results in Appendix 5 indicate a general pH value between 8.07 and 8.99, which is close to neutral and below the level of 9, therefore no special precautions are required.

The maximum value obtained for water soluble sulphate was 124mg/l as SO_3. The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground'* guidelines require SO_4 values and after conversion ($SO_4 = SO_3 \times 1.2$), the maximum value of 149mg/l shows Class 1 conditions and no special precautions are required.

6.7. Radon Gas

The Environmental Protection Agency (EPA) has recently updated the Radon gas exposure map and this is available to view on the EPA website. This shows the possible exposure to radon gas with the bedrock geology, subsoil geology, soil permeability and aquifer type analysed to produce the map. The map overleaf shows that the site falls within the lower level of possible radon exposure. Measures should be taken in the form of radon protection barriers to protect from radon exposure in the new structure.



EPA map identifying possible Radon exposure.

https://gis.epa.ie/EPAMaps/Radon?&lid=EPA:RadonRiskMapofIreland

Appendix 1

Cable Percussive Borehole Logs

Contract No: 6269	**Cable Percussion Borehole Log**	Borehole No: **BH01**

Contract:	Mooretown	Easting:	716572.033	Date Started:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747920.327	Date Completed:	12/04/2024
Client:	Fingal County Council	Elevation:	29.45	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.30	TOPSOIL.		29.0	29.15					
		Brown sandy slightly gravelly silty CLAY.								
1.0	0.80	Stiff brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.		28.5	28.65	1.00 1.00	B C	JOT67 N=18 (1,2/3,5,5,5)		
1.5				28.0						
2.0	1.70	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		27.5	27.75	2.00 2.00	B C	JOT68 N=29 (3,5/7,7,8,7)		
2.5				27.0						
3.0				26.5		3.00 3.00	B C	JOT69 N=35 (4,6/8,9,9,9)		
3.5				26.0						
4.0				25.5		4.00 4.00	B C	JOT70 N=39 (3,5/9,9,10,11)		
4.5				25.0						
5.0				24.5		5.00 5.00	B C	JOT71 N=47 (4,7/10,12,12,13)		
5.5				24.0						
6.0				23.5		6.00 6.00	B C	JOT72 N=50 (5,8/50 for 285mm)		
6.5	6.60 6.70	Obstruction - possible boulders. End of Borehole at 6.70m		23.0 22.5	22.85 22.75	6.70	C	50 (25 for 5mm/50 for 0mm)		
7.0										
7.5				22.0						
8.0				21.5						
8.5				21.0						
9.0				20.5						
9.5				20.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
6.60	6.70	01:30	3.20	2.70	NS	12/04	6.70	6.00				0.00	6.70	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH02**
Contract:	Mooretown	Easting:	716766.900	Date Started:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747885.312	Date Completed:	11/04/2024
Client:	Fingal County Council	Elevation:	27.55	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.30	TOPSOIL.		27.0	27.25					
	0.70	Brown sandy slightly gravelly silty CLAY.			26.85					
1.0		Stiff brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.		26.5		1.00 1.00	B C	JOT60 N=17 (2,2/3,4,5,5)		
1.5				26.0						
2.0	1.80	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		25.5	25.75	2.00 2.00	B C	JOT61 N=29 (3,3/6,8,8,7)		
2.5				25.0						
3.0				24.5		3.00 3.00	B C	JOT62 N=32 (3,5/7,7,9,9)		
3.5				24.0						
4.0				23.5		4.00 4.00	B C	JOT63 N=38 (4,6/7,10,10,11)		
4.5				23.0						
5.0				22.5		5.00 5.00	B C	JOT64 N=40 (5,6/8,11,10,11)		
5.5				22.0						
6.0				21.5		6.00 6.00	B C	JOT65 N=47 (4,7/10,12,12,13)		
6.5				21.0						
7.0	7.00 7.10	Obstruction - possible boulders. End of Borehole at 7.10m		20.5	20.55 20.45	7.00 7.00 7.10	B C C	JOT66 50 (25 for 25mm/50 for 35mm) 50 (25 for 5mm/50 for 0mm)		
7.5				20.0						
8.0				19.5						
8.5				19.0						
9.0				18.5						
9.5				18.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.00	7.10	01:30	2.80	2.50	NS	11/04	7.10	5.00				0.00	7.10	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**	Borehole No: **BH03**

Contract:	Mooretown	Easting:	716427.898	Date Started:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747812.310	Date Completed:	08/04/2024
Client:	Fingal County Council	Elevation:	29.70	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.20	TOPSOIL.		29.5	29.50					
		Brown sandy slightly gravelly silty CLAY.								
1.0	0.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.		29.0	28.90	1.00	B	JOT39		
1.5				28.5		1.00	C	N=13 (2,2/3,3,3,4)		
2.0	2.00	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		28.0	27.70	2.00	B	JOT40		
2.5				27.5		2.00	C	N=18 (2,2/4,5,4,5)		
3.0				27.0		3.00	B	JOT41		
3.5				26.5		3.00	C	N=29 (3,7/7,8,7,7)		
4.0				26.0		4.00	B	JOT42		
4.5				25.5		4.00	C	N=35 (4,8/8,9,9,9)		
5.0				25.0		5.00	B	JOT43		
5.5				24.5		5.00	C	N=37 (4,7/9,9,10,9)		
6.0				24.0		6.00	B	JOT44		
6.5				23.5		6.00	C	N=45 (5,10/10,11,12,12)		
7.0				23.0		7.00	B	JOT45		
7.5				22.5		7.00	C	N=46 (7,8/9,10,12,15)		
8.0				22.0		8.00	B	JOT46		
				21.5		8.00	C	50 (10,12/50 for 180mm)		
8.5	8.40	Obstruction - possible boulders.			21.30					
	8.50	End of Borehole at 8.50m			21.20	8.50	C	50 (25 for 5mm/50 for 0mm)		
9.0				21.0						
9.5				20.5						
				20.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
8.40	8.50	01:30	3.00	2.70	NS	08/04	8.50	5.00				0.00	8.50	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH04**
Contract:	Mooretown	Easting:	716609.677	Date Started:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747778.691	Date Completed:	09/04/2024
Client:	Fingal County Council	Elevation:	29.28	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
		TOPSOIL.								
	0.30	Brown sandy slightly gravelly silty CLAY.			28.98					
	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.			28.38	1.00 1.00	B C	JOT47 N=15 (1,2/4,3,4,4)		
	1.70	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.			27.58	2.00 2.00	B C	JOT48 N=29 (2,4/7,7,7,8)		
						3.00 3.00	B C	JOT49 N=34 (3,4/9,8,8,9)		
						4.00 4.00	B C	JOT50 N=36 (3,5/8,9,9,10)		
						5.00 5.00	B C	JOT51 N=42 (4,7/10,10,11,11)		
						6.00 6.00	B C	JOT52 N=49 (5,8/12,12,13,12)		
						7.00 7.00	B C	JOT53 N=50 (5,7/50 for 260mm)		
	7.80 7.90	Obstruction - possible boulders. End of Borehole at 7.90m			21.48 21.38	7.90	C	50 (25 for 5mm/50 for 0mm)		

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.80	7.90	01:30	3.00	2.70	NS	09/04	7.90	6.00				0.00	7.90	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH05**
Contract:	Mooretown	Easting:	716495.907	Date Started:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747705.068	Date Completed:	05/04/2024
Client:	Fingal County Council	Elevation:	31.64	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.20	TOPSOIL.		31.5	31.44					
0.5		Brown sandy slightly gravelly silty CLAY.		31.0						
1.0	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.			30.74	1.00 1.00	B C	JOT31 N=11 (1,2/2,2,3,4)		
1.5				30.5						
2.0	1.90	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		30.0	29.74	2.00 2.00	B C	JOT32 N=17 (2,3/4,4,4,5)		
2.5				29.5						
3.0				29.0		3.00 3.00	B C	JOT33 N=30 (3,4/7,7,8,8)	▼	
3.5				28.5					▽	
4.0				28.0		4.00 4.00	B C	JOT34 N=35 (3,5/8,9,9,9)		
4.5				27.5						
5.0				27.0		5.00 5.00	B C	JOT35 N=38 (5,7/9,9,10,10)		
5.5				26.5						
6.0				26.0		6.00 6.00	B C	JOT36 N=50 (5,8/50 for 275mm)		
6.5				25.5						
7.0				25.0		7.00 7.00	B C	JOT37 N=45 (4,7/10,11,11,13)		
7.5				24.5						
8.0				24.0		8.00 8.00	B C	JOT38 50 (8,10/50 for 175mm)		
8.5	8.40 8.50	Obstruction - possible boulders. End of Borehole at 8.50m		23.5 23.0	23.24 23.14	8.50	C	50 (25 for 5mm/50 for 5mm)		
9.0				22.5						
9.5				22.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
8.40	8.50	01:30	3.30	3.00	NS	05/04	8.50	5.80				0.00	8.50	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH06**
Contract:	Mooretown	Easting:	716714.708	Date Started:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747672.505	Date Completed:	10/04/2024
Client:	Fingal County Council	Elevation:	29.25	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.20	TOPSOIL.		29.0	29.05					
		Brown sandy slightly gravelly silty CLAY.		28.5						
	1.00	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.		28.0	28.25	1.00 1.00	B C	JOT54 N=12 (2,2/2,3,3,4)		
				27.5		2.00 2.00	B C	JOT55 N=14 (3,3/4,3,3,4)		
	3.00	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		27.0 26.5 26.0	26.25	3.00 3.00	B C	JOT56 N=23 (3,4/6,5,6,6)		
				25.5		4.00 4.00	B C	JOT57 N=33 (5,8/9,8,8,8)		
				25.0 24.5 24.0		5.00 5.00	B C	JOT58 N=41 (6,10/10,11,10,10)		
				23.5		6.00 6.00	B C	JOT59 N=50 (5,10/50 for 290mm)		
	6.60 6.70	Obstruction - possible boulders. End of Borehole at 6.70m		23.0 22.5 22.0	22.65 22.55	6.70	C	50 (25 for 5mm/50 for 5mm)		
				21.5 21.0 20.5 20.0 19.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
6.60	6.70	01:30	3.40	2.90	NS	10/04	6.70	5.00				0.00	6.70	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH07**
Contract:	Mooretown	Easting:	716451.230	Date Started:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747542.916	Date Completed:	04/04/2024
Client:	Fingal County Council	Elevation:	35.52	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
		TOPSOIL.			35.22					
	0.30	Brown sandy slightly gravelly silty CLAY.		35.0						
0.5	0.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.			34.82					
1.0				34.5		1.00	B	JOT24		
						1.00	C	N=14 (2,2/3,4,3,4)		
1.5				34.0						
	1.70	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.			33.82					
2.0				33.5		2.00	B	JOT25		
						2.00	C	N=18 (2,3/4,4,5,5)		
2.5				33.0						
3.0				32.5		3.00	B	JOT26		
						3.00	C	N=24 (3,5/5,6,7,6)		
3.5				32.0						
4.0				31.5		4.00	B	JOT27		
						4.00	C	N=37 (4,6/8,8,10,11)		
4.5				31.0						
5.0				30.5		5.00	B	JOT28		
						5.00	C	N=40 (4,7/9,9,11,11)		
5.5				30.0						
6.0				29.5		6.00	B	JOT29		
						6.00	C	N=45 (5,9/11,11,11,12)		
6.5				29.0						
7.0				28.5		7.00	B	JOT30		
						7.00	C	N=50 (9,10/50 for 285mm)		
7.5				28.0						
	7.70	Obstruction - possible boulders.			27.82					
	7.80	End of Borehole at 7.80m		27.5	27.72	7.80	C	50 (25 for 5mm/50 for 5mm)		
8.0										
8.5				27.0						
9.0				26.5						
9.5				26.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.70	7.80	01:30	3.10	2.80	NS	04/04	7.80	5.70				0.00	7.80	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH08**
Contract:	Mooretown	Easting:	716591.844	Date Started:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747491.784	Date Completed:	02/04/2024
Client:	Fingal County Council	Elevation:	35.23	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
	0.30	TOPSOIL.		35.0	34.93					
0.5		Brown sandy slightly gravelly silty CLAY.		34.5	34.43					
	0.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.				1.00	B	JOT09		
1.0				34.0		1.00	C	N=13 (2,2/3,3,3,4)		
1.5				33.5	33.43					
	1.80	Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.				2.00	B	JOT10		
2.0				33.0		2.00	C	N=18 (2,4/5,4,4,5)		
2.5				32.5						
3.0						3.00	B	JOT11	▼	
				32.0		3.00	C	N=34 (4,7/8,8,9,9)	▽	
3.5				31.5						
4.0						4.00	B	JOT12		
				31.0		4.00	C	N=39 (4,6/9,10,10,10)		
4.5				30.5						
5.0						5.00	B	JOT13		
				30.0		5.00	C	N=46 (5,7/10,11,13,12)		
5.5				29.5						
6.0						6.00	B	JOT14		
				29.0		6.00	C	N=50 (5,6/12,13,12,13)		
6.5				28.5						
7.0						7.00	B	JOT15		
				28.0		7.00	C	N=47 (5,9/10,12,12,13)		
7.5				27.5						
8.0						8.00	B	JOT16		
				27.0		8.00	C	N=50 (7,8/50 for 255mm)		
8.5										
	8.70	Obstruction - possible boulders.		26.5	26.53					
9.0	8.80	End of Borehole at 8.80m			26.43	8.80	C	50 (25 for 5mm/50 for 0mm)		
9.5				26.0						
				25.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
8.70	8.80	01:30	3.20	3.00	NS	02/04	8.80	5.00				0.00	8.80	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**	Borehole No: **BH09**

Contract:	Mooretown	Easting:	716381.869	Date Started:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747404.358	Date Completed:	03/04/2024
Client:	Fingal County Council	Elevation:	38.82	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
0.5	0.30	TOPSOIL.		38.5	38.52					
	0.70	Brown sandy slightly gravelly silty CLAY.		38.0	38.12					
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.				1.00 1.00	B C	JOT17 N=14 (2,2/3,3,4,4)		
1.5				37.5						
2.0				37.0		2.00	B	JOT18		
	2.20				36.62	2.00	C	N=24 (3,4/5,5,7,7)		
2.5		Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.		36.5						
3.0				36.0		3.00 3.00	B C	JOT19 N=33 (4,4/8,7,9,9)		
3.5				35.5						
4.0				35.0		4.00 4.00	B C	JOT20 N=36 (5,4/7,9,10,10)		
4.5				34.5						
5.0				34.0		5.00 5.00	B C	JOT21 N=43 (5,5/10,10,11,12)		
5.5				33.5						
6.0				33.0		6.00 6.00	B C	JOT22 N=44 (7,7/9,11,12,12)		
6.5				32.5						
7.0				32.0		7.00 7.00	B C	JOT23 50 (9,11/50 for 210mm)		
7.5				31.5						
	7.70				31.12					
8.0	7.80	Obstruction - possible boulders. End of Borehole at 7.80m		31.0	31.02	7.80	C	50 (25 for 5mm/50 for 0mm)		
8.5				30.5						
9.0				30.0						
9.5				29.5						
				29.0						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
7.70	7.80	01:30	3.50	3.10	NS	03/04	7.80	5.70				0.00	7.80	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Contract No: 6269	**Cable Percussion Borehole Log**				Borehole No: **BH10**
Contract:	Mooretown	Easting:	716579.641	Date Started:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747349.702	Date Completed:	28/03/2024
Client:	Fingal County Council	Elevation:	37.95	Drilled By:	J. O'Toole
Engineer:	Waterman Moylan	Borehole Diameter:	200mm	Status:	FINAL

Depth (m) Scale	Depth	Stratum Description	Legend	Level (mOD) Scale	Depth	Samples and Insitu Tests Depth	Type	Result	Water Strike	Backfill
		TOPSOIL.			37.65					
	0.30	Brown sandy slightly gravelly silty CLAY.		37.5						
0.5										
1.0				37.0		1.00	B	JOT01		
	1.10				36.85	1.00	C	N=11 (1,1/2,2,3,4)		
1.5		Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.		36.5						
2.0	2.00			36.0	35.95	2.00	B	JOT02		
		Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.				2.00	C	N=18 (2,2/4,4,5,5)		
2.5				35.5						
3.0				35.0		3.00	B	JOT03		
						3.00	C	N=23 (2,3/6,6,5,6)		
3.5				34.5						
4.0				34.0		4.00	B	JOT04		
						4.00	C	N=31 (3,4/7,8,8,8)		
4.5				33.5						
5.0				33.0		5.00	B	JOT05		
						5.00	C	N=38 (4,6/9,9,10,10)		
5.5				32.5						
6.0				32.0		6.00	B	JOT06		
						6.00	C	N=44 (4,7/10,11,11,12)		
6.5				31.5						
7.0				31.0		7.00	B	JOT07		
						7.00	C	N=49 (5,8/11,12,13,13)		
7.5				30.5						
8.0				30.0		8.00	B	JOT08		
	8.20				29.75	8.00	C	50 (5,10/50 for 50mm)		
	8.30	Obstruction - possible boulders.		29.5	29.65	8.30	C	50 (25 for 5mm/50 for 0mm)		
8.5		End of Borehole at 8.30m								
9.0				29.0						
9.5				28.5						

Chiselling: From:	To:	Time:	Water Strikes: Strike:	Rose:	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
8.20	8.30	01:30	2.50	2.10	NS	28/03	8.30	6.50				0.00	8.30	Arisings	Borehole terminated due to obstruction.

Legend:
B: Bulk
D: Disturbed
U: Undisturbed
ES: Environmental
W: Water
C: Cone SPT
S: Split spoon SPT

Appendix 2

Trial Pit Logs with Dynamic Probe Results and Photographs

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP001**
Contract:	Mooretown	Easting:	716609.563	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	748010.870	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.03	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		26.5	26.73			0 0 0 2 2 2 2 3 4 5 5 5 6 6 7 7 8 8 9 9 9 10 11 12 12 14 14 20 22 24 26 28 30 31 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.0		1.00	B		
1.5				25.5					
2.0				25.0					
2.5	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).0mm diameter).		24.5	24.83	2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		24.0	24.33				
3.5				23.5					
4.0				23.0					
4.5				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP002**
Contract:	Mooretown	Easting:	716615.495	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747988.684	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.53	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.40	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.0	27.23			0 0 0 1 1 1 2 2 3 3 4 4 5 5 6 7 7 8 9 10 13 15 14 14 17 18 22 24 26 28 32 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5		1.00	B		
1.5				26.0					
2.0				25.5					
2.5	2.40	Obstruction - boulders. **Pit terminated at 2.40m**		25.0	25.13	2.50	B		
3.0				24.5					
3.5				24.0					
4.0				23.5					
4.5				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP003**
Contract:	Mooretown	Easting:	716589.053	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747973.887	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.49	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	29.19			1 0 0 0 2 2 2 3 3 4 4 4 5 5 5 6 6 7 7 8 8 9 9 10 11 14 20 23 24 26 27 28 30 32 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5		1.00	B		
1.5				28.0					
2.0				27.5					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).0mm diameter).		27.0	27.19	2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		26.5	26.69				
3.5				26.0					
4.0				25.5					
4.5				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP004**
Contract:	Mooretown	Easting:	716704.111	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747963.599	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.71	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.10	TOPSOIL.		28.5	28.61			1	
		MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with medium cobble content and some timber, red brick and plastic fragments.						0	
0.5								0	
				28.0				0	
								2	
1.0	1.00				27.71			2	
		MADE GROUND: dark grey slightly sandy gravelly silty clay with medium cobble content and some timber, red brick, rag, concrete brick and plastic fragments.		27.5		1.20	B	3	
1.5								3	
								3	
				27.0				4	
	1.80				26.91			4	▼
2.0		Firm dark grey slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						5	
								5	
				26.5				5	
								6	
2.5						2.50	B	7	
								7	
								8	
	2.70	Obstruction - boulders.		26.0	26.01			8	
		Pit terminated at 2.70m						9	
3.0								9	
								9	
				25.5				10	
								14	
3.5								22	
								24	
				25.0				23	
								24	
4.0								25	
								26	
				24.5				28	
								28	
4.5								30	
				24.0				35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.80 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP005**
Contract:	Mooretown	Easting:	716626.221	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747964.615	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.00	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		26.5	26.70			0 0 0 1 1 1 2 2 2 3 3 4 4 5 6 6 7 8 8 9 10 12 13 15 15 16 17 18 20 22 24 26 30 35	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0				26.0		1.00	B		
1.5				25.5					
2.0	2.20			25.0	24.80				
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.5		2.50	B		
	2.70	Obstruction - boulders.			24.30				
3.0		**Pit terminated at 2.70m**		24.0					
3.5				23.5					
4.0				23.0					
4.5				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP006**
Contract:	Mooretown	Easting:	716609.195	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747952.448	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.52	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	28.22			0 0 0 0 1 2 1 2 2 3 4 4 6 6 7 7 8 8 9 9 10 12 12 13 14 13 15 15 20 20 26 30 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5		1.00	B		
1.5				27.0					
2.0				26.5					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	26.22	2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		25.5	25.72				
3.5				25.0					
4.0				24.5					
4.5				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP007**
Contract:	Mooretown	Easting:	716683.958	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747949.521	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.12	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		28.0				0	
	0.30				27.82			0	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5				0	
0.5								1	
								1	
								1	
				27.5				2	
								2	
								2	
1.0						1.00	B	3	
				27.0				3	
								4	
								4	
								5	
1.5								6	
								6	
				26.5				7	
								7	
								8	
2.0								8	
								8	
				26.0				9	
								10	
	2.40				25.72			11	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).				2.50	B	12	
2.5				25.5				14	
								20	
								22	
								24	
								26	
3.0	3.00				25.12			30	
		Pit terminated at 3.00m		25.0				32	
								34	
								35	
3.5									
				24.5					
4.0				24.0					
4.5									
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP008**
Contract:	Mooretown	Easting:	716722.665	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747948.396	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.05	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		29.0				0 0 0 1 1 2 2 3 4 5 6 4 5 6 7 7 8 8 9 10 10 11 12 13 14 16 20 22 26 23 30 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			28.75				
0.5				28.5					
1.0				28.0		1.00	B		
1.5				27.5					
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			27.25				
2.0				27.0					
2.5				26.5		2.50	B		
	2.80	Obstruction - boulders. **Pit terminated at 2.80m**			26.25				
3.0				26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP009**
Contract:	Mooretown	Easting:	716584.442	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747944.908	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.60	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.30			0 0 0 1 1 2 2 3 3 4 6 8 8 8 9 9 8 9 10 11 12 13 14 16 16 15 17 20 22 24 26 30 32 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B		
1.5				28.5					
2.0				28.0					
2.5	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.40				
3.0	2.60	Obstruction - boulders.		27.0	27.00	2.50	B		
3.5		**Pit terminated at 2.60m**		26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP010**
Contract:	Mooretown	Easting:	716554.300	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747936.461	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.52	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	29.22			0 0 1 1 2 2 3 3 4 4	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5		1.00	B	5 5 5 6 6 7 7 8 9 10	
1.5				28.0					
2.0	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.32			11 12 13 14 15 16 20	
2.5	2.60	Obstruction - boulders.		27.0	26.92	2.50	B	24 26 23 24 23 26 32	
3.0		**Pit terminated at 2.60m**		26.5				34 35	
3.5				26.0					
4.0				25.5					
4.5				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP011**
Contract:	Mooretown	Easting:	716630.102	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747933.703	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.17	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.0	26.87			0 0 0 0 1 1 2 2 3 3 4 3 4 5 6 7 7 7 8 9 9 9 10 11 14 15 15 16 17 20 32 34 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5		1.00	B		
1.5				26.0					
2.0				25.5					
2.5				25.0		2.50	B		
3.0	2.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.5	24.37				
3.5	3.00	**Pit terminated at 3.00m**		24.0	24.17				
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP012**
Contract:	Mooretown	Easting:	716600.897	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747926.049	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.44	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0		TOPSOIL.		28.0	28.14	1.00	B	0 0 1 1 2 2 3 3 5 5 6 6 7 7 7 9 9 10 11 12 13 14 15 16 20 20 24 30 32 34 35	
0.5	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5					
1.0									
1.5				27.0					
2.0				26.5					
2.5				26.0		2.50	B		
3.0	2.90 3.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter). **Pit terminated at 3.00m**		25.5	25.54 25.44				
3.5				25.0					
4.0				24.5					
4.5				24.0					
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP013**
Contract:	Mooretown	Easting:	716691.160	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747922.715	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	25.66	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5	0.30	TOPSOIL.		25.5 25.0 24.5 24.0 23.5 23.0 22.5 22.0 21.5 21.0	25.36	1.00	B	0 0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 11 12 14 15 15 16 17 18 20 22 26 28 35	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				2.50	B		
	3.00	**Pit terminated at 3.00m**			22.66				

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP014**
Contract:	Mooretown	Easting:	716753.831	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747914.567	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.96	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.10	TOPSOIL.		27.5	27.86			1	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0 0 1 2 2 2 3 4	
1.0				27.0		1.00	B	6 7 6 7 8 8 9 8 9 10 11 13 13 14 15 15 16 20 22 28 31 30 32 32 33 33 35	
1.5				26.5					
2.0	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	25.76				
2.5	2.60	Obstruction - boulders.		25.5	25.36	2.50	B		
3.0		**Pit terminated at 2.60m**		25.0					
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP015**
Contract:	Mooretown	Easting:	716581.885	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747911.334	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.40	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	29.10			0 0 0 1 1 2 2 3 4 4 4 5 5 5 6 7 7 8 8 9 10 10 11 12 13 14 20 22 24 31 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5		1.00	B		
1.5				28.0					
2.0	2.20			27.5	27.20				
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.0		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		26.5	26.70				
3.5				26.0					
4.0				25.5					
4.5				25.0					
				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP016**
Contract:	Mooretown	Easting:	716618.511	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747911.846	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.29	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	27.99			0 0 0 1 1 2 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5		1.00	B	4 4 5 5 6 6 8 8 9 9	
1.5				27.0				10 11 14 16 20 20 22 24 26 27	
2.0				26.5					
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	25.89	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		25.5	25.29			30 32 34 35	
3.5				25.0					
4.0				24.5					
4.5				24.0					
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP017**
Contract:	Mooretown	Easting:	716699.051	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747900.392	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	25.04	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.10	TOPSOIL.		25.0	24.94			0	
		MADE GROUND: grey brown slightly sandy slightly gravelly silty clay.						0	
0.5				24.5				0	
	0.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			24.34			1	
1.0				24.0		1.00	B	1	
	1.40	Firm brown grey slightly sandy slightly gravelly clayey SILT with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			23.64			1	
1.5				23.5				2	
								2	
								3	
								4	
2.0				23.0		2.00	B	4	
								4	
								5	
								6	
								6	
								7	
								8	
								8	
								8	
								9	
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			22.84			11	
2.5				22.5		2.50	B	14	
								16	
								20	
								22	
								23	
								24	
								25	
								26	
								29	
3.0				22.0				28	
								32	
								35	
3.5				21.5					
	2.70	Obstruction - boulders.			22.34				
		Pit terminated at 2.70m							
4.0				21.0					
4.5				20.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP018**
Contract:	Mooretown	Easting:	716550.827	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747904.223	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.38	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		29.0	29.18			0 0 0 1 1 2 3 4 4 5 6 7 8 8 8 9 9 10 11 12 13 15 16 17 18 20 24 26 27 30 35	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5	28.48	1.00	B		
1.5				28.0					
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.28				
2.5	2.60	Obstruction - boulders.		27.0	26.78	2.50	B		
		Pit terminated at 2.60m							
3.0				26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					
				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP019**
Contract:	Mooretown	Easting:	716785.558	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747897.342	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.97	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.90	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.67			0 0 0 0 1 1 2 2 4 4 5 6 7 7 6 6 7 8 9 10 10 10 12 14 14	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
1.5				26.5					
2.0				26.0					
2.5	2.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.47	2.50	B		
3.0	2.90	Obstruction - boulders.		25.0	25.07			20 24 23 23 26 30 32 34 35	
3.5		**Pit terminated at 2.90m**		24.5					
4.0				24.0					
4.5				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP020**
Contract:	Mooretown	Easting:	716760.933	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747896.965	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.41	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.40	TOPSOIL.		27.0	27.01			0 0 0 1 1 1 2 2 3 3 4 5 6 6 6 8 8 7 9 10 11 12 14 16 20 22 24 26 23 28 30 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5		1.00	B		
1.5				26.0					
2.0				25.5					
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.0	25.01	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		24.5	24.41				
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP021**
Contract:	Mooretown	Easting:	716748.447	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747892.965	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.30	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0		TOPSOIL.		27.0	27.10			0 0 0 1 1 1 2 2 4 5 6 7 7 8 8 8 9 10 11 12 14 16 18 19 20 22 24 26 26 30 34 35	
	0.20	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.00	B		
0.5				26.5					
1.0									
1.5				26.0					
2.0				25.5					
2.5				25.0		2.50	B		
	2.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.5	24.60				
3.0	3.00	**Pit terminated at 3.00m**			24.30				
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP022**
Contract:	Mooretown	Easting:	716713.967	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747892.604	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	26.08	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.		26.0	25.88			0 0 0 1 1 2 2 3 3 4 5 5 6 6 6 6 7 7 8 8 9 9 10 14 15 15 16 20 24 26 30 32 32 31 35	
	0.70	MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with medium cobble content and some concrete, rag, scrap metal, red brick and plastic fragments.		25.5	25.38				
	1.60	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		25.0		1.00	B		
	2.30	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		24.5	24.48				
	3.00	Stiff dark grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.0		2.00	B		
		Pit terminated at 3.00m		23.5	23.78	2.50	B		
				23.0	23.08				
				22.5					
				22.0					
				21.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP023**
Contract:	Mooretown	Easting:	716603.363	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747895.644	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.76	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.5	28.46			0 0 0 1 1 1 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B	5 6 7 8 9 9 9 10 11 12 12 12	
1.5				27.5					
2.0				27.0					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5	26.46	2.50	B	14 14 16 17 19 20 24 21	
3.0	3.00	**Pit terminated at 3.00m**		26.0	25.76			32 34 35	
3.5				25.5					
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP024**
Contract:	Mooretown	Easting:	716568.642	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747887.484	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.82	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.5	28.52			0 0 1 1 1 2 1 2 3 4 7 8 6 7 7 6 8 8 9 9 12 12 13 13 14 17 18 20 24 26 32 30 34 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0				27.0					
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5	26.42	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		26.0	25.82				
3.5				25.5					
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP025**
Contract:	Mooretown	Easting:	716651.968	Date:	29/03/2024
Location:	Swords, Co. Dublin	Northing:	747890.274	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	26.07	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		26.0	25.77			0	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		25.5				0 0 1 1 1 1 2 2 2	
1.5				25.0		1.00	B	4 6 7 7 7 7	
2.0				24.5				9 10 11 12 14	
2.5				24.0		2.50	B	16 18 18 19 20	
3.0	3.00	**Pit terminated at 3.00m**		23.5	23.07			24 26 28 30 32	
3.5				23.0				34 35	
4.0				22.5					
4.5				22.0					
				21.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP026**
Contract:	Mooretown	Easting:	716516.490	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747887.419	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.64	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.5	28.34			1 1 0 0 1 2 2 2 3 4 5 7 6 6 7 8 9 8 9 10 14 16 20 22 23 26 28 30 30 28 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0				27.0					
2.5				26.5		2.50	B		
3.0	2.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	25.94				
3.5	3.00	**Pit terminated at 3.00m**		25.5	25.64				
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP027**
Contract:	Mooretown	Easting:	716811.059	Date:	28/03/2024
Location:	Swords, Co. Dublin	Northing:	747883.774	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.54	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.35	TOPSOIL.		28.5	28.19			0 1 0 1 1 1 2 2 2 3 4 6 7 6 6 7 7 7 8 10 11 14 14 13 15 15 18 24 26 30 28 26 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0				27.0					
2.5	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5	26.34	2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		26.0	25.84				
3.5				25.5					
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP028**
Contract:	Mooretown	Easting:	716793.537	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747878.329	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.03	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		27.5	27.83			0 0 0 1 1 1 1 2 2 3 4 3 4 5 7 6 7 9 7 8 8 10 12 13 12 15 17 18 20 21 22 28 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
1.5				26.5					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	26.13				
2.5	2.60	Obstruction - boulders.		25.5	25.43	2.50	B		
3.0		**Pit terminated at 2.80m**		25.0					
3.5				24.5					
4.0				24.0					
4.5				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP029**
Contract:	Mooretown	Easting:	716683.201	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747869.493	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	24.74	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.10	TOPSOIL.		24.5	24.64			0	
		MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with medium cobble content and some concrete and plastic fragments.						1	
	0.40	Firm light brown grey slightly sandy slightly gravelly clayey SILT with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			24.34			1	
1.0				24.0		1.00	B	0	
	1.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			23.64			1	
	1.40	Firm dark brown grey slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		23.5	23.34	1.50	B	1	
2.0				23.0				2	
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		22.5	22.54			2	
2.5	2.50	Obstruction - boulders.			22.24	2.40	B	3	
		Pit terminated at 2.50m		22.0				4	
3.0								4	
				21.5				5	
3.5								6	
				21.0				6	
4.0								7	
				20.5				8	
4.5								7	
				20.0				9	
								12	
								11	
								16	
								14	
								20	
								22	
								24	
								26	
								28	
								30	
								33	
								31	
								27	
								30	
								35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP030**
Contract:	Mooretown	Easting:	716755.509	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747871.328	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.56	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.40	TOPSOIL.		27.5	27.16			0 0 1 1 1 3 3 2 3 4	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B	6 9 8 10 11 10 11 12 13 13	
1.5				26.5					
2.0				26.0				15 14 16 18 19 20 22 23 25 24	
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.16	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		25.0					
3.5				24.5	24.56			26 30 28 32 35	
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP031**
Contract:	Mooretown	Easting:	716775.782	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747872.842	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.73	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.43			1	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B	0 0 1 1 1 2 3 3 3 4	
1.5				26.5				6 6 7 6	
2.0	2.20			26.0				8 9 8 8 10 9	
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.53	2.50	B	11 14 15 15 16	
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		25.0	25.03			20 22 26 30 34 35	
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP032**
Contract:	Mooretown	Easting:	716780.944	Date:	27/03/2024
Location:	Swords, Co. Dublin	Northing:	747857.513	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.74	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.44			0 0 1 1 1 2 2 3 3 3 4 3 5 6 7 7 8 8 7 11 10 11 14 15 15 16 18 20 20 24 25 27 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
1.5				26.5					
2.0	2.20			26.0					
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.54	2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		25.0	24.94				
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP033**
Contract:	Mooretown	Easting:	716790.450	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747825.642	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.93	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.63			0 0 0 1 2 2 2 3 3 4 6 4 5 6 8 6 8 9 10 13 13 13 15 14 17 18 20 22 26 24 28 27 31 35	
	0.60	Firm light grey brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			27.33				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
	1.30	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 250mm diameter).		26.5	26.63				
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	25.83				
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		25.5	25.23	2.50	B		
3.0				25.0					
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP034**
Contract:	Mooretown	Easting:	716452.454	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747824.103	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.89	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		28.5	28.69			1 1 1 2 2 2 3 3 4 5 4 6 7 8 9 8 8 9 10 12 10 14 15 12 17 18 19 20 22 24 21 24 29 35	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.0									
1.5	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5	27.39				
	1.70				27.19				
	1.90	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to subangular of limestone.		27.0	26.99				
2.0									
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5		2.50	B		
	2.80	Obstruction - boulders.		26.0	26.09				
3.0		**Pit terminated at 2.80m**							
3.5				25.5					
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.70 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP035**
Contract:	Mooretown	Easting:	716559.150	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747826.582	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.17	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.0	26.87			0 0 0 2 2 3 3 4 2 2 3 3 4 3 3 4 5 6 8 9 10 10 12 14 11 21 24 30 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5		1.00	B		
1.5				26.0					
2.0				25.5					
2.5	2.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.0	24.67	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		24.5	24.17				
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP036**
Contract:	Mooretown	Easting:	716605.612	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747820.920	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.23	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		27.0	27.03			0 2 2 3 3 3	
	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5	26.63			2 2 2 2 2	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.00	B	2 2 2	
1.5	1.70			26.0				3 3 3 3	▼
		Stiff grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.53			4 4 4	
2.0						2.00	B	6 8	
				25.0				16 18 16	
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.83	24.83	2.50	B	27 35	
	2.70	Obstruction - boulders.		24.5	24.53				
3.0		**Pit terminated at 2.70m**							
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.40 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP037**
Contract:	Mooretown	Easting:	716406.738	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747851.104	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.14	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	28.84			0 0 1 1 2 2 3 3 3 4 5 5 6 4 4 4 3 3 3 6 6 7 7 8 9 10 11 19 20 24 30 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5		1.00	B		
1.5				28.0					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.24				
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		27.0	26.64	2.50	B		
3.0				26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					
				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP038**
Contract:	Mooretown	Easting:	716735.568	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747843.305	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.81	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.51			0 0 2 3 2 2 1 3 4 5 4 6 5 4 3 4 3 5 5 7 6 4 7 8 9 10 14 18 19 23 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
1.5	1.60	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 450mm diameter).		26.5	26.21				
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	25.91				
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		25.5	25.31	2.50	B		
3.0				25.0					
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP039**
Contract:	Mooretown	Easting:	716523.061	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747837.742	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.39	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 1.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.0	27.09	1.00	B	0 0 0 0 0 2 2 1 1 1 2 3 4 3 1 1 1 1 1 1 1 2 3 2 1 2 1 1 2 4 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5					
1.5	1.70	Obstruction - boulders. **Pit terminated at 1.70m**		26.0	25.69				
2.0				25.5					
2.5				25.0		2.50	B		
3.0				24.5					
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Major pit wall collapse forcing completion.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP040**
Contract:	Mooretown	Easting:	716402.089	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747819.589	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.73	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.43			1, 1, 0, 0, 2, 3, 3, 4, 4, 5, 5, 6, 6, 7, 9, 9, 9, 9, 10, 8, 12, 14, 16, 16, 20, 22, 24, 25, 26, 28, 32, 33, 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5					
2.0				28.0	28.03				
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		27.5	27.23	2.50	B		
3.0				27.0					
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP041**
Contract:	Mooretown	Easting:	716758.688	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747820.879	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.88	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Depth	Stratum Description	Level (mOD) Depth:	Samples Depth	Samples Type	Probe	Water Strike
0.30	TOPSOIL.	27.58			0 0 0 1 2 2 2 3 3 3 4 5 6 7 6 7 7 8 7 7 6 9 10 13 14 19 20 22 24 33 35	
0.90	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.	26.98	1.00	B		
1.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.	26.08	2.00	B		▼
2.60	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 250mm diameter).	25.28	2.80	B		
3.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).	24.88				
	Pit terminated at 3.00m					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	1.80 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP042**
Contract:	Mooretown	Easting:	716619.184	Date:	17/04/2024
Location:	Swords, Co. Dublin	Northing:	747813.901	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.50	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		27.0	27.30	1.00	B	0 0 0 0 3 4 3 5 3 2 2 3 4 5 4 6 5 4 6 7 7 8 6 7 11 9 10 11 8 10 10 14 10 11 16 19 17 17 27 35	▼
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5					
1.5				26.0					
2.0				25.5					
2.5	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.0	25.30	2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		24.5	24.80				
3.5				24.0					
4.0				23.5					
4.5				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.80 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP043**
Contract:	Mooretown	Easting:	716658.257	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747809.386	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.18	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.0	26.88			0	
	0.50	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			26.68			0	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		26.5		1.00	B	0 1 2 2 1 1 1 2 4 6 7 8 8 9 10	
1.5									
2.0				26.0					
				25.5					
				25.0					
2.5	2.40				24.78			5 4 8 10 12 12 18	
	2.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		24.5	24.58	2.50	B	24 21 27 35	
3.0		Obstruction - boulders. **Pit terminated at 2.60m**							
3.5				24.0					
4.0				23.5					
4.5				23.0					
				22.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	2.20 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP044**
Contract:	Mooretown	Easting:	716561.088	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747801.194	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	27.94	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		27.5	27.64			0 0 0 2 3 3 3 3 4 3 4 3 7 5 6 4 3 4 3 4 5 6 4 5 8 12 19 21 20 22 20 18 31 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.0		1.00	B		
1.5				26.5					
2.0				26.0					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		25.5	25.64	2.50	B		
3.0	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		25.0	25.34				
3.5				24.5					
4.0				24.0					
4.5				23.5					
				23.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Minor pit wall instability.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP045**
Contract:	Mooretown	Easting:	716595.392	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747807.191	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.30	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	28.00			0 0 2 3 2 3 3 4 3 4 5 4 3 4 6 5 4 7 9 7 8 5 5 6 8 7 8 10 14 19 20 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5		1.00	B		
1.5				27.0					
2.0				26.5					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	26.00	2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		25.5	25.60				
3.5				25.0					
4.0				24.5					
4.5				24.0					
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP046**
Contract:	Mooretown	Easting:	716418.352	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747813.026	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.72	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.42			0 0 0 1 1 2 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	4 4 5 5 6 7 7 8 8	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5				8 9 10 11 12 14 16 17 18 19 20 22 23 24 25 30 32 35	
2.0				28.0	27.92				
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		27.5	27.22	2.50	B		
3.0				27.0					
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP047**
Contract:	Mooretown	Easting:	716639.960	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747800.607	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.01	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		27.5	27.71			0 0 0 2 3 2 2 3 4 3 5 3 4 5 7 7 6 5 8 9 5 4 9 11 13 10 19 19 20 30 35	
0.5		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0				27.0		1.00	B		
1.5				26.5		1.60	B		
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	26.11				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.50m**		25.5	25.41	2.50	B		
3.0				25.0					
3.5				24.5					
4.0				24.0					
4.5				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP048**
Contract:	Mooretown	Easting:	716428.533	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747796.579	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.93	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.63			0 0 1 1 1 2 2 3 4 6 7 6 8 9 10 11 10 11 12 13 14 15 20 25 25 26 28 30 31 32 32 34 33 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	28.23				
2.0				28.0					
2.5				27.5		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		27.0	27.23				
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP049**
Contract:	Mooretown	Easting:	716618.639	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747796.281	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.58	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.5	28.28			0 0 0 2 3 2 2 3 4 6	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B	3 5 6 7 7 5	
1.5	1.60	Stiff brown grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	26.98			8 7 7 7 6 7 6 9 8	▼
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.0	26.68			11 10 11 12 14 14 13 15 18 23 35	
2.5	2.60	Obstruction - boulders.		26.5		2.50	B		
3.0		**Pit terminated at 2.60m**		26.0	25.98				
3.5				25.5					
4.0				25.0					
4.5				24.5					
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.60 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP050**
Contract:	Mooretown	Easting:	716400.289	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747795.061	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.34	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	30.04	1.00	B	0 0 1 1 2 1 3 4 5 4 5 7 6 6 8 7 8 8 8 9 9 10 11 12 12 13 20 22 24 23 30 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5					
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0	28.74				
2.0				28.5					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		28.0	27.74	2.50	B		
3.0				27.5					
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP051**
Contract:	Mooretown	Easting:	716534.936	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747797.229	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.36	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	28.06			0 0 0 0 1 1 2 2 2 2	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5		1.00	B	3 3 5 4 3 3 3 5 6 6 8 9 9 12 18 19 24 22 35	
1.5				27.0					
2.0				26.5					
2.5	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.0	26.16	2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		25.5	25.66				
3.5				25.0					
4.0				24.5					
4.5				24.0					
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP052**
Contract:	Mooretown	Easting:	716458.519	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747792.880	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.57	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		29.5	29.37			0	
	0.40	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			29.17			0	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	0	
								1	
								1	
								1	
								1	
								2	
								3	
				28.5				3	
								3	
								3	
								4	
	1.40				28.17			5	
1.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						5	
				28.0				6	
								7	
								8	
								9	
2.0								9	
						2.00	B	8	
				27.5				8	
								8	
								8	
								9	
2.5								10	
	2.60	Obstruction - boulders.		27.0	26.97			14	
		Pit terminated at 2.60m						17	
								18	
3.0								20	
				26.5				22	
								23	
								30	
								35	
3.5									
				26.0					
4.0									
				25.5					
4.5									
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP053**
Contract:	Mooretown	Easting:	716664.378	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747792.405	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.37	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0	
	0.20	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			28.17			0 0 0 3 2 1 2 1 2 2 4 3 4 6 6 8 7 9 5 7 7 9 10 11 12 14 18 16 17 19 27 35	
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			26.47	1.00 1.60 2.20	B B B		
	2.50	Obstruction - boulders.			25.87				
		Pit terminated at 2.50m							

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.40 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP054**
Contract:	Mooretown	Easting:	716602.452	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747787.909	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.00	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		28.5	28.70			0 0 1 1 1 2 2 3 3 4 3 5 4 3 6 6 8 7 7 10 16 14 17 21 24 26 28 35	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0				28.0		1.00	B		
1.5				27.5					
2.0	2.10			27.0	26.90				
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5		2.50	B		
	2.80	Obstruction - boulders.			26.20				
3.0		**Pit terminated at 2.80m**		26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP055**
Contract:	Mooretown	Easting:	716566.564	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747782.896	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.52	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	28.22			0 0 1 2 3 3 4 3 3 5 6 4 3 4 5 4 7 11 14 12 18 24 27 35	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0	0.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5	27.72	1.10	B		
1.5				27.0					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5	26.62				
2.5				26.0		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		25.5	25.82				
3.5				25.0					
4.0				24.5					
4.5				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP056**
Contract:	Mooretown	Easting:	716646.553	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747781.937	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.98	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		28.5	28.78			0 1 1 1 2 2 3 4 3 4 4 7 7 8 9 8 9 9 9 10 11 13 14 16 17 17 18 22 19 24 26 29 30 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.0	27.08				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		26.5	26.38	2.50	B		
3.0				26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.90 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP057**
Contract:	Mooretown	Easting:	716470.921	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747780.312	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.73	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.43			0 0 0 0 1 2 2 3 3 4 3 2 3 4 6 5 4 6 5 7 11 13 15 10 9 13 16 15 19 24 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0					
1.5				28.5					
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.0	27.93				
2.5				27.5					
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.60m**		27.0	27.03				
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP058**
Contract:	Mooretown	Easting:	716492.018	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747777.669	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.57	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.27			0 0 0 1 2 2 2 3 4 5 4 6 5 5 7 7 6 4 5 6 10 9 12 9 8 12 14 10 9 13 15 17 13 18 17 29 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0					
1.5				28.5					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.0	27.67				
2.5				27.5					
3.0	2.60	Obstruction - boulders.		27.0	26.97				
		Pit terminated at 2.70m							
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP059**
Contract:	Mooretown	Easting:	716418.842	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747778.809	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.37	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	30.07			0 0 1 1 2 2 3 4 3 4 5 6 7 7 7 8 9 9 8 8 10 14 12 15 12 17 18 20 19 22 30 32 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0	28.67				
2.0				28.5					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		28.0	27.77	2.50	B		
3.0				27.5					
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP060**
Contract:	Mooretown	Easting:	716687.368	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747771.987	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.78	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0	
	0.20	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			28.58			0 0 1 1 2	▼
0.5				28.5				1 2	
				28.0		1.00	B	3 4	
1.0								6	
	1.20	Stiff brown grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 250mm diameter).			27.58			8 8 9	
1.5				27.5		1.50	B	6 7	
								8 10	
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.0	26.88			13 13	
2.0								15	
				26.5		2.30	B	20 26 23	
2.5	2.50	Obstruction - boulders.			26.28			31 35	
		Pit terminated at 2.50m							
3.0				26.0					
				25.5					
3.5									
				25.0					
4.0									
				24.5					
4.5									
				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.40 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP061**
Contract:	Mooretown	Easting:	716612.927	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747769.359	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.46	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0		TOPSOIL.		29.5				0	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			29.16			1	
0.5				29.0				1	
								2	
								2	
								2	
								3	
1.0				28.5		1.00	B	6	
								4	
								4	
								3	
								3	
1.5				28.0				6	
								7	
								10	
								15	
								14	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.46			13	
								17	
								18	
								22	
								27	
2.5				27.0		2.50	B	25	
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**			26.86			35	
3.0				26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					
				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP062**
Contract:	Mooretown	Easting:	716573.393	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747769.593	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.08	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.40	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	28.78			0 0 2 2 2 3 2 2 3 5 6 7 6 10 14 8 14 18 21 28 21 35	
	0.70	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5	28.38				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0	1.90	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to subangular of limestone.		27.0	27.18	2.00	B		▼
2.5	2.40	Pit terminated due to pit wall instability. **Pit terminated at 2.40m**		26.5	26.68				
3.0				26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Pit wall instability.	Major pit wall collapse forcing completion.	1.90 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP063**
Contract:	Mooretown	Easting:	716438.512	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747766.760	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.43	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			30.13			0 0 0 1 1 2 2 3 3 4 3 3 3 6 8 7 6 5 8 6 5 6 6 8 9 12 20 23 24 26 30 32 34 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.0		1.00	B		
	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.5	28.93				
	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		29.0	27.93	2.50	B		

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5

29.5 28.5 28.0 27.5 27.0 26.5 26.0 25.5

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP064**
Contract:	Mooretown	Easting:	716652.294	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747764.395	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.49	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		29.0	29.29			0 0 0 1 1 2 2 1 1 1 2 4 6 5 8 9 5 8 10 12 12 14 18 20 24 27 30 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5		1.00	B		
1.5				28.0		1.60	B		
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.69				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		27.0	26.89	2.50	B		
3.0				26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.70 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP065**
Contract:	Mooretown	Easting:	716392.588	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747760.185	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.24	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.30	TOPSOIL.		31.0	30.94			1	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0 0 0 0 2 3 4 4 3	
1.0				30.5		1.00	B	5 5 5 7 8 7 7 8	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0				9 7 6 5 6 8 9	
2.0				29.5	29.44				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		29.0	28.64	2.50	B	12 14 20 22 24 22 28 30 35	
3.0				28.5					
3.5				28.0					
4.0				27.5					
4.5				27.0					
				26.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP066**
Contract:	Mooretown	Easting:	716595.883	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747758.743	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.52	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		29.0	29.32			0 0 0 2 2 3 4 2 3 4 4 8 7 7 5 5 4 3 3 15 23 26 31 35	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.0				28.5		1.00	B		
1.5				28.0					
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			27.82				
2.0				27.5					
2.5	2.50	Obstruction - boulders.		27.0	27.02	2.50	B		
		Pit terminated at 2.50m							
3.0				26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP067**
Contract:	Mooretown	Easting:	716477.895	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747754.210	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.28	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	29.98			0 0 1 1 3 2 2 4 2 3 4 3 5 4 6 5 5 7 4 8 10 8 7 7 12 10 11 9 15 17 24 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B		
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0					
2.0				28.5	28.48				
2.5				28.0		2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		27.5	27.48				
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP068**
Contract:	Mooretown	Easting:	716492.630	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747750.627	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.22	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		30.0	29.92			0 0 0 1 1 2 2 2 3 2 4 3 5 3 4 5 7 6 4 8 10 7 8 10 12 9 8 10 11 10 8 9 12 11 13 16 24 20 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B		
				29.0					
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	28.52				
				28.0					
	2.50	Obstruction - boulders. **Pit terminated at 2.50m**			27.72	2.50	B		
				27.5					
				27.0					
				26.5					
				26.0					
				25.5					

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP069**
Contract:	Mooretown	Easting:	716565.175	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747751.551	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.25	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.30	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.		29.0	29.05			0	
0.5		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0 0 0 1 2	
	0.80			28.5	28.45			2	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.00	B	3 3 3 4	
1.5				28.0				3 4 3 2	
	1.70			27.5	27.55			5 6 7	
2.0		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).				2.00	B	16 19 27 27	
	2.30	Pit terminated due to pit wall instability. **Pit terminated at 2.30m**		27.0	26.95			35	
2.5				26.5					
3.0				26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Pit wall instability.	Major pit wall collapse forcing completion.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP070**
Contract:	Mooretown	Easting:	716614.671	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747745.616	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.78	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.48			0 0 0 2 2 1 2 1 1 2	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	8 5 4 5 5 5	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5 28.0	27.98			8 10 16	
2.0				27.5		2.00	B	25 28 35	
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**			27.28				
3.0				27.0					
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP071**
Contract:	Mooretown	Easting:	716631.944	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747748.387	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.71	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.30	TOPSOIL.		29.5	29.41			1 0 0 0 2 3 1 1 2 3 4 2 2 6 7 6 8 9 8 10 12 14 9 9 16 12 13 18 17 19 24 35	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B		
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	27.81				
	2.70	Obstruction - boulders.		28.0		2.50	B		
		Pit terminated at 2.70m		27.5	27.01				
				27.0					
				26.5					
				26.0					
				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP072**
Contract:	Mooretown	Easting:	716404.994	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747749.212	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.49	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		31.0	31.19	1.00	B	0 0 0 1 1 2 2 3 4 5 5 5 6 7 8 9 9 9	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.5					
1.0									
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0	29.79				
2.0				29.5				13 14 15 17 18 19 19 20	
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		29.0	28.99	2.50	B	25 24 24	
3.0				28.5				30 32 35	
3.5				28.0					
4.0				27.5					
4.5				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP073**
Contract:	Mooretown	Easting:	716456.953	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747746.817	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.73	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		30.5	30.53			0 0 0 1 2 3 2 2 4 3 3 4 6 5 4 6 7 8 7 6 4 7 8 8 10 9 12 9 7 7 11 9 13 14 11 10 9 12 11 16 18 24 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.0		1.00	B		
1.5				29.5					
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0	28.73				
2.5				28.5		2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		28.0	27.93				
3.5				27.5					
4.0				27.0					
4.5				26.5					
				26.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.70 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP074**
Contract:	Mooretown	Easting:	716710.284	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747748.004	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.08	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		29.0	28.88			0 0 0 1 1 1 1 1 2 4 6 7 8 7 8 8 9 8 10 12 14 12 20 24 28 35	
	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5	28.48				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0		1.00	B		
1.5				27.5					
2.0				27.0		2.00	B		
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			26.88				
2.5	2.70	Obstruction - boulders.		26.5	26.38	2.50	B		
		Pit terminated at 2.70m							
3.0				26.0					
3.5				25.5					
4.0				25.0					
4.5				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.60 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP075**
Contract:	Mooretown	Easting:	716727.539	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747739.164	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.31	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		28.0	28.01			0 0 1 2 1 2 3 4	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.5		1.00	B	2 3 4 6 6 8 7	
1.5	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.0				10 7 6 4 7 11 9 8 7	
2.0	2.60	Obstruction - boulders.		26.5	26.41				
2.5		**Pit terminated at 2.60m**		26.0	25.71	2.50	B	11 15 19 15 20 26 35	
3.0				25.5					
3.5				25.0					
4.0				24.5					
4.5				24.0					
				23.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP076**
Contract:	Mooretown	Easting:	716428.835	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747738.094	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.57	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		31.5				0	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			31.37			0	
0.5				31.0				0	
	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			30.67	1.00	B	1	
1.0				30.5				1	
								1	
1.5								2	
	1.60	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.0	29.97			2	
								2	
2.0						2.00	B	3	
				29.5				3	
								4	
								6	
								7	
2.5								7	
	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0	29.17	2.50	B	8	
								9	
								9	
								9	
								10	
								10	
								8	
								9	
								11	
								14	
								16	
								18	
								19	
								20	
								24	
3.0	3.00	**Pit terminated at 3.00m**		28.5	28.57			35	
3.5				28.0					
				27.5					
4.0									
4.5				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	1.40 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP077**
Contract:	Mooretown	Easting:	716581.489	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747734.426	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.86	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			29.66			0 0 0	
	0.20	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5				2 2 1 1 2 1 2 2	
0.5									
1.0				29.0		1.00	B	7 6 8 5 4 5 8 10 16 24 29 31 35	
1.5				28.5					
	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.0	28.26				
2.0									
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		27.5	27.36	2.50	B		
3.0				27.0					
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP078**
Contract:	Mooretown	Easting:	716603.974	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747732.118	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.24	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		30.0	29.94			0 0 1 1 2 1 2 2 2 7 5 8 5 5 6 7 8 9 10 14 12 12 11 19 24 26 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B		
				29.0					
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	28.44				
				28.0		2.50	B		
	2.70	Obstruction - boulders.		27.5	27.54				
		Pit terminated at 2.70m							
				27.0					
				26.5					
				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP079**
Contract:	Mooretown	Easting:	716392.055	Date:	02/04/2024
Location:	Swords, Co. Dublin	Northing:	747732.920	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.90	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		31.5	31.60			0 0 0 1 1 1 1 2 3 4 4 5 5 6 6 7 8 9 10 10 10 8 9 11 12 14 16 20 25 30 35	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.0		1.00	B		
1.0									
1.5				30.5					
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0	29.90				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		29.5	29.30	2.50	B		
3.0				29.0					
3.5				28.5					
4.0				28.0					
4.5				27.5					
				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP080**
Contract:	Mooretown	Easting:	716475.766	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747729.148	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.16	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		31.0	30.86			0 0 0 1 2 2 3 2 3 5 7 8 9 6 5 7 10 8 8 9 11 9 12 10 8 7 12 13 17 21 15 14 19 27 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.5		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0					
2.0				29.5	29.46				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		29.0	28.56	2.50	B		
3.0				28.5					
3.5				28.0					
4.0				27.5					
4.5				27.0					
				26.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP081**
Contract:	Mooretown	Easting:	716500.463	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747728.923	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.77	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		30.5	30.47			0 0 0 2 2 2 2 3 1 1 2 2 2 3 3 4 4 2 3 4 5 8 11 12 11 10 10 12 13 13 15 19 25 30 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.0		1.00	B		
	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.5	28.57	2.50	B		
	2.70	Obstruction - boulders.		29.0	28.07				
		Pit terminated at 2.70m		28.5					
				28.0					
				27.5					
				27.0					
				26.5					
				26.0					

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP082**
Contract:	Mooretown	Easting:	716693.346	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747735.201	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.57	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		34.5				0	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			34.27			0	
0.5				34.0				0	
								1	
								2	
								1	
1.0						1.00	B	2	
								1	
				33.5				1	
								3	
								5	
								6	
1.5								7	
				33.0				7	
								7	
								8	
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			32.67			7	
2.0				32.5				9	
								8	
								10	
								11	
								14	
2.5								14	
				32.0		2.50	B	19	
								11	
	2.70	Obstruction - boulders.			31.87			26	
		Pit terminated at 2.70m						29	
3.0								35	
				31.5					
3.5									
				31.0					
4.0				30.5					
4.5				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP083**
Contract:	Mooretown	Easting:	716706.328	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747722.325	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.27	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.0	28.97			0 0 0 0 1 1 1 2 2	
1.0	0.90	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.5	28.37	1.00	B	3 4 4 5 6 6 5 7 7 7 8 9 9 10 11 12 13 15 16 18 20 30 32 33 35	
1.5		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0					
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.17				
2.5	2.60	Obstruction - boulders.		27.0	26.67	2.50	B		
3.0		**Pit terminated at 2.60m**		26.5					
3.5				26.0					
4.0				25.5					
4.5				25.0					
				24.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.50 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP084**
Contract:	Mooretown	Easting:	716455.011	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747720.168	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.52	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			31.22			0 0 0 2	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.0				1 2 3 2 2 3	
0.5									
1.0				30.5		1.00	B	4 2 3 5	
1.5				30.0				4 3 4 7	
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			29.62			5 7 9 8 11	
2.0				29.5					
2.5				29.0		2.50	B	6 8 9 10	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			28.82			10 9 11	
3.0				28.5				8 10 9 10	
3.5				28.0				13 14 16 18	
4.0				27.5				21 35	
4.5				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP085**
Contract:	Mooretown	Easting:	716670.622	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747728.864	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.76	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.46			0	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	0 0 0 0 1 2 1 1 3 4 6 7 9 6 6 5 8 8 7 10 9 13 12 20 24 29 35	
1.5				28.5					
2.0				28.0					
2.5	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.46				
3.0	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		27.0	27.16	2.50	B		
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP086**
Contract:	Mooretown	Easting:	716405.271	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747717.116	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.28	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		32.0	31.98			0 0 0 1 1 2 2 3 4 3 4 4 5 5 5 5 7 7 7 9 9 10 11 12 14 15 16 18 19 28 30 32 34 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.5		1.00	B		
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.0	30.38				
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		30.5	29.68	2.50	B		
				30.0					
				29.5					
				29.0					
				28.5					
				28.0					
				27.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP087**
Contract:	Mooretown	Easting:	716504.110	Date:	05/04/2024
Location:	Swords, Co. Dublin	Northing:	747714.470	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.10	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.30	TOPSOIL.		31.0	30.80			0 0 0 2 2 3 2 1 2 1 1 2 3 4 2 7 6 10 8 10 14 20 19 16 26 17 17 15 18 24 28 26 35	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.5		1.00	B		
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0	29.30				
				29.5		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		29.0	28.40				
				28.5					
				28.0					
				27.5					
				27.0					
				26.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP088**
Contract:	Mooretown	Easting:	716720.171	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747711.303	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.61	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		28.5				0	
	0.30				28.31			0	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.0				0	
0.5								2	
								2	
								1	
				27.5				2	
1.0						1.00	B	3	
								4	
								4	
								7	
1.5				27.0				8	
								8	
								8	
								6	
	1.90				26.71			10	
2.0		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		26.5				14	
								24	
2.5						2.50	B	35	
	2.60	Obstruction - boulders.		26.0	26.01				
		Pit terminated at 2.60m							
3.0				25.5					
3.5				25.0					
4.0				24.5					
4.5				24.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP089**
Contract:	Mooretown	Easting:	716479.415	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747707.791	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.80	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		31.5	31.50			0 0 0 1 2 2 2 2 2	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.0		1.00	B	1 1 1 1 2 2 3 3 2	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.5				4 7 12 22 24 28 30 35	
2.0				30.0	30.00				
2.5				29.5		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		29.0	29.10				
3.5				28.5					
4.0				28.0					
4.5				27.5					
				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP090**
Contract:	Mooretown	Easting:	716426.757	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747707.050	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.34	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		32.0	32.04			0 0 0 0 1 1 2 2 3 5 3 4 4 6 7 6 5	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.5		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.0	30.64				
2.0				30.5				8 9 10 9 10 10	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		30.0	29.64	2.50	B	20 22 24 26 28 24 25	
3.0				29.5				32 35	
3.5				29.0					
4.0				28.5					
4.5				28.0					
				27.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP091**
Contract:	Mooretown	Easting:	716639.199	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747712.484	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.38	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	30.08			0 1 2	
	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			29.78			1 2 1 1	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B	0 2 2 6 7 8 12 9 9 8 8 10 11	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		29.0	28.38			7 7 17 19 21 23 25	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		28.0	27.68	2.50	B	35	
3.0				27.5					
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP092**
Contract:	Mooretown	Easting:	716522.655	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747704.466	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.96	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 0 0	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			30.66			3 2 2 1 2 1 3 3 3 4 2 3 2 3	
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			29.16			6 7 9 11 7 8 8 9 11 10 10 11 12 24 17 20 35	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			28.26				

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP093**
Contract:	Mooretown	Easting:	716675.768	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747708.098	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.84	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.54			0 0 0 1 1 1 1 3 2 4 5 5 4 4 7 7 7 5 8 9 10 10 9 10 18 19 20 26 28 26 30 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	28.14				
2.0				28.0					
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		27.5	27.14	2.50	B		
3.0				27.0					
3.5				26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP094**
Contract:	Mooretown	Easting:	716384.114	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747705.618	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.67	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		32.5	32.37			0 0 0 0 1 1 1 2 3 3 3 4 4 6 7 6 6 5	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.0		1.00	B		
				31.5					
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.0	30.87				
				30.5		2.50	B	8 9 10 9 10 15 16 18	
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		30.0	30.07			24 26 28 26 26 32 35	
				29.5					
				29.0					
				28.5					
				28.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP095**
Contract:	Mooretown	Easting:	716609.595	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747698.825	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.83	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.5	30.53			0 0 1 1 2 1 0 0 1 2 2 7 8 12 10 9 9 8 8 10 7 7 21 24 30 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		30.0		1.00	B		
1.5				29.5					
2.0				29.0					
2.5	2.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5	28.23	2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		28.0	27.83				
3.5				27.5					
4.0				27.0					
4.5				26.5					
				26.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP096**
Contract:	Mooretown	Easting:	716439.157	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747692.494	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.41	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		32.0	32.11			0 0 1 1 2 2 3 3 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.5		1.00	B	4 3 2 3 3 2 2 4 4 5 4 6 6 8	
1.5				31.0					
2.0				30.5					
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.0	30.01	2.50	B	11 11 11 13 15 16 17 17 35	
3.0	3.00	**Pit terminated at 3.00m**		29.5	29.41				
3.5				29.0					
4.0				28.5					
4.5				28.0					
				27.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP097**
Contract:	Mooretown	Easting:	716687.371	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747689.586	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.66	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		29.5	29.36			0 0 0 1 1 2 1 2 1	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	5 7 8 9 8 7 8 6 9 9 10 13 15 13 19 21 25 27 35	
1.5				28.5					
2.0	2.10			28.0					
2.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		27.5	27.56	2.50	B		
3.0	2.60	Obstruction - boulders.		27.0	27.06				
3.5		**Pit terminated at 2.60m**		26.5					
4.0				26.0					
4.5				25.5					
				25.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP098**
Contract:	Mooretown	Easting:	716474.229	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747691.561	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.13	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		32.0				0	
	0.30				31.83			0	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.5				1	
								1	
1.0						1.00	B	2	
				31.0				2	
1.5								3	
								2	
	1.70			30.5	30.43			3	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						3	
2.0								5	
				30.0				9	
								11	
								13	
								29	
2.5						2.50	B	28	
								35	
	2.70	Obstruction - boulders.		29.5	29.43				
		Pit terminated at 2.70m							
3.0				29.0					
3.5									
				28.5					
4.0									
				28.0					
4.5									
				27.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP099**
Contract:	Mooretown	Easting:	716499.802	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747690.970	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.68	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		31.5	31.38			0	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0	
0.5								0	
								1	
								1	
				31.0				1	
								3	
								3	
1.0						1.00	B	2	
								3	
				30.5				2	
								2	
								2	
1.5								3	
								5	
				30.0				4	
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			29.88			5	
								6	
2.0								12	
								18	
				29.5				17	
								20	
								12	
2.5						2.50	B	13	
								14	
	2.70	Obstruction - boulders.		29.0	28.98			18	
		Pit terminated at 2.70m						15	
								14	
3.0								17	
								22	
				28.5				20	
								25	
								27	
3.5								35	
				28.0					
4.0									
				27.5					
4.5									
				27.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP100**
Contract:	Mooretown	Easting:	716408.432	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747682.677	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.79	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		32.5	32.49			1 1 1 2 2 3 2 2 2 3 4 4 5 5 4 5 5 6 8 10 15 12 13 10 11 14 15 12 15 17 15 16 15 16 18 17 19 26 22 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.0		1.00	B		
1.5				31.5					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.0	30.89				
2.5				30.5		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		30.0	30.09				
3.5				29.5					
4.0				29.0					
4.5				28.5					
				28.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP101**
Contract:	Mooretown	Easting:	716710.241	Date:	19/04/2024
Location:	Swords, Co. Dublin	Northing:	747682.888	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	28.99	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 0 1 2 1 1 3 1 2 4 5 7 8 7 6 6 9 11 9 10 13 10 14 11 9 13 15 16 14 27 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			28.69	1.00	B		
	2.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			26.69	2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			26.29				

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP102**
Contract:	Mooretown	Easting:	716659.134	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747676.578	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.43	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	30.13			0 0 0 2 1 1 1 2 2 1 3 3 2 3 3 2 4 5 5 7 6 7 8 8 8 7 9 13 16 19 19 22 19 16 15 17 19 35	
	0.70	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			29.73				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5		1.00	B		
1.5				29.0					
2.0				28.5					
2.5	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.0	28.03	2.50	B		
	2.70	Obstruction - boulders.			27.73				
3.0		**Pit terminated at 2.70m**		27.5					
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.10 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP103**
Contract:	Mooretown	Easting:	716393.514	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747673.184	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.14	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		33.0	32.84			0 0 0 1 2 2 3 2 1 1	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.5		1.00	B	3 2 3 3 4 4 5 6 5 5 8 7 7 9 11 12 13 14 14 15 19 30 35	
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.0	31.24	2.50	B		
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		31.5	30.54				
				31.0					
				30.5					
				30.0					
				29.5					
				29.0					
				28.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP104**
Contract:	Mooretown	Easting:	716455.213	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747671.219	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.40	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.30	TOPSOIL.			32.10			0 0 0 0 2 2 1 3 3 4 3 3 4 4 2 3 3 5 8 6 8 10 11 9 10 12 13 15 18 15 10 14 17 20 24 35	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.0 / 31.5 / 31.0		1.00	B		
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.5	30.50				
				30.0		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			29.70				
				29.5 / 29.0 / 28.5 / 28.0 / 27.5					

0.5 / 1.0 / 1.5 / 2.0 / 2.5 / 3.0 / 3.5 / 4.0 / 4.5

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP105**
Contract:	Mooretown	Easting:	716417.438	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747670.268	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.84	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		32.5	32.54			1	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						1	
0.5								1	
				32.0				2	
								1	
1.0						1.00	B	2	
								4	
								5	
				31.5				7	
1.5								7	
								4	
								4	
				31.0				3	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			30.84			3	
								5	
				30.5				3	
								4	
2.5						2.50	B	6	
								10	
								15	
								12	
								15	
								15	
				30.0				11	
	2.70	Obstruction - boulders.			30.14			13	
		Pit terminated at 2.70m						35	
3.0									
				29.5					
3.5									
				29.0					
4.0									
				28.5					
4.5									
				28.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP106**
Contract:	Mooretown	Easting:	716679.917	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747664.805	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	30.07	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		30.0	29.77			0 0 1 1 2 2 1	
1.0	0.70	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.5	29.37			0 1 2 2	
1.5		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		29.0		1.00	B	7 8 12 8 8 9 10 7 7	
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		28.5				20 22 24 29 35	
2.5	2.60	Obstruction - boulders.		28.0	27.97	2.50	B		
3.0		**Pit terminated at 2.60m**		27.5	27.47				
3.5				27.0					
4.0				26.5					
4.5				26.0					
				25.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.80 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP107**
Contract:	Mooretown	Easting:	716521.324	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747661.937	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	31.98	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		31.5	31.68			0 0 1 1 2 2 3 2 3 4 3 6 9 10 9 8 8 10 8 7 11 14 15 12 18 20 24 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		30.5	30.28				
2.0				30.0					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		29.5	29.38	2.50	B		
3.0				29.0					
3.5				28.5					
4.0				28.0					
4.5				27.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP108**
Contract:	Mooretown	Easting:	716406.845	Date:	03/04/2024
Location:	Swords, Co. Dublin	Northing:	747654.459	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.30	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		33.0	33.00			0 0 0 0 1 2 3 2 2 1 1 2 3 4 4 4 6 7 8 9 11 11 10 10 9 10 10 8 9 7 7 7 9 13 8 9 10 7 10 10 11 13 17 35	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.5					
1.0						1.00	B		
1.5				32.0					
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.5	31.30				
2.5				31.0		2.50	B		
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		30.5	30.60				
3.5				30.0					
4.0				29.5					
4.5				29.0					
				28.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP109**
Contract:	Mooretown	Easting:	716705.826	Date:	22/04/2024
Location:	Swords, Co. Dublin	Northing:	747655.180	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	29.68	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.20	Scale:	1:25

Level (mbgl) Depth	Stratum Description	Legend	Level (mOD) Depth:	Samples Depth	Samples Type	Probe	Water Strike
0.30	TOPSOIL.		29.38			0 0 0 0 1 1 2 2 2 2 3	
1.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		28.48	1.00	B	6 7 7 8 9	
2.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		27.58	1.50	B	6 7 7 8 9 10	▼
2.20	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter). Obstruction - boulders. **Pit terminated at 2.20m**		27.48	2.20	B	12 14 22 24 26 27 30 35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.40 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP110**
Contract:	Mooretown	Easting:	716502.755	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747651.885	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.48	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		32.0	32.18			0 0 0 1 2 2 2 2 2 2	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		31.5		1.00	B	3 2 2 1 2 2 3 5 8 25 16 16 12 16 15 14 11 11 14 15 13 10 14 11 13 12 12 13 15 16 19 20 35	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.0	30.68				
2.0				30.5					
2.5				30.0		2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		29.5	29.68				
3.5				29.0					
4.0				28.5					
4.5				28.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP111**
Contract:	Mooretown	Easting:	716389.429	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747641.773	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.67	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		33.5	33.37	1.00	B	0 0 0 2 3 3 4 3 2 3 1 2 2 3 4 4 5 6 6 6 5 7 8 11 12 11 12 9 9 9 9 8 7 10 11 14 15 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.0					
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.5	31.77	2.50	B		
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		32.0	31.07				
				31.5					
				31.0					
				30.5					
				30.0					
				29.5					
				29.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP112**
Contract:	Mooretown	Easting:	716475.776	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747641.655	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	32.85	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 1 2 2 2 3 2 1 2 3 2 3 4 3 2 4 3 2 5 7 8 11 13 16 20 14 15 13 9 10 8 7 11 14 13 15 16 15 16 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.5	32.55	1.00	B		
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		31.5	31.15	2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		30.5	30.15				

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP113**
Contract:	Mooretown	Easting:	716447.513	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747632.418	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.26	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		33.0	32.96			0 0 0 3 2 2 2 1 2 2 2 2 3 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.5		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.0	31.56			7 9 12 15 17 15 15 14	
2.0				31.5					
2.5				31.0		2.50	B	13 14 12 18 15 11 12 13 15 15 35	
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		30.5	30.56				
3.5				30.0					
4.0				29.5					
4.5				29.0					
				28.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP114**
Contract:	Mooretown	Easting:	716464.868	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747616.943	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.54	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		33.5	33.34			0	
	0.50	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.0	33.04			0	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		32.5		1.00	B	0	
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.0	31.84			1	
2.0				31.5		2.00	B	1	
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		31.0	30.94			2	
3.0				30.5				2	
3.5				30.0				2	
4.0				29.5				4	
4.5				29.0				4	
								4	
								5	
								5	
								5	
								5	
								6	
								6	
								7	
								7	
								7	
								8	
								9	
								11	
								10	
								12	
								14	
								13	
								16	
								30	
								32	
								35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP115**
Contract:	Mooretown	Easting:	716418.025	Date:	04/04/2024
Location:	Swords, Co. Dublin	Northing:	747624.798	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.83	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		33.5	33.53			0 0 0 2 3 2 3 3 2 2 3 4 3 2 3 4 5 3 6 8 7 10 9 7 5 4 6 8 10 13 11 10 14 13 20 17 18 24 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.0		1.00	B		
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.5	32.23				
2.0				32.0					
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		31.5	31.13	2.50	B		
3.0				31.0					
3.5				30.5					
4.0				30.0					
4.5				29.5					
				29.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP116**
Contract:	Mooretown	Easting:	716479.002	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747609.643	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	33.73	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		33.5	33.53			1	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0 0 0 1 1 1	
1.0	0.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.0	32.93	1.00	B	2 2 4 5 6 8 7 7 5 4	
1.5				32.5					
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.0	31.93	2.00	B	7 7 6 6 5 5	
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		31.5	31.13			12 13 14 20	
3.0				31.0				22 24 30 31 29	
3.5				30.5				35	
4.0				30.0					
4.5				29.5					
				29.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP117**
Contract:	Mooretown	Easting:	716441.685	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747604.018	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.22	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.0	33.92			0 0 1 1 1 1 2 2 3 3 2 2 2 2 5 5 7 11 8 9 9 16 13 12 15 15 16 17 35	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.5		1.00	B		
1.5				33.0					
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.5	32.22				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		32.0	31.62	2.50	B		
3.0				31.5					
3.5				31.0					
4.0				30.5					
4.5				30.0					
				29.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP118**
Contract:	Mooretown	Easting:	716413.144	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747600.364	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.73	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0	
	0.20							0	
		Firm light brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5	34.53			1	
0.5								1	
	0.60				34.13			1	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0				2	
								2	
								3	
								4	
1.0						0.90	B	5	
								8	
				33.5				7	
								7	
								7	
1.5						1.50	B	5	
								7	
								7	
	1.80			33.0	32.93			4	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						5	
2.0						2.00	B	4	
								7	
				32.5				6	
								4	
								5	
2.5								12	
	2.50	Obstruction - boulders.			32.23			19	
		Pit terminated at 2.50m						18	
				32.0				23	
								25	
3.0								30	
								32	
								35	
3.5				31.5					
				31.0					
4.0									
				30.5					
4.5									
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP119**
Contract:	Mooretown	Easting:	716457.422	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747597.382	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.30	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		34.0	34.00			1 2 1 1 2 1 1 2 3 2 3 3 4 5 7 8 7 7 11 10 8 12 15 14 16 12 13 14 17 18 35	
0.5		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.5		1.00	B		
1.0									
1.5				33.0					
2	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.5	32.50	2.00	B		
2.5				32.0					
3	3.00	**Pit terminated at 3.00m**		31.5	31.30				
3.5				31.0					
4				30.5					
4.5				30.0					
				29.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP120**
Contract:	Mooretown	Easting:	716393.938	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747596.229	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.83	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.5	34.53			0 0 1 2 1 2 2 3 5 8 6 7 7 7 5 6 7 6 7 5 6 5 11 12 20 23 24 28 29 30 28 35	
1.0	1.10	Firm light brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0	33.73	1.20	B		
1.5	1.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.5	33.03				
2.0	2.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.0	32.23	2.50	B		
2.5		Obstruction - boulders. **Pit terminated at 2.60m**		32.5					
3.0				32.0					
3.5				31.5					
4.0				31.0					
4.5				30.5					
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP121**
Contract:	Mooretown	Easting:	716372.457	Date:	16/04/2024
Location:	Swords, Co. Dublin	Northing:	747594.059	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.09	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		35.0	34.79			1	
1.0		Firm light brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5		1.00	B	0 0 1 2 2 2 3 5 4	
1.5	1.20	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0	33.89	1.50	B	5 7 8 7 6 7	
2.0	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	33.39			5 5 7 4 6 6 5	
2.5				33.0		2.50	B	7 9 12 20 25 27 29 35	
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		32.5	32.29				
3.5				32.0					
4.0				31.5					
4.5				31.0					
				30.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP122**
Contract:	Mooretown	Easting:	716434.654	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747589.162	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.64	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.5	34.34			0 0 0 1 1 2 2 2 2 2 1 1 3 4 4 7 8 8 16 23 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0		1.00	B		
1.5				33.5					
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.0	32.84				
2.5	2.50	Obstruction - boulders.		32.5	32.14	2.50	B		
3.0		**Pit terminated at 2.50m**		32.0					
3.5				31.5					
4.0				31.0					
4.5				30.5					
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP123**
Contract:	Mooretown	Easting:	716405.981	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747582.256	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.34	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		38.0	38.04	1.00	B	0, 0, 0, 2, 3, 3, 2, 3, 3, 4, 4, 3, 3	
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5					
1.0									
1.5				37.0				8, 8, 11, 13, 14, 15, 16	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5	36.34			13, 19, 13, 10	
2.5				36.0		2.50	B	8, 10, 13, 15, 18	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		35.5	35.64			16, 16, 19, 23, 35	
3.0									
3.5				35.0					
4.0				34.5					
4.5				34.0					
				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP124**
Contract:	Mooretown	Easting:	716466.075	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747582.846	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.62	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.5	34.32			1 1 1 1 3 1 1 1 2 2 3 2 3 3 4 5 6 6 8 10 10 12 11 11 14 16 15 13 15 15 14 15 17 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	32.92				
2.0				33.0					
2.5				32.5		2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		32.0	31.62				
3.5				31.5					
4.0				31.0					
4.5				30.5					
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.40 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP125**
Contract:	Mooretown	Easting:	716495.984	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747580.740	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.28	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.			34.08			1	
	0.20	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0				2	
0.5								2	
	0.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			33.58			2	
				33.5				2	
1.0						1.00	B	2	
								2	
								2	
								2	
								2	
								2	
								2	
								3	
								3	
								4	
								4	
				33.0				6	
								6	
1.5								7	
								8	
								8	
	1.80	Obstruction - boulders.		32.5	32.48			9	
								4	
2.0						2.00	B	6	
								7	
								8	
				32.0				7	
								9	
2.5								16	
								14	
								15	
				31.5				18	
								19	
								20	
3.0	3.00	**Pit terminated at 3.00m**			31.28			29	
								35	
3.5				31.0					
				30.5					
4.0									
				30.0					
4.5									
				29.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP126**
Contract:	Mooretown	Easting:	716386.131	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747579.306	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.51	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0		TOPSOIL.		35.5	35.21			0 0 0 3 2 2 2 2 3 3 3 3 3 3	
0.5	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0					
1.0				34.5		1.00	B		
1.5				34.0				9 17 19 11 12 15 15 13 11 7 8 13 16 15 15 18 35	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	33.51				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		33.0	32.91	2.50	B		
3.0				32.5					
3.5				32.0					
4.0				31.5					
4.5				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP127**
Contract:	Mooretown	Easting:	716402.106	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747563.649	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.65	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		35.5	35.35			2	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0		1.00	B	1 3 4 3 3 5 3 3 2 2 3 3	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.5 34.0	33.85			8 8 9 10 11 11	
2.0 2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		33.5	33.05	2.50	B	14 14 13 15 13 12 15 16 19 15	
3.0 3.5 4.0 4.5				33.0 32.5 32.0 31.5 31.0				21 19 23 35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP128**
Contract:	Mooretown	Easting:	716450.151	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747560.404	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.36	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 1 2 1 1 2 2 1 2 1 2 3 3 3 4 5 5 7 7 11 13 16 16 18 30 35	
	0.30	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0	35.06	1.00	B		
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	33.56	2.00	B		
	3.00	**Pit terminated at 3.00m**		32.5	32.36				

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP129**
Contract:	Mooretown	Easting:	716381.956	Date:	08/04/2024
Location:	Swords, Co. Dublin	Northing:	747557.503	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.93	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						1	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.63			2 3 3 3 3 2 2 4 3	
0.5				35.5					
1.0				35.0		1.00	B	5 6 7 7	
1.5				34.5				8 10 13 12 11	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	33.93			13 14 14	
2.5				33.5		2.50	B	19 19 18 28	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			33.23			35	
3.0				33.0					
3.5				32.5					
4.0				32.0					
4.5				31.5					
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP130**
Contract:	Mooretown	Easting:	716475.187	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747553.964	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.04	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		35.0				0	
	0.30				34.74			0	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0	
0.5								1	
				34.5				2	
								1	
								1	
								2	
								2	
1.0						1.00	B	3	
				34.0				2	
								2	
								3	
								4	
1.5								4	
				33.5				7	
								8	
	1.80				33.24			11	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						12	
2.0						2.00	B	10	
				33.0				8	
								11	
								14	
								13	
2.5								14	
				32.5				15	
								16	
								13	
								17	
3.0	3.00				32.04			15	
		Pit terminated at 3.00m		32.0				19	
								35	
3.5									
				31.5					
4.0				31.0					
4.5				30.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP131**
Contract:	Mooretown	Easting:	716424.714	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747557.937	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.72	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		35.5	35.42			0 1 1 1 1 1 1	
0.5	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0		1.00	B	3 4 3 5 6 7 8 7 7 7 6 7 6 5 6 8 9 12	
1.0				34.5					
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	34.02				
2.0				33.5		2.50	B	20 25 26 25 26 29 32 35	
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		33.0	33.12				
3.0				32.5					
3.5				32.0					
4.0				31.5					
4.5				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP132**
Contract:	Mooretown	Easting:	716502.424	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747552.286	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.40	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.0	34.10			1 2 2 1 1 2 3 4 5	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		33.5		1.00	B	3 3 6 8 7	
1.5	1.70			33.0	32.70			7 6 4	▼
2.0		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		32.5		2.00	B	5 5 7 6 4 4 5 5	
2.5				32.0				14 22 20 24	
3.0	3.00	**Pit terminated at 3.00m**		31.5	31.40			23 21 32 35	
3.5				31.0					
4.0				30.5					
4.5				30.0					
				29.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	1.60 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP133**
Contract:	Mooretown	Easting:	716494.790	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747537.923	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.99	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						1 1 2 3 2 3 4 2 2 3 6 7 7 7 5 6 4 4 3 6 5 6 4 5 12 20 25 23 21 22 22 19 35	
	0.30				34.69				
0.5		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5					
1.0				34.0		1.00	B		
	1.40				33.59				
1.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5					
2.0				33.0		2.00	B		
2.5				32.5		2.80	B		
3.0	3.00	**Pit terminated at 3.00m**		32.0	31.99				
3.5				31.5					
4.0				31.0					
4.5				30.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP134**
Contract:	Mooretown	Easting:	716461.536	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747533.659	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.69	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0	
	0.20			35.5	35.49			0	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0	
	0.40				35.29			1	
0.5								1	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0				2	
								2	
								3	
								2	
1.0						1.00	B	3	
								2	
				34.5				3	
								3	
								4	
1.5	1.50				34.19			5	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0				8	
								11	
								7	
								9	
								8	
2.0						2.00	B	13	
						2.00	B	15	
				33.5				14	
								15	
2.5								12	
								11	
				33.0				13	
	2.80				32.89			15	
		Obstruction - boulders.						14	
		Pit terminated at 2.80m						18	
3.0								19	
								20	
				32.5				20	
								35	
3.5									
				32.0					
4.0									
				31.5					
4.5									
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP135**
Contract:	Mooretown	Easting:	716410.060	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747532.522	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.22	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.30	TOPSOIL.		36.0	35.92			0 0 0 1 1 2 1 2 2 1 1 1 3 3 2 4 4 7 7 9 11 12 12 13 15 13 12 19 13 15 19 21 35	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5		1.00	B		
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	34.32				
				34.5		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		34.0	33.52				
				33.5					
				33.0					
				32.5					
				32.0					
				31.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP136**
Contract:	Mooretown	Easting:	716377.325	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747531.145	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.54	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		36.5				1	
	0.30				36.24			1	
		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0				1	
0.5								2	
								2	
								1	
								1	
								1	
1.0				35.5		1.00	B	2	
								2	
								2	
								2	
1.5								3	
				35.0				2	
								2	
	1.80				34.74			3	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						5	
2.0								7	
				34.5				8	
								9	
								11	
								12	
								10	
2.5								11	
				34.0		2.50	B	12	
								10	
	2.80				33.74			14	
		Obstruction - boulders.						11	
		Pit terminated at 2.80m						13	
3.0								16	
				33.5				18	
								31	
								35	
3.5									
				33.0					
4.0									
				32.5					
4.5									
				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP137**
Contract:	Mooretown	Easting:	716526.930	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747529.179	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.90	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.5	34.60			1 1 1 2 2 2 2 2 2 2 2 2 2	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0		1.00	B		
1.5	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	33.40			4 3 4 3 3 3 6	
2.0				33.0		2.00	B	5 5 10 9 12 10 11	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		32.5	32.20			17 14 28 24 27 35	
3.0				32.0					
3.5				31.5					
4.0				31.0					
4.5				30.5					
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP138**
Contract:	Mooretown	Easting:	716477.935	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747522.083	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.83	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			35.63			0 0 1 2 2 2 2	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5					
0.5									
	0.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.13			1 1	
				35.0					
1.0						1.00	B	3 3	
								4 5	
				34.5				4 5 5	
1.5									
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			34.13			8 8	
				34.0				9 7	
2.0						2.00	B	8	▼
								13 14	
				33.5				12 12	
2.5								13 14	
								13	
				33.0				18	
3.0	3.00	**Pit terminated at 3.00m**			32.83			15 18	
								15 16	
				32.5				15 18	
3.5								35	
				32.0					
4.0									
				31.5					
4.5									
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP139**
Contract:	Mooretown	Easting:	716452.324	Date:	10/04/2024
Location:	Swords, Co. Dublin	Northing:	747523.223	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.95	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		35.5	35.75			0 0 0 1 1 1 1 3 2 4 5 8 9 9 8 6 7 7 6 5 6 8 7 6 21 22 26 28 30 31 35	
0.5	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0	35.35	1.00	B		
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5					
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	34.15	2.00	B		
2.0				33.5	33.45				
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		33.0					
3.0				32.5					
3.5				32.0					
4.0				31.5					
4.5				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP140**
Contract:	Mooretown	Easting:	716387.299	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747517.104	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.76	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		36.5	36.46			2 2 2 2 1 1 1 2 1 1 1 2 3 2 2 3 4 4 5 9 12 11 10 13 15 15 13 14 15 19 19 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0		1.00	B		
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5					
				35.0	34.96				
				34.5		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		34.0	34.06				
				33.5					
				33.0					
				32.5					
				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP141**
Contract:	Mooretown	Easting:	716542.824	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747512.569	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	34.86	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		34.5	34.56			1 1 1 1 1 2 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0		1.00	B	2 2 3 4 4 4 3 3 5 5	
1.5	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5	33.36				
2.0				33.0		2.00	B	10 11 12 14 15 20 27 35	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		32.5	32.16				
3.0				32.0					
3.5				31.5					
4.0				31.0					
4.5				30.5					
				30.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP142**
Contract:	Mooretown	Easting:	716503.870	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747510.766	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.76	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		35.5	35.56			1	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						1	
0.5	0.50	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.26			1	
				35.0				2	
								2	
								2	
								3	
1.0						1.00	B	4	
								3	
								4	
								3	
								3	
				34.5				5	
								6	
1.5								8	
	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			34.16			10	
				34.0				12	
								7	
2.0								9	
								12	
								14	
								15	
				33.5				19	
								24	
2.5								35	
	2.70	Obstruction - boulders.			33.06				
		Pit terminated at 2.70m		33.0					
3.0									
				32.5					
3.5									
				32.0					
4.0									
				31.5					
4.5									
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP143**
Contract:	Mooretown	Easting:	716375.897	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747507.282	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.21	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.0	36.91			0 0 1 1 1 1 2 2 3 2 1 3 2 2 3 5 5 8 9 11 11 11 14 18 13 14 15 15 15 15 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.0					
2.0				35.5	35.51				
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		35.0	34.61	2.50	B		
3.0				34.5					
3.5				34.0					
4.0				33.5					
4.5				33.0					
				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP144**
Contract:	Mooretown	Easting:	716524.953	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747502.296	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.69	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		35.5	35.49			0	
	0.20							0	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.29			1	
	0.40							1	
0.5								2	
								2	
				35.0				1	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						2	
1.0						1.00	B	2	
								2	
				34.5				2	
								3	
	1.40				34.29			3	
1.5		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						4	
								4	
				34.0				3	
								3	
								5	
2.0						2.00	B	6	
								8	
				33.5				11	
								9	
								8	
2.5	2.50	Obstruction - boulders.			33.19			13	
		Pit terminated at 2.50m						14	
				33.0				17	
								14	
								12	
3.0								14	
								21	
				32.5				19	
								28	
								35	
3.5									
				32.0					
4.0									
				31.5					
4.5									
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP145**
Contract:	Mooretown	Easting:	716400.699	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747495.559	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.03	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		36.5	36.73			0 0 0 1 1 2 1 2 2 1 2 2 2 3 5 7 7 8 13 11 13 15 15 17 13 18 15 16 14 13 16 16 17 16 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0		1.00	B		
1.5				35.5					
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	34.93				
2.5	2.60	Obstruction - boulders.		34.5	34.43	2.50	B		
3.0		**Pit terminated at 2.60m**		34.0					
3.5				33.5					
4.0				33.0					
4.5				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP146**
Contract:	Mooretown	Easting:	716570.557	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747493.133	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.38	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		35.0	35.18			1, 1	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						0, 0, 1, 1, 1	
1.0	0.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5	34.58	1.00	B	2, 2, 2, 2, 3, 2, 3, 2, 2	
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	33.78			4, 4, 4	
2.0				33.5		2.00	B	3, 3, 6, 5, 6, 5	
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		33.0	32.78			7, 7, 10, 12, 14, 17, 14	
3.0				32.5					
3.5				32.0				27, 24, 35	
4.0				31.5					
4.5				31.0					
				30.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP147**
Contract:	Mooretown	Easting:	716502.924	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747492.083	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.95	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.			35.75			0 0 1 1 1 2 2 2 2 3 2 3 3 2 4 4 4 3 3 3 6 6 4 5 10 9 10 12 12 17 21 26 35	
	1.10	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			34.85	1.00	B		
	1.50	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			34.45				
	2.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			33.25	2.00	B		
		Obstruction - boulders. **Pit terminated at 2.70m**							

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP148**
Contract:	Mooretown	Easting:	716550.853	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747488.134	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.38	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.			35.18			0 1	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0				0 1 1 1 2 2 3	
0.5	0.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			34.68				
				34.5		1.00	B	2 2 5	
1.0								4 6 6 7	
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	33.78			8 9 10	
				33.5		2.00	B	9 13 14	
2.0								20 18 21	
2.5	2.50	Obstruction - boulders. **Pit terminated at 2.50m**		33.0	32.88			28 35	
3.0				32.5					
3.5				32.0					
4.0				31.5					
4.5				31.0					
				30.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	2.30 Medium	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP149**
Contract:	Mooretown	Easting:	716475.584	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747482.272	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.83	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			36.63			0 0 0	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5				2 2 2	
0.5								3 3 3	
	0.90			36.0	35.93			3 2 2	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.00	B	3 3 4	
1.5				35.5				4 3 5	
				35.0				6 4 4	
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			34.83			8 8 12	
2.5				34.5		2.50	B	13 13 16	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			34.13			16 18 19	
3.0				34.0				35	
				33.5					
3.5									
				33.0					
4.0									
				32.5					
4.5									
				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP150**
Contract:	Mooretown	Easting:	716453.694	Date:	11/04/2024
Location:	Swords, Co. Dublin	Northing:	747484.226	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.11	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.		37.0	36.91			0 0 0 1 1 1 1 2 2 2 3 2 3 1 1 1 3 4 6 6 6 8 8 9 10 16 35	
0.5		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5					
1.0	1.00				36.11	1.00	B		
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0					
1.5				35.5					
2.0	2.10			35.0	35.01				
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).				2.50	B		
2.5				34.5					
3.0	3.00	**Pit terminated at 3.00m**			34.11				
3.5				34.0					
				33.5					
4.0				33.0					
4.5				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP151**
Contract:	Mooretown	Easting:	716372.106	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747478.059	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.10	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		38.0	37.80			0 0 0 1 2 2 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5		1.00	B	1 1 1 1 2 2 3	
1.5	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.0				4 8 9 7 8 10 13	
2.0	2.60	Obstruction - boulders.		36.5	36.20			14 11 15 17 16 19 25	
2.5		**Pit terminated at 2.60m**		36.0		2.50	B	35	
3.0				35.5	35.50				
3.5				35.0					
4.0				34.5					
4.5				34.0					
				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP152**
Contract:	Mooretown	Easting:	716423.824	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747477.048	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.23	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		37.0	36.93			0 0 0 1 2 2 2 3 3 2 1 2 2 4 4 5 5 6 6 8 9 11 13 14 14 11 10 12 13 18 16 19 19 15 17 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5		1.00	B		
	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.0	35.73				
				35.5					
				35.0		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		34.5	34.53				
				34.0					
				33.5					
				33.0					
				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP153**
Contract:	Mooretown	Easting:	716527.050	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747470.503	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.32	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		36.0	36.12			1	
	0.40	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.92			2 2 2 3	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5		1.00	B	2 2 2 2 3 3	
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	34.72			2 2 2 2 3 4	
2.0				34.5		2.00	B	6 6 7 6	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		34.0	33.62			8 8 14 12 15	
3.0				33.5				28 35	
3.5				33.0					
4.0				32.5					
4.5				32.0					
				31.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP154**
Contract:	Mooretown	Easting:	716577.878	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747471.364	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.67	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		35.5	35.37			0 0 0	
	0.30	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.17			1 1 1	
0.5	0.50	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0				2 2 2	
1.0	1.10	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5	34.57	1.00	B	3 4 3 5 7	
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	33.97			4 4 3 3 5	
2.0						2.00	B	6 6 7	
2.5				33.5				15 21 28 35	
3.0	3.00	**Pit terminated at 3.00m**		33.0	32.67				
3.5				32.5					
4.0				32.0					
4.5				31.5					
				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP155**
Contract:	Mooretown	Easting:	716398.540	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747466.969	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.91	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.5	37.61			0 0 1 1 2 2 1 1 1	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0		1.00	B	2 2 3 2 4	
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5	36.31			3 5 5	
2.0				36.0				13 12 8 11 10	
2.5				35.5		2.50	B	13 13 15 14	
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		35.0	35.21			13 13 14 18 19	
3.5				34.5				18 17 20 35	
4.0				34.0					
4.5				33.5					
				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP156**
Contract:	Mooretown	Easting:	716553.960	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747464.506	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.15	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		36.0	35.85			1 1 1 1 2 2 1 2 3 2 2 2 4 4 4 5 6 5 5 7 5 5 10 9 8 11 14 17 14 20 21 28 35	
0.5		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5					
1.0	1.00	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0	35.15	1.00	B		
1.5				34.5					
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.0	34.35	2.00	B		
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		33.5	33.45				
3.0				33.0					
3.5				32.5					
4.0				32.0					
4.5				31.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP157**
Contract:	Mooretown	Easting:	716615.171	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747467.846	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	35.57	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		35.5	35.37			1 1 1 1	
0.5	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.0	35.07			2 2 3 4	
1.0	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.5	34.67	1.00	B	3 3 2 2	
1.5	1.20	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		34.0	34.37			3 3 4 5	
2.0		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		33.5		2.00	B	4 3 5 11 12 12 17 19 35	
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		33.0	32.97				
3.0				32.5					
3.5				32.0					
4.0				31.5					
4.5				31.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.70 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP158**
Contract:	Mooretown	Easting:	716498.893	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747462.740	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.77	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		36.5	36.47			0 0 2 2 2 2 3 3 2 2 2 2 1 1 1 1 4 3 6 6 7 6 6 8 8 12 11 15 16 17 14 20 35	
	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			36.17				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0		1.00	B		
1.5				35.5					
2.0	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	34.87				▼
2.5				34.5		2.50	B		
3.0	2.80	Obstruction - boulders. **Pit terminated at 2.80m**		34.0	33.97				
3.5				33.5					
4.0				33.0					
4.5				32.5					
				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.90 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP159**
Contract:	Mooretown	Easting:	716471.094	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747460.844	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.41	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		37.0	37.21			0 0 0 1 1 2 2 3	
1.0	1.00	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5	36.41	1.10	B	2 2 2 2 2 2 1 1	
1.5	2.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0				3 4 5 6 6 7	
2.0	2.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.31			6 6 8	
2.5		Obstruction - boulders. **Pit terminated at 2.70m**		35.0	34.71	2.50	B	12 14 15 28 35	
3.0				34.5					
3.5				34.0					
4.0				33.5					
4.5				33.0					
				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.60 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP160**
Contract:	Mooretown	Easting:	716413.071	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747450.005	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.17	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		38.0				0 0 0 3	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.87			1 1 2 1 1 3 3 2 4 4 5 6 7 7 9 11 14 15 13 13 15 13 18 19 15 14 17 18 18 19 35	
0.5				37.5					
1.0				37.0		1.00	B		
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5	36.57				
2.0				36.0					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		35.5	35.57	2.50	B		
3.0				35.0					
3.5				34.5					
4.0				34.0					
4.5				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP161**
Contract:	Mooretown	Easting:	716377.642	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747447.875	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.74	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		38.5	38.44			0 0 0 1 1 2 2 2 3 3	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.0		1.00	B	1 2 4 4 5 5	
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.5				8 8 8 13 11 12 12 14 14	
2.0				37.0	36.94				
2.5				36.5		2.50	B	17 16 18 19 24 21 28 35	
3.0	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		36.0	36.04				
3.5				35.5					
4.0				35.0					
4.5				34.5					
				34.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP162**
Contract:	Mooretown	Easting:	716566.449	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747447.203	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.44	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			36.14			0 0 1 1 2 3 2 3 4 4 3 6 5 5 5 5 6 6 7 6 8 9 10 12 18 19 25 26 23 26 27 30 28 32 35	
	0.30	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0					
0.5									
1.0				35.5		1.00	B		
	1.20	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			35.24				
1.5				35.0		1.50	B		
2.0	2.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.5	34.44				
2.5				34.0		2.50	B		
	2.80	Obstruction - boulders. **Pit terminated at 2.80m**			33.64				
3.0				33.5					
3.5				33.0					
4.0				32.5					
4.5				32.0					
				31.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP163**
Contract:	Mooretown	Easting:	716478.632	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747445.005	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.46	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.0	37.16			0	
1.0	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5	36.96			0	
1.5		Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0		1.00	B	0	
2.0	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.86			0	
2.5				35.0		2.50	B	1	
3.0	3.00	**Pit terminated at 3.00m**		34.5	34.46			2	
3.5				34.0				2	
4.0				33.5				3	
4.5				33.0				3	
				32.5				3	
								3	
								3	
								4	
								4	
								2	
								2	
								2	
								4	
								3	
								3	
								4	
								5	
								5	
								11	
								14	
								13	
								14	
								12	
								15	
								15	
								17	
								35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP164**
Contract:	Mooretown	Easting:	716517.609	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747442.534	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.10	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.		37.0	36.90			0 0 0 1 1 1 2 2 3 3	
0.5		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5					
1.0	1.00	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0	36.10	1.00	B	2 2 3 4	
1.5				35.5				2 2 2 2 3	
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	35.30			5 6 11 10 11	
2.5				34.5		2.50	B	17 24 30 35	
	2.80	Obstruction - boulders.			34.30				
3.0		**Pit terminated at 2.80m**		34.0					
3.5				33.5					
4.0				33.0					
4.5				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP165**
Contract:	Mooretown	Easting:	716605.273	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747439.166	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.47	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		36.0	36.17			0 1 1 1 1 1	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						3 4 5 7	
1.0	0.80	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5	35.67	1.00	B	5 7 7 8	▼
1.5				35.0				7 9 10 11	
2.0	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		34.5	34.67	2.00	B	13 14 8 8 9 7 5	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		34.0	33.77			20 18 15 16	
3.0				33.5				22 24 26 20 20	
3.5				33.0				22 26 35	
4.0				32.5					
4.5				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.90 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP166**
Contract:	Mooretown	Easting:	716360.722	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747437.367	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	39.64	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0		TOPSOIL.		39.5				1	
	0.30				39.34			2	
0.5		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		39.0				2	
								1	
								1	
								1	
								2	
								1	
1.0						1.00	B	2	
								2	
	1.10				38.54			2	
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.5				2	
								3	
1.5								3	
								4	
				38.0				5	
								4	▼
								5	
								6	
2.0						2.00	B	6	
								6	
				37.5				9	
								8	
								12	
2.5								14	▼
								14	
				37.0		2.60	B	16	
								21	
	2.90				36.74			35	
3.0	3.00	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			36.64	3.00	B		
		Pit terminated at 3.00m		36.5					
3.5									
				36.0					
4.0									
				35.5					
4.5									
				35.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.50 Medium	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP167**
Contract:	Mooretown	Easting:	716400.114	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747437.429	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.88	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		38.5	38.58			0 0 0 2 2 1 3 3 1 1 1 2 4 4 5 8 8 7 6 8 8 9 14 16 18 14 13 15 17 18 19 35	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.0		1.00	B		
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.5	37.18				
2.0				37.0					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		36.5	36.28	2.50	B		
3.0				36.0					
3.5				35.5					
4.0				35.0					
4.5				34.5					
				34.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP168**
Contract:	Mooretown	Easting:	716587.247	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747429.771	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.60	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.40	TOPSOIL.		36.5	36.20			0 0 1 1 2 2 3 2 3 4 5 3 7 7 7 8 9 6 4 4 6 8 7 6 5 22 23 25 26 28 22 25 31 32 35	▼
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0					
1.0	0.80	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		35.5	35.80	1.00	B		
1.5	1.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.0	35.20				
2.0				34.5		2.00	B		
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		34.0	34.00				
3.0				33.5					
3.5				33.0					
4.0				32.5					
4.5				32.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.70 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP169**
Contract:	Mooretown	Easting:	716495.895	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747430.310	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.60	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.5	37.30			1	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0		1.00	B	0 1 1 2 2 3 3 3 3 4	
1.5	1.60	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5 36.0	36.00			3 3 3 4 3 3 5 4 4	
2.0				35.5		2.00	B	10 8 12 15 14 13 15 16 18	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		35.0	34.90			35	
3.0				34.5					
3.5				34.0					
4.0				33.5					
4.5				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP170**
Contract:	Mooretown	Easting:	716555.452	Date:	02/01/1900
Location:	Swords, Co. Dublin	Northing:	747427.020	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	36.98	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		36.5	36.68			0 1 1 1 1 2 4 6 7 8	
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.0		1.00	B	5 7 6 7 8 6 4 5 4 7 8 9 6 7 12 13 18 20 22 26 29 35	
1.5	1.40	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.58				
2.0				35.0					
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		34.5	34.38	2.50	B		
3.0				34.0					
3.5				33.5					
4.0				33.0					
4.5				32.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP171**
Contract:	Mooretown	Easting:	716435.832	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747423.071	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.47	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.			38.27			0 0 1 2 1 1 1 2 3 4 5 7 5 5 8 7 6 4 5 4 7 8 9 6 7 12 20 22 28 32 35	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.0					
0.5	0.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.77				
1.0	1.00	Firm grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5	37.47	1.10	B		
1.5				37.0					
	1.90	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5	36.57				
2.0									
2.5				36.0		2.50	B		
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**			35.77				
3.0				35.5					
3.5				35.0					
4.0				34.5					
4.5				34.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP172**
Contract:	Mooretown	Easting:	716384.660	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747421.203	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	39.27	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		39.0	38.97			1 1 1 1 2 2 2 2 1 2 2 2 2 3 3 3 5 6 8 9 9 11 13 15 18 17 21 19 35	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.5		1.00	B		
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		38.0	37.57				
	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		37.5		2.50	B		
				37.0	36.67				
				36.5					
				36.0					
				35.5					
				35.0					
				34.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP173**
Contract:	Mooretown	Easting:	716404.875	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747420.976	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	39.04	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		39.0				0	
								0	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			38.74			1	
0.5				38.5				2	
								1	
								1	
								2	
								2	
								1	
1.0								1	
				38.0		1.00	B	2	
								3	
								3	
								3	
1.5								5	
				37.5				6	
								6	
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			37.24			7	
								9	
2.0								11	
				37.0				10	
								13	
								15	
								19	
								18	
2.5						2.50	B	17	
				36.5				35	
	2.80	Obstruction - boulders.			36.24				
		Pit terminated at 2.80m							
3.0				36.0					
3.5				35.5					
4.0				35.0					
4.5				34.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP174**
Contract:	Mooretown	Easting:	716471.609	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747417.349	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.12	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.00	TOPSOIL.		38.0	37.92			0 0 1 1 1 1 2 2 3 2 3 3 2 2 2 3 4 4 3 5 4 5 5 6 12 12 13 11 14 15 18 25 35	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.72				
0.5	0.40			37.5					
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.12				
1.0	1.00			37.0		1.10	B		
		Firm grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.							
1.5				36.5					
	1.90				36.22				
2.0		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.0		2.00	B		
2.5						2.50	B		
				35.5					
3.0	3.00	**Pit terminated at 3.00m**			35.12				
3.5				35.0					
				34.5					
4.0				34.0					
4.5				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.40 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP175**
Contract:	Mooretown	Easting:	716365.435	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747410.436	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	39.91	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		39.5	39.61			1 0 1 1 1 1 2 2 1	
1.0		Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		39.0		1.00	B	2 2 2 4 4	
1.5	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		38.5	38.21			3 5 5 5 8 11 17 18 21 17	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		38.0	37.21	2.50	B	14 15 14 16 19 21 35	
3.0				37.5					
3.5				37.0					
4.0				36.5					
4.5				36.0					
				35.5					
				35.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP176**
Contract:	Mooretown	Easting:	716454.234	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747408.877	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.55	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.		38.5	38.35			0 0 0 0 2 2 3 1 3 3 4 3 2 3 3 4 3 3 2 5 4 3 3 4 5 13 15 15 16 35	
	0.40	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.15					
0.5				38.0					
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.00	B		
1.0				37.5	37.45				
	1.10	Firm grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.				1.50	B		▼
1.5				37.0					
	1.70	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.85					
2.0				36.5		2.00	B		
2.5				36.0					
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		35.85					
3.0				35.5					
3.5				35.0					
4.0				34.5					
4.5				34.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.60 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP177**
Contract:	Mooretown	Easting:	716590.925	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747405.336	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.48	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.80	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.			37.28			1	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0				0	
0.5	0.60	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			36.88			0	
								2	
								2	
								1	
								1	
								3	
								4	
1.0				36.5		1.00	B	6	
								8	
								7	
								7	
	1.30				36.18			5	
		Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						8	
1.5				36.0		1.50	B	7	
	1.60				35.88			6	
		Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						6	
								4	
2.0				35.5		2.00	B	5	
								5	
								8	
								7	
								7	
2.5				35.0				15	
								16	
								20	
								22	
	2.80				34.68			24	
		Obstruction - boulders.						28	
3.0		**Pit terminated at 2.80m**		34.5				21	
								32	
								34	
								35	
3.5				34.0					
4.0				33.5					
4.5				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP178**
Contract:	Mooretown	Easting:	716541.294	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747405.334	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.66	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.5	37.36			0 0 0 1 1 2 2 3 3	
1.0	0.90	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0	36.76	1.00	B	4 4 3 4 3 2 3 3	
1.5	1.70	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5				5 5 4 5 4 7 6	▼
2.0	2.70	Stiff light grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.0	35.96			12 13 16 17 17 18 20 35	
2.5		Obstruction - boulders. **Pit terminated at 2.70m**		35.5		2.50	B		
3.0				35.0	34.96				
3.5				34.5					
4.0				34.0					
4.5				33.5					
				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.70 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP179**
Contract:	Mooretown	Easting:	716419.163	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747412.237	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.89	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		38.5	38.69			0 0 0 2 2 1 1 2 2 3	
	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			38.29				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.0		1.00	B	1 3 3 4 5 7 8 7 8 8 9	▼
2.0	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.5	36.79			13 12 11 15 13 18 17 16 20	
2.5	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		37.0	36.19	2.50	B	35	
3.0				36.5					
3.5				36.0					
4.0				35.5					
4.5				35.0					
				34.5					
				34.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.90 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP180**
Contract:	Mooretown	Easting:	716513.665	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747403.918	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.99	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 0 1 1 2 2 3 3 4 3 3 3 18 25 11 4 3 3 3 5 6 8 8 11 12 14 15 35	
	0.30	Firm grey brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.69				
0.5				37.5					
1.0				37.0		1.00	B		
1.5	1.50	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5	36.49	1.60	B		
	1.80	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			36.19				
2.0				36.0		2.00	B		
	2.40	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to subangular of limestone.			35.59				
2.5				35.5		2.50	B		
3.0	3.00	**Pit terminated at 3.00m**		35.0	34.99				
3.5				34.5					
4.0				34.0					
4.5				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.40 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP181**
Contract:	Mooretown	Easting:	716390.832	Date:	09/04/2024
Location:	Swords, Co. Dublin	Northing:	747409.533	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	39.14	Logged By:	D.Monaghan
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.		39.0				1 1 2 2 2	
	0.30	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			38.84				
0.5				38.5				1 1 2 2 1	
1.0						1.00	B	1 3 2	
1.5				38.0				3 3 3	
	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.5	37.34			4 5 5	
2.0				37.0				8 11 9 12	
2.5						2.50	B	8 9 9	
	2.70	Obstruction - boulders. **Pit terminated at 2.70m**		36.5	36.44			13 12 14 15	
3.0				36.0				17 18 35	
3.5				35.5					
4.0				35.0					
4.5				34.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP182**
Contract:	Mooretown	Easting:	716487.803	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747400.513	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.28	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.20	TOPSOIL.			38.08			0 0 2 1 2 2 3 3 2 2	
0.5	0.50	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		38.0	37.78				
		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5		1.00	B	3 3 2 2 3 3 4 4 5	
1.0				37.0					
1.5	1.50	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).			36.78			3 2 4 3 3 3 4 4 5 5 4	▼
2.0				36.5		2.00	B		
2.5	2.60	Obstruction - boulders. **Pit terminated at 2.60m**		36.0	35.68			8 11 14 16 18 35	
3.0				35.5					
3.5				35.0					
4.0				34.5					
4.5				34.0					
				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.50 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP183**
Contract:	Mooretown	Easting:	716519.505	Date:	12/04/2024
Location:	Swords, Co. Dublin	Northing:	747387.909	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.17	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.50	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		38.0	37.97			0 0 0 2 2 1 2 2 5 4 4 3 3 2 2 2 2 2 2 3 3 5 3 4 5 5 8 13 15 16 19 35	
	0.40	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.77				
1.0		Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5		1.00	B		
1.5	1.80	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		37.0					
2.0	2.20	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to subangular of limestone.		36.5	36.37	2.00	B		
2.5	2.50	Obstruction - boulders.		36.0	35.97	2.40	B		
3.0		**Pit terminated at 2.50m**		35.5	35.67				
3.5				35.0					
4.0				34.5					
4.5				34.0					
				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	2.20 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP184**
Contract:	Mooretown	Easting:	716579.415	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747388.695	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.54	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.10	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		37.5	37.34			0	
0.5	0.60	Firm light grey brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0	36.94			0 0 0 2 2 1	
1.0		Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5		1.00	B	2 1 3 2 1 2 1	▼
1.5				36.0				2 3 2	
2.0	1.80	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.74 35.44	2.00	B	2 2 2 2 4 3	
2.5	2.10	Obstruction - boulders. **Pit terminated at 2.10m**		35.0				6 6 4 5 5	
3.0				34.5				8 8 10 15 14	
3.5				34.0				16 15 35	
4.0				33.5					
4.5				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	0.90 Medium	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP185**
Contract:	Mooretown	Easting:	716545.608	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747381.561	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.96	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		37.5	37.66			0 1 1 2 3	
1.0	0.60	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0	37.36			2 3 4 3 6	
1.5		Firm light grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5		1.00	B	8 7 7 5 6 7	
2.0				36.0				4 6 5 4 7 6	
2.5	2.50	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.46	2.60	B	4 5 12 20 25	▼
3.0	3.00	**Pit terminated at 3.00m**		35.0	34.96			23 31 32 35	
3.5				34.5					
4.0				34.0					
4.5				33.5					
				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.50 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP186**
Contract:	Mooretown	Easting:	716578.927	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747370.003	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.76	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.60	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0	
	0.20	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.			37.56			0	
0.5	0.60	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5	37.16			0	
								1	
								1	
				37.0				2	
1.0						1.00	B	1	
								2	
								6	
								6	
	1.30	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.5	36.46			5	▼
								4	
1.5								5	
								5	
				36.0				6	
								7	
								7	
2.0						2.00	B	7	
								8	
	2.20	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.56			4	▼
								5	
								5	
2.5						2.50	B	6	
	2.60	Obstruction - boulders.			35.16			20	
		Pit terminated at 2.60m						22	
				35.0				24	
								26	
3.0								30	
								28	
								27	
				34.5				32	
								35	
3.5									
				34.0					
4.0									
				33.5					
4.5									
				33.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	1.30 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP187**
Contract:	Mooretown	Easting:	716555.308	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747365.137	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.24	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 2.70	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		38.0	37.94			0 0 1 1 1 2 2 1 1 2 2 3 2 3 3 3 3 4 4 3 5 4 8 7 11 13 15 15 17 19 35	
	0.70	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5	37.54				
1.0		Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0		1.00	B		
1.5				36.5					
2.0									
2.5	2.50			36.0	35.74				▼
	2.70	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		35.5	35.54	2.60	B		
3.0		Obstruction - boulders.							
		Pit terminated at 2.70m		35.0					
3.5				34.5					
4.0				34.0					
4.5				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - boulders.	Pit walls stable.	2.50 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP188**
Contract:	Mooretown	Easting:	716535.833	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747370.599	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	38.31	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		38.0	38.01			1, 1, 0, 1, 1, 2, 2, 2	
		Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5	37.51			3, 2, 2, 3, 3, 3, 4, 3	
1.0	0.80	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.0		1.00	B		
1.5	1.60	Firm dark grey slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		36.5	36.71			5, 4, 4, 5, 4, 7, 5	
2.0						2.00	B		
2.5	2.60	Stiff grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).		36.0	35.71			10, 11, 13, 15, 17, 17, 19	▼
3.0	3.00	**Pit terminated at 3.00m**		35.5	35.31	2.80	B	35	
3.5				35.0					
4.0				34.5					
4.5				34.0					
				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	2.60 Rapid	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 6269	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP189**
Contract:	Mooretown	Easting:	716576.718	Date:	15/04/2024
Location:	Swords, Co. Dublin	Northing:	747347.366	Excavator:	JCB 3CX
Client:	Fingal County Council	Elevation:	37.98	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.50 x 0.50 x 3.00	Scale:	1:25

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
		TOPSOIL.						0 0 0	
	0.30				37.68			1	
0.5	0.50	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.		37.5	37.48			1 1	
		Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						2 2	
1.0				37.0		1.00	B	3 4 5 5	
	1.30				36.68			9	▼
		Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles are angular to subangular of limestone.						10 10 11 12 14	
1.5	1.70			36.5	36.28	1.50	B		
		Stiff dark grey slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of limestone. Cobbles and boulders are angular to subangular of limestone (up to 300mm diameter).						6 6 4 4 4 5	
2.0				36.0					
2.5				35.5		2.50	B	13 16 18 17 20	
3.0	3.00	**Pit terminated at 3.00m**		35.0	34.98			22 22 25 23 30	
3.5				34.5				35	
4.0				34.0					
4.5				33.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	1.30 Slow	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

TP001 Sidewall

TP001 Spoil

TP002 Sidewall

TP002 Spoil

TP003 Sidewall

TP003 Spoil

TP004 Sidewall

TP004 Spoil

TP005 Sidewall

TP005 Spoil

TP006 Sidewall

TP006 Spoil

TP007 Sidewall

TP007 Spoil

TP008 Sidewall

TP008 Spoil

TP009 Sidewall

TP009 Spoil

TP010 Sidewall

TP010 Spoil

TP011 Sidewall

TP011 Spoil

TP012 Sidewall

TP012 Spoil

TP013 Sidewall

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TP015 Sidewall

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TP018 Sidewall

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TP024 Sidewall

TP024 Spoil

TP025 Sidewall

TP025 Spoil

TP026 Sidewall

TP026 Spoil

TP027 Sidewall

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TP028 Sidewall

TP028 Spoil

TP029 Sidewall

TP029 Spoil

TP030 Sidewall

TP030 Spoil

TP031 Sidewall

TP031 Spoil

TP032 Sidewall

TP032 Spoil

TP033 Sidewall

TP033 Spoil

TP034 Sidewall

TP034 Spoil

TP035 Sidewall

TP035 Spoil

TP036 Sidewall

TP036 Spoil

TP037 Sidewall

TP037 Spoil

TP038 Sidewall

TP038 Spoil

TP039 Sidewall

TP039 Spoil

TP040 Sidewall

TP040 Spoil

TP041 Sidewall

TP041 Spoil

TP042 Sidewall

TP042 Spoil

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TP043 Spoil

TP044 Sidewall

TP045 Spoil

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TP068 Sidewall

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TP070 Sidewall

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TP071 Sidewall

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TP076 Spoil

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TP081 Sidewall

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TP100 Sidewall

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TP101 Sidewall

TP101 Spoil

TP102 Sidewall

TP102 Spoil

TP103 Sidewall

TP103 Spoil

TP104 Sidewall

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TP105 Sidewall

TP105 Spoil

TP106 Sidewall

TP106 Spoil

TP107 Sidewall

TP107 Spoil

TP108 Sidewall

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TP109 Sidewall

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TP110 Sidewall

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TP111 Sidewall

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TP116 Spoil

TP117 Sidewall

TP117 Spoil

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TP151 Sidewall

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TP152 Sidewall

TP152 Spoil

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TP153 Spoil

TP154 Sidewall

TP154 Spoil

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TP156 Spoil

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TP158 Spoil

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TP160 Sidewall

TP160 Spoil

TP161 Sidewall

TP161 Spoil

TP162 Sidewall

TP162 Spoil

TP163 Sidewall

TP163 Spoil

TP164 Sidewall

TP164 Spoil

TP165 Sidewall

TP165 Spoil

TP166 Sidewall

TP166 Spoil

TP167 Sidewall

TP167 Spoil

TP168 Sidewall

TP168 Spoil

TP169 Sidewall

TP169 Spoil

TP170 Sidewall

TP170 Spoil

TP171 Sidewall

TP171 Spoil

TP172 Sidewall

TP172 Spoil

TP173 Sidewall

TP173 Spoil

TP174 Sidewall

TP174 Spoil

TP175 Sidewall

TP175 Spoil

TP176 Sidewall

TP176 Spoil

TP177 Sidewall

TP177 Spoil

TP178 Sidewall

TP178 Spoil

TP179 Sidewall

TP179 Spoil

TP180 Sidewall

TP180 Spoil

TP181 Sidewall

TP181 Spoil

TP182 Sidewall

TP182 Spoil

TP183 Sidewall

TP183 Spoil

TP184 Sidewall

TP184 Spoil

TP185 Sidewall

TP185 Spoil

TP186 Sidewall

TP186 Spoil

TP187 Sidewall

TP187 Spoil

TP188 Sidewall

TP188 Spoil

TP189 Sidewall

TP189 Spoil

Appendix 3

Soakaway Test Results and Photographs

SOAKAWAY TEST

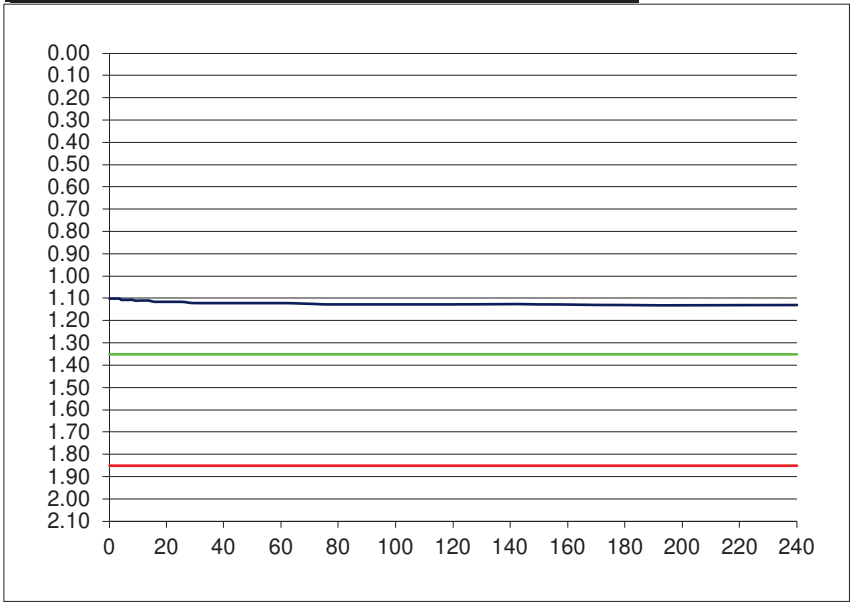
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA01
Date:	02/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.80	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.80	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.11
4.5	1.11
5	1.11
6	1.11
7	1.11
8	1.11
9	1.11
10	1.11
12	1.11
14	1.11
16	1.12
18	1.12
20	1.12
25	1.12
30	1.12
40	1.12
50	1.12
60	1.12
75	1.13
90	1.13
120	1.13
150	1.13
180	1.13
240	1.13

Pit Dimensions (m)		
Length (m)	3.50	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.05**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**6.20**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** / **m/min** or **Fail** / **m/s**

SOAKAWAY TEST

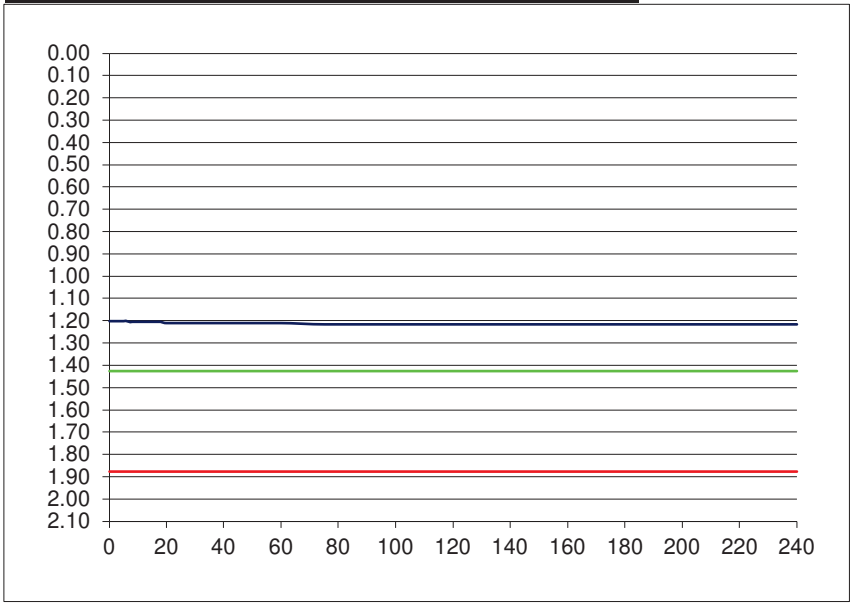
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA02
Date:	23/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.40	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.40	2.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.20
1.5	1.20
2	1.20
2.5	1.20
3	1.20
3.5	1.20
4	1.20
4.5	1.20
5	1.20
6	1.20
7	1.21
8	1.21
9	1.21
10	1.21
12	1.21
14	1.21
16	1.21
18	1.21
20	1.21
25	1.21
30	1.21
40	1.21
50	1.21
60	1.21
75	1.22
90	1.22
120	1.22
150	1.22
180	1.22
240	1.22

Pit Dimensions (m)		
Length (m)	3.80	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**1.03**	m3
Area of Drainage	**18.48**	m2
Area of Drainage (75%-25%)	**6.24**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

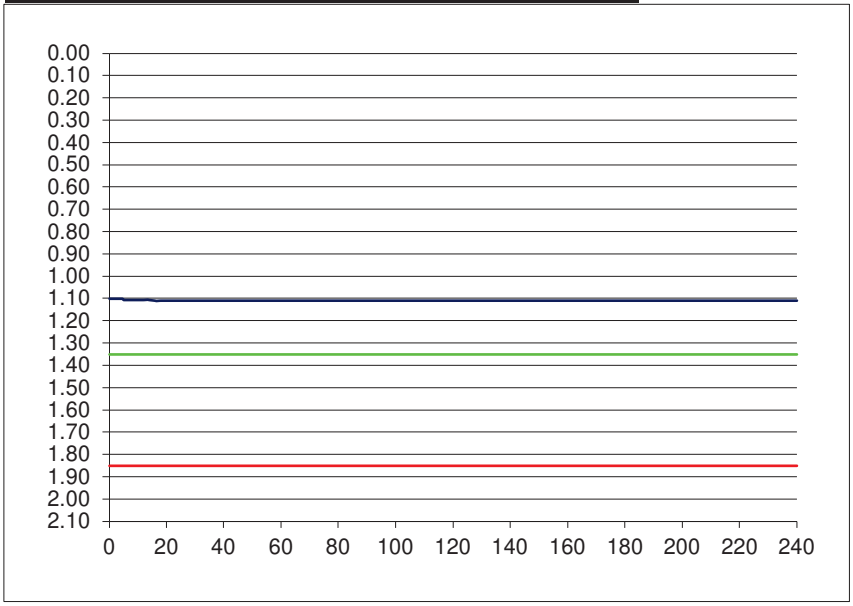
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA03
Date:	23/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.50	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.
1.50	2.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.11
6	1.11
7	1.11
8	1.11
9	1.11
10	1.11
12	1.11
14	1.11
16	1.11
18	1.11
20	1.11
25	1.11
30	1.11
40	1.11
50	1.11
60	1.11
75	1.11
90	1.11
120	1.11
150	1.11
180	1.11
240	1.11

Pit Dimensions (m)		
Length (m)	3.50	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.05**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**6.20**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

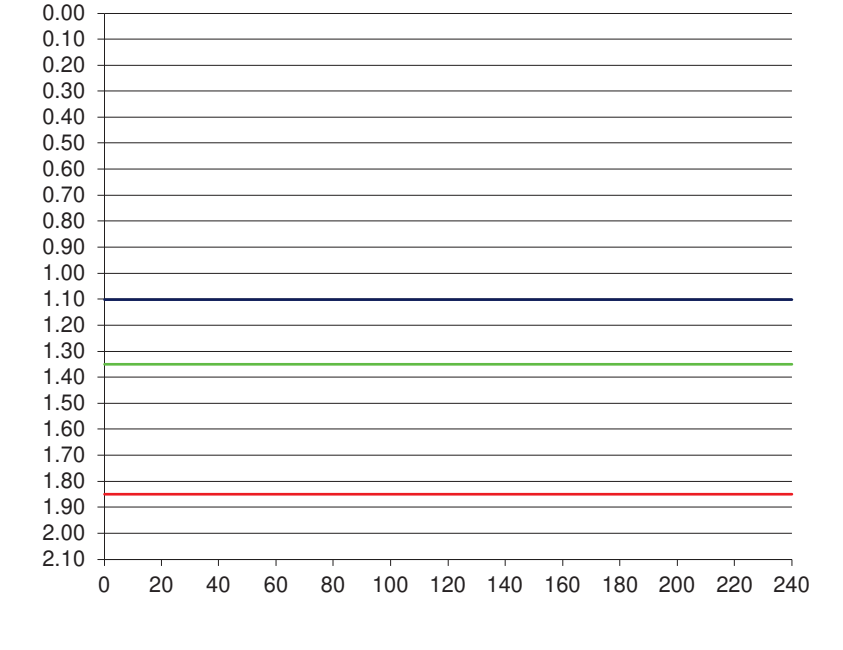
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA04
Date:	29/03/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	2.10	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.10
9	1.10
10	1.10
12	1.10
14	1.10
16	1.10
18	1.10
20	1.10
25	1.10
30	1.10
40	1.10
50	1.10
60	1.10
75	1.10
90	1.10
120	1.10
150	1.10
180	1.10
240	1.10

Pit Dimensions (m)		
Length (m)	3.50	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.05**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**6.20**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

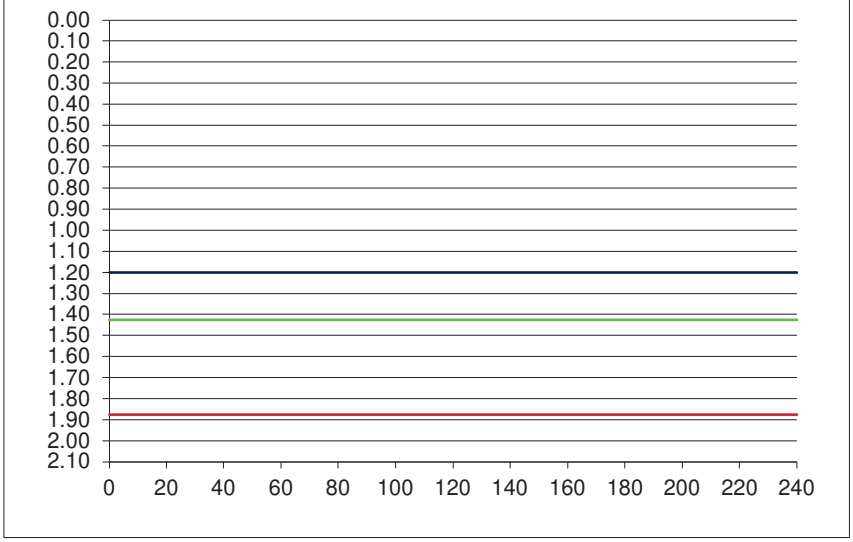
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA05
Date:	23/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.10	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.10	1.50	Firm brown grey slightly sandy slightly gravelly silty CLAY with low cobble content.
1.50	2.10	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.20
1.5	1.20
2	1.20
2.5	1.20
3	1.20
3.5	1.20
4	1.20
4.5	1.20
5	1.20
6	1.20
7	1.20
8	1.20
9	1.20
10	1.20
12	1.20
14	1.20
16	1.20
18	1.20
20	1.20
25	1.20
30	1.20
40	1.20
50	1.20
60	1.20
75	1.20
90	1.20
120	1.20
150	1.20
180	1.20
240	1.20

Pit Dimensions (m)		
Length (m)	3.80	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**1.03**	m3
Area of Drainage	**18.48**	m2
Area of Drainage (75%-25%)	**6.24**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

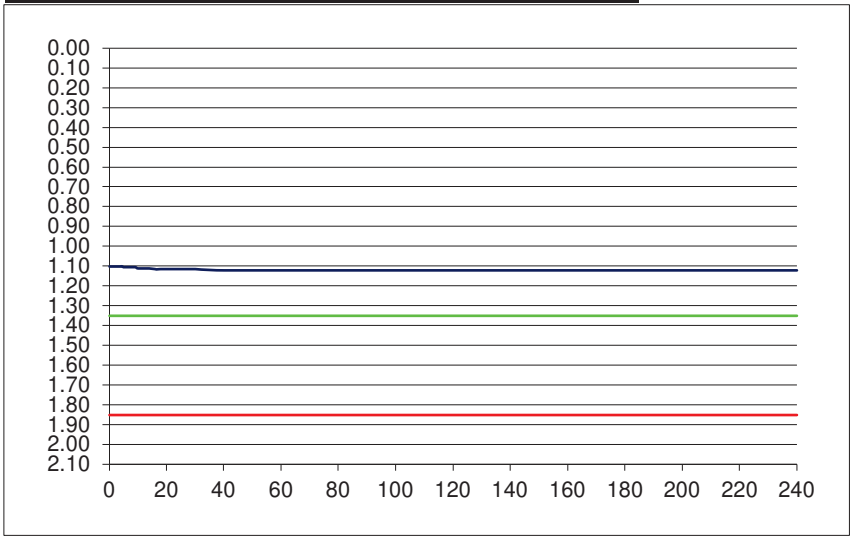
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA06
Date:	22/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	0.80	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.80	1.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.
1.80	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.11
6	1.11
7	1.11
8	1.11
9	1.11
10	1.11
12	1.11
14	1.11
16	1.12
18	1.12
20	1.12
25	1.12
30	1.12
40	1.12
50	1.12
60	1.12
75	1.12
90	1.12
120	1.12
150	1.12
180	1.12
240	1.12

Pit Dimensions (m)		
Length (m)	3.20	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**0.96**	m3
Area of Drainage	**15.96**	m2
Area of Drainage (75%-25%)	**5.72**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** m/min or **Fail** m/s

SOAKAWAY TEST

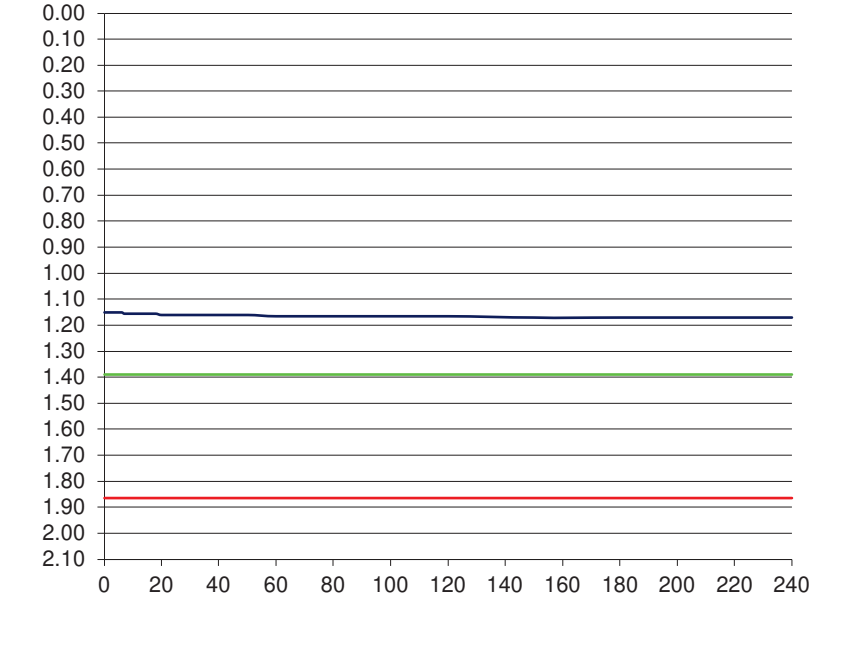
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA07
Date:	05/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	2.10	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.15
0.5	1.15
1	1.15
1.5	1.15
2	1.15
2.5	1.15
3	1.15
3.5	1.15
4	1.15
4.5	1.15
5	1.15
6	1.15
7	1.16
8	1.16
9	1.16
10	1.16
12	1.16
14	1.16
16	1.16
18	1.16
20	1.16
25	1.16
30	1.16
40	1.16
50	1.16
60	1.17
75	1.17
90	1.17
120	1.17
150	1.17
180	1.17
240	1.17

Pit Dimensions (m)		
Length (m)	3.50	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.15	m
Depth of Water	0.95	m
75% Full	1.39	m
25% Full	1.86	m
75%-25%	0.48	m
Volume of water (75%-25%)	**1.00**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**6.00**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

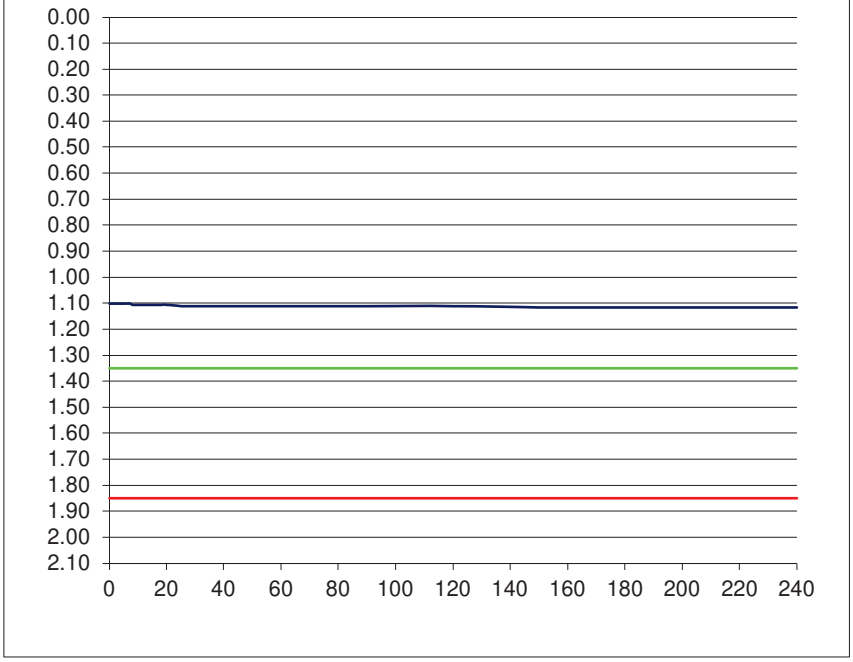
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA08
Date:	19/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	2.10	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.11
9	1.11
10	1.11
12	1.11
14	1.11
16	1.11
18	1.11
20	1.11
25	1.11
30	1.11
40	1.11
50	1.11
60	1.11
75	1.11
90	1.11
120	1.11
150	1.12
180	1.12
240	1.12

Pit Dimensions (m)		
Length (m)	3.40	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.02**	m3
Area of Drainage	**16.8**	m2
Area of Drainage (75%-25%)	**6.04**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

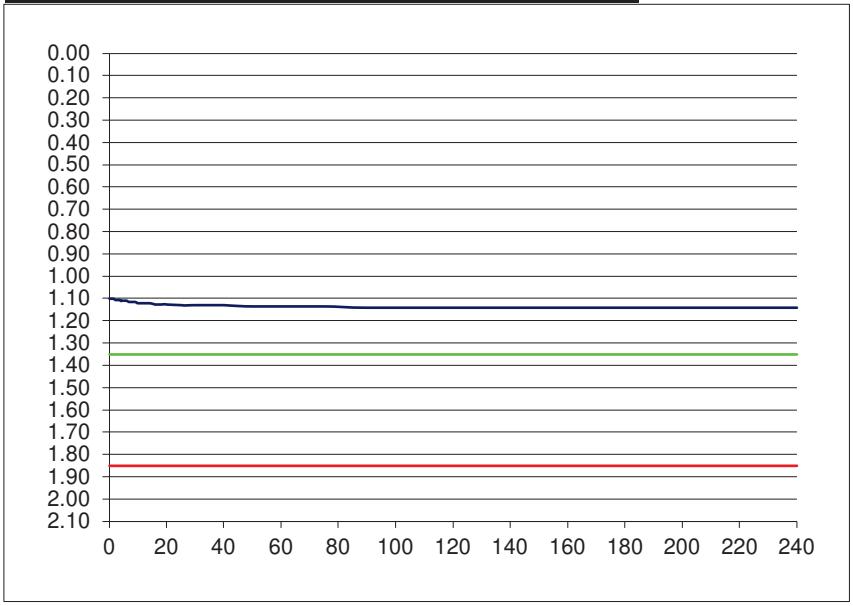
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA09
Date:	22/04/2024

Ground Conditions

From	To	
0.00	0.20	TOPSOIL.
0.20	0.50	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.50	2.10	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.11
2.5	1.11
3	1.11
3.5	1.11
4	1.11
4.5	1.11
5	1.11
6	1.11
7	1.12
8	1.12
9	1.12
10	1.12
12	1.12
14	1.12
16	1.13
18	1.13
20	1.13
25	1.13
30	1.13
40	1.13
50	1.14
60	1.14
75	1.14
90	1.14
120	1.14
150	1.14
180	1.14
240	1.14

Pit Dimensions (m)		
Length (m)	3.80	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.14**	m3
Area of Drainage	**18.48**	m2
Area of Drainage (75%-25%)	**6.68**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

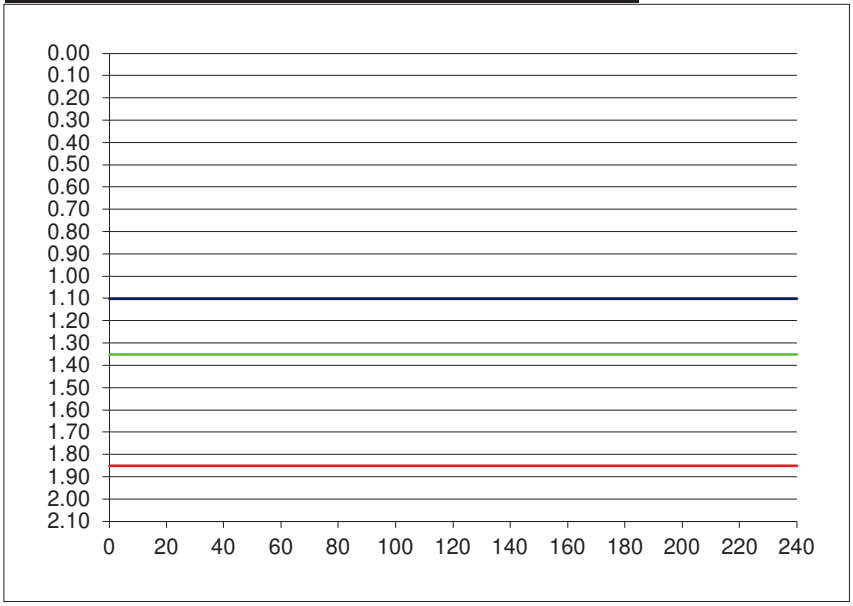
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA10
Date:	11/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	1.70	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.
1.70	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.10
9	1.10
10	1.10
12	1.10
14	1.10
16	1.10
18	1.10
20	1.10
25	1.10
30	1.10
40	1.10
50	1.10
60	1.10
75	1.10
90	1.10
120	1.10
150	1.10
180	1.10
240	1.10

Pit Dimensions (m)		
Length (m)	3.50	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**1.05**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**6.20**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

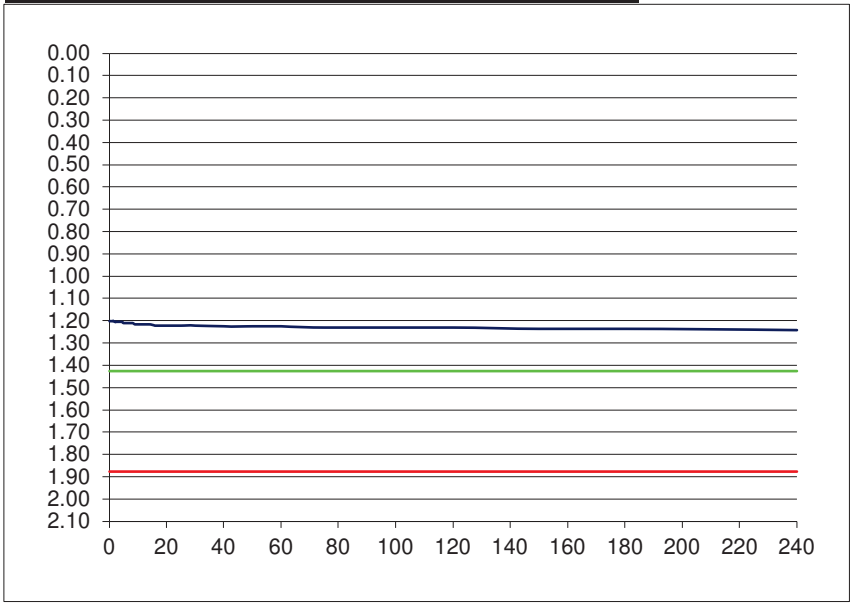
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA11
Date:	11/04/2024

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.30	2.00	Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content.
2.00	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.20
1.5	1.20
2	1.21
2.5	1.21
3	1.21
3.5	1.21
4	1.21
4.5	1.21
5	1.21
6	1.21
7	1.21
8	1.21
9	1.22
10	1.22
12	1.22
14	1.22
16	1.22
18	1.22
20	1.22
25	1.22
30	1.22
40	1.23
50	1.23
60	1.23
75	1.23
90	1.23
120	1.23
150	1.24
180	1.24
240	1.24

Pit Dimensions (m)		
Length (m)	3.30	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**0.89**	m3
Area of Drainage	**16.38**	m2
Area of Drainage (75%-25%)	**5.49**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

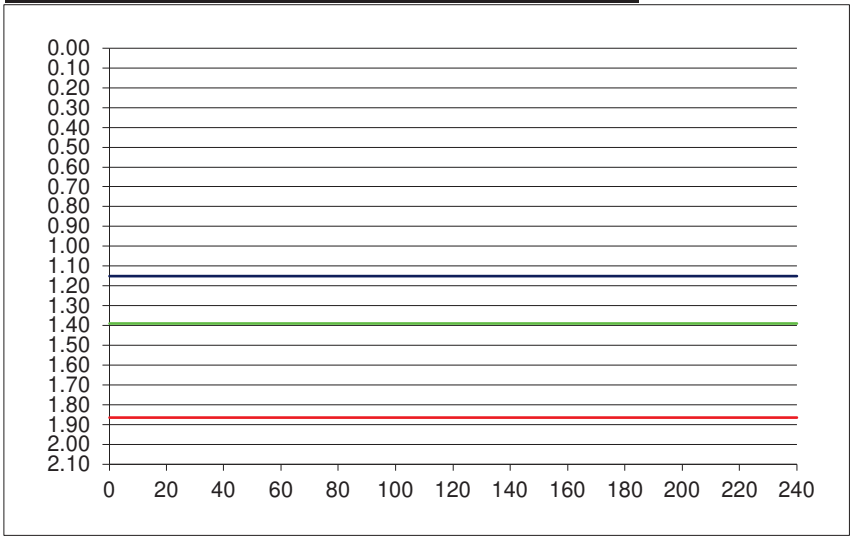
Project Reference:	6269
Contract name:	Mooretown
Location:	Swords, Co. Dublin
Test No:	SA12
Date:	15/04/2024

Ground Conditions

From	To	
0.00	0.20	TOPSOIL.
0.20	1.00	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.00	1.80	Firm brown grey slightly sandy slightly gravelly silty CLAY with medium cobble content.
1.80	2.10	Stiff black slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.15
0.5	1.15
1	1.15
1.5	1.15
2	1.15
2.5	1.15
3	1.15
3.5	1.15
4	1.15
4.5	1.15
5	1.15
6	1.15
7	1.15
8	1.15
9	1.15
10	1.15
12	1.15
14	1.15
16	1.15
18	1.15
20	1.15
25	1.15
30	1.15
40	1.15
50	1.15
60	1.15
75	1.15
90	1.15
120	1.15
150	1.15
180	1.15
240	1.15

Pit Dimensions (m)		
Length (m)	3.60	m
Width (m)	0.60	m
Depth	2.10	m
Water		
Start Depth of Water	1.15	m
Depth of Water	0.95	m
75% Full	1.39	m
25% Full	1.86	m
75%-25%	0.48	m
Volume of water (75%-25%)	**1.03**	m3
Area of Drainage	**17.64**	m2
Area of Drainage (75%-25%)	**6.15**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SK01 Sidewall

SK01 Spoil

SK02 Sidewall

SK02 Spoil

SK03 Sidewall

SK03 Spoil

SK04 Sidewall

SK04 Spoil

SK05 Sidewall

SK05 Spoil

SK06 Sidewall

SK06 Spoil

SK07 Sidewall

SK07 Spoil

SK08 Sidewall

SK08 Spoil

SK09 Sidewall

SK09 Spoil

SK10 Sidewall

SK10 Spoil

SK11 Sidewall

SK11 Spoil

SK12 Sidewall

SK12 Spoil

Appendix 4

California Bearing Ratio Test Results

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	9th May 2024

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
01	0.50	DM100	CBR	24/632	25.9	4.5	
02	0.50	DM101	CBR	24/633	18.5	3.1	
03	0.50	DM102	CBR	24/634	19.5	2.2	
04	0.50	DM103	CBR	24/635	15.4	4.7	
05	0.50	DM104	CBR	24/636	23.0	3.2	
06	0.50	DM105	CBR	24/637	20.6	3.2	
07	0.50	DM106	CBR	24/638	23.1	2.1	
08	0.50	DM107	CBR	24/639	25.8	3.3	
09	0.50	DM108	CBR	24/640	15.3	1.1	
10	0.50	DM109	CBR	24/641	20.0	6.0	
11	0.50	DM110	CBR	24/642	17.5	3.6	
12	0.50	DM111	CBR	24/643	26.3	3.0	
13	0.50	DM112	CBR	24/644	16.5	0.5	
14	0.50	DM113	CBR	24/645	24.1	1.1	
15	0.50	DM114	CBR	24/646	16.7	3.2	
16	0.50	DM115	CBR	24/647	25.1	4.4	
17	0.50	DM116	CBR	24/648	18.4	3.3	
18	0.50	DM117	CBR	24/649	22.9	4.0	
19	0.50	DM118	CBR	24/650	17.3	1.8	
20	0.50	DM119	CBR	24/651	19.4	6.1	
21	0.50	DM120	CBR	24/652	21.8	2.9	
22	0.50	DM121	CBR	24/653	24.4	4.2	
23	0.50	DM122	CBR	24/654	18.4	4.5	

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	9th May 2024

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
24	0.50	DM123	CBR	24/655	22.0	2.2	
25	0.50	DM124	CBR	24/656	15.4	5.0	
26	0.50	DM125	CBR	24/657	23.1	3.3	
27	0.50	DM126	CBR	24/658	24.7	3.0	
28	0.50	DM127	CBR	24/659	25.1	4.8	
29	0.50	DM128	CBR	24/660	23.0	6.1	
30	0.50	DM129	CBR	24/661	22.7	4.3	
31	0.50	DM130	CBR	24/662	23.7	6.3	
32	0.50	DM131	CBR	24/663	26.0	1.0	
33	0.50	DM132	CBR	24/664	15.8	3.9	
34	0.50	DM133	CBR	24/665	19.0	2.4	
35	0.50	DM134	CBR	24/666	25.0	2.6	
36	0.50	DM135	CBR	24/667	23.2	0.9	
37	0.50	DM136	CBR	24/668	26.2	2.2	
38	0.50	DM137	CBR	24/669	22.6	0.6	
39	0.50	DM138	CBR	24/670	21.0	1.7	
40	0.50	DM139	CBR	24/671	23.0	0.5	
41	0.50	DM140	CBR	24/672	25.4	4.6	
42	0.50	DM141	CBR	24/673	16.7	3.5	
43	0.50	DM142	CBR	24/674	15.2	4.9	
44	0.50	DM143	CBR	24/675	21.9	4.9	
45	0.50	DM144	CBR	24/676	25.3	5.6	
46	0.50	DM145	CBR	24/677	19.8	3.3	

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	9th May 2024

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
47	0.50	DM146	CBR	24/678	21.2	5.7	
48	0.50	DM147	CBR	24/679	23.6	2.2	
49	0.50	DM148	CBR	24/680	16.8	4.5	
50	0.50	DM149	CBR	24/681	21.0	5.3	
51	0.50	DM150	CBR	24/682	17.8	3.3	
52	0.50	DM151	CBR	24/683	18.6	4.3	
53	0.50	DM152	CBR	24/684	21.9	2.6	
54	0.50	DM153	CBR	24/685	19.5	6.0	
55	0.50	DM154	CBR	24/686	26.1	5.2	
56	0.50	DM155	CBR	24/687	18.4	1.1	
57	0.50	DM156	CBR	24/688	15.3	2.6	
58	0.50	DM157	CBR	24/689	17.0	4.4	
59	0.50	DM158	CBR	24/690	16.7	6.2	
60	0.50	DM159	CBR	24/691	22.8	2.1	
61	0.50	DM160	CBR	24/692	20.3	3.2	
62	0.50	DM161	CBR	24/693	22.4	4.1	
63	0.50	DM162	CBR	24/694	19.3	3.3	
64	0.50	DM163	CBR	24/695	18.7	2.4	
65	0.50	DM164	CBR	24/696	21.2	4.2	
66	0.50	DM165	CBR	24/697	19.4	2.0	
67	0.50	DM166	CBR	24/698	15.1	4.7	
68	0.50	DM167	CBR	24/699	15.3	2.0	
69	0.50	DM168	CBR	24/700	24.9	0.8	

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	9th May 2024

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
70	0.50	DM169	CBR	24/701	25.7	1.4	
71	0.50	DM170	CBR	24/702	25.0	5.5	
72	0.50	DM171	CBR	24/703	16.8	2.7	
73	0.50	DM172	CBR	24/704	26.4	2.4	
74	0.50	DM173	CBR	24/705	19.9	4.7	
75	0.50	DM174	CBR	24/706	18.0	4.3	
76	0.50	DM175	CBR	24/707	15.5	3.8	
77	0.50	DM176	CBR	24/708	23.1	4.5	
78	0.50	DM177	CBR	24/709	18.6	6.2	
79	0.50	DM178	CBR	24/710	20.8	1.3	
80	0.50	DM179	CBR	24/711	18.4	2.7	
81	0.50	DM180	CBR	24/712	18.2	2.1	
82	0.50	DM181	CBR	24/713	23.9	3.3	
83	0.50	DM182	CBR	24/714	17.5	3.3	
84	0.50	DM183	CBR	24/715	16.8	2.5	
85	0.50	DM184	CBR	24/716	20.1	1.8	
86	0.50	DM185	CBR	24/717	25.5	1.1	

Appendix 5

Geotechnical Laboratory Test Results

Classification Tests
In accordance with BS 1377: Part 2

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	7th May 2024

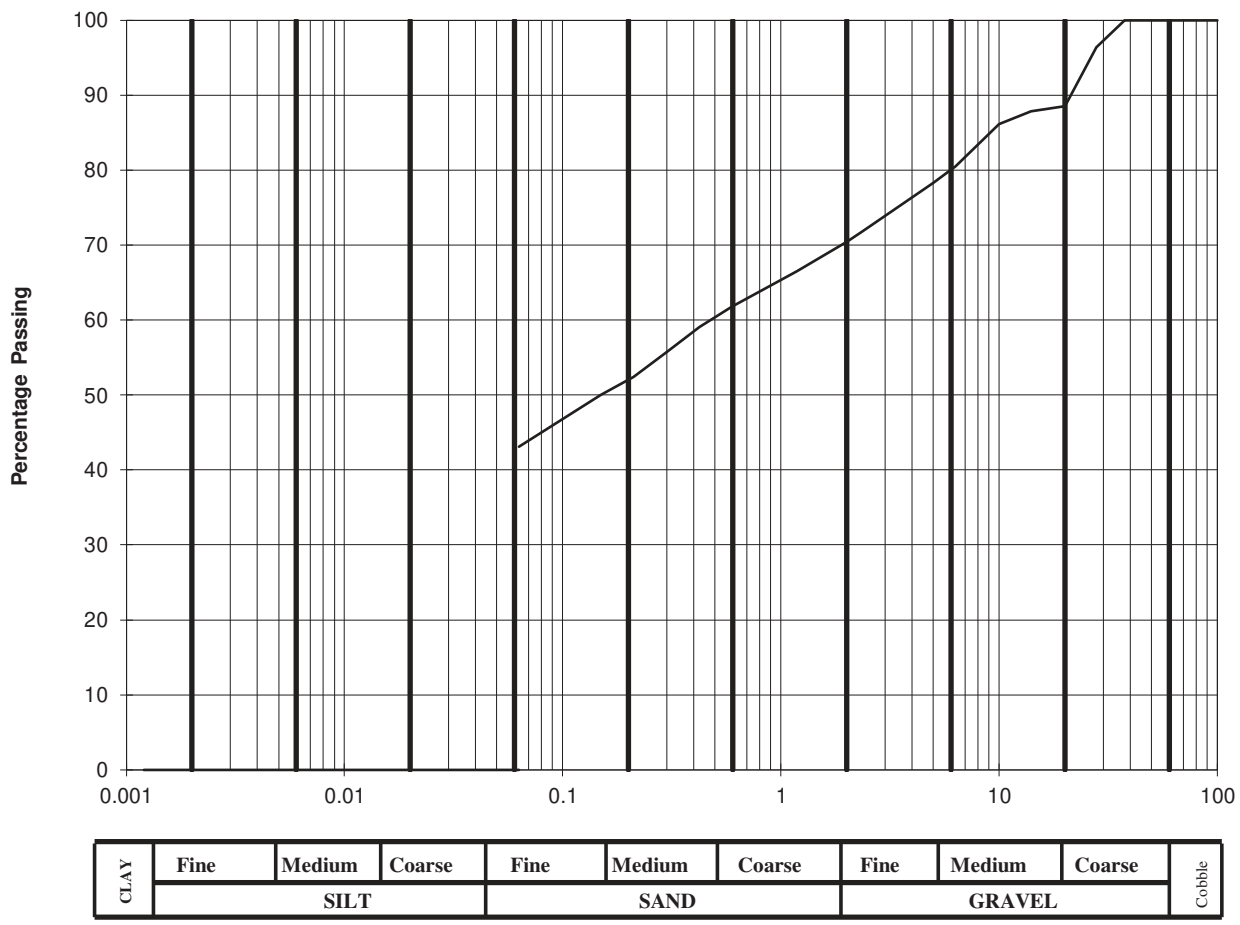
Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Max. Density Mg/m^2	Bulk Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
TP19	1.00		24/519	B	18.3	34	19	15			59.1		CL
TP68	1.00		24/520	B	21.3	33	19	14			62.1		CL
TP115	1.00		24/521	B	15.9	35	19	16			58.8		CL/CI
TP132	1.00		24/522	B	14.5	32	18	14			56.7		CL
TP142	1.00		24/523	B	21.2	33	19	14			61.4		CL
TP152	1.00		24/524	B	14.9	36	20	16			60.9		CI

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	96.4		
20	88.5		
14	87.8		
10	86.1		
6.3	80.5		
5.0	78.3		
2.36	71.8		
2.00	70.4		
1.18	66.5		
0.600	61.8		
0.425	59.1		
0.300	55.7		
0.212	52.4		
0.150	50		
0.063	43		

Cobbles, %	0
Gravel, %	30
Sand, %	27
Clay / Silt, %	43



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/519
Sample No :	

Hole ID :	TP 19
Depth, m :	1.00

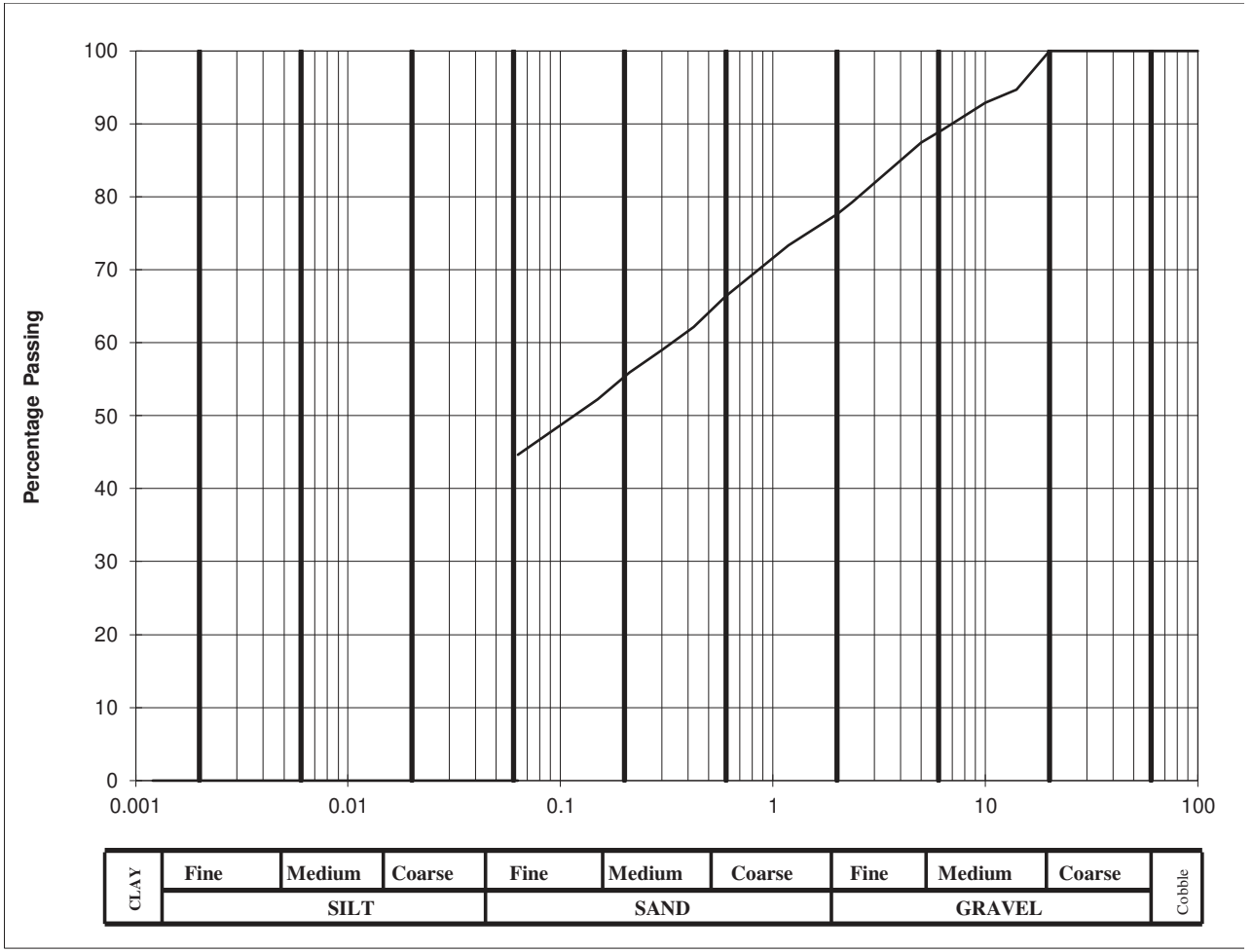
Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	100		
14	94.7		
10	92.9		
6.3	89.2		
5.0	87.4		
2.36	79.2		
2.00	77.6		
1.18	73.3		
0.600	66.3		
0.425	62.1		
0.300	59		
0.212	55.9		
0.150	52.2		
0.063	45		

Cobbles, %	0
Gravel, %	22
Sand, %	33
Clay / Silt, %	45



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/520
Sample No :	

Hole ID :	TP 68
Depth, m :	1.00

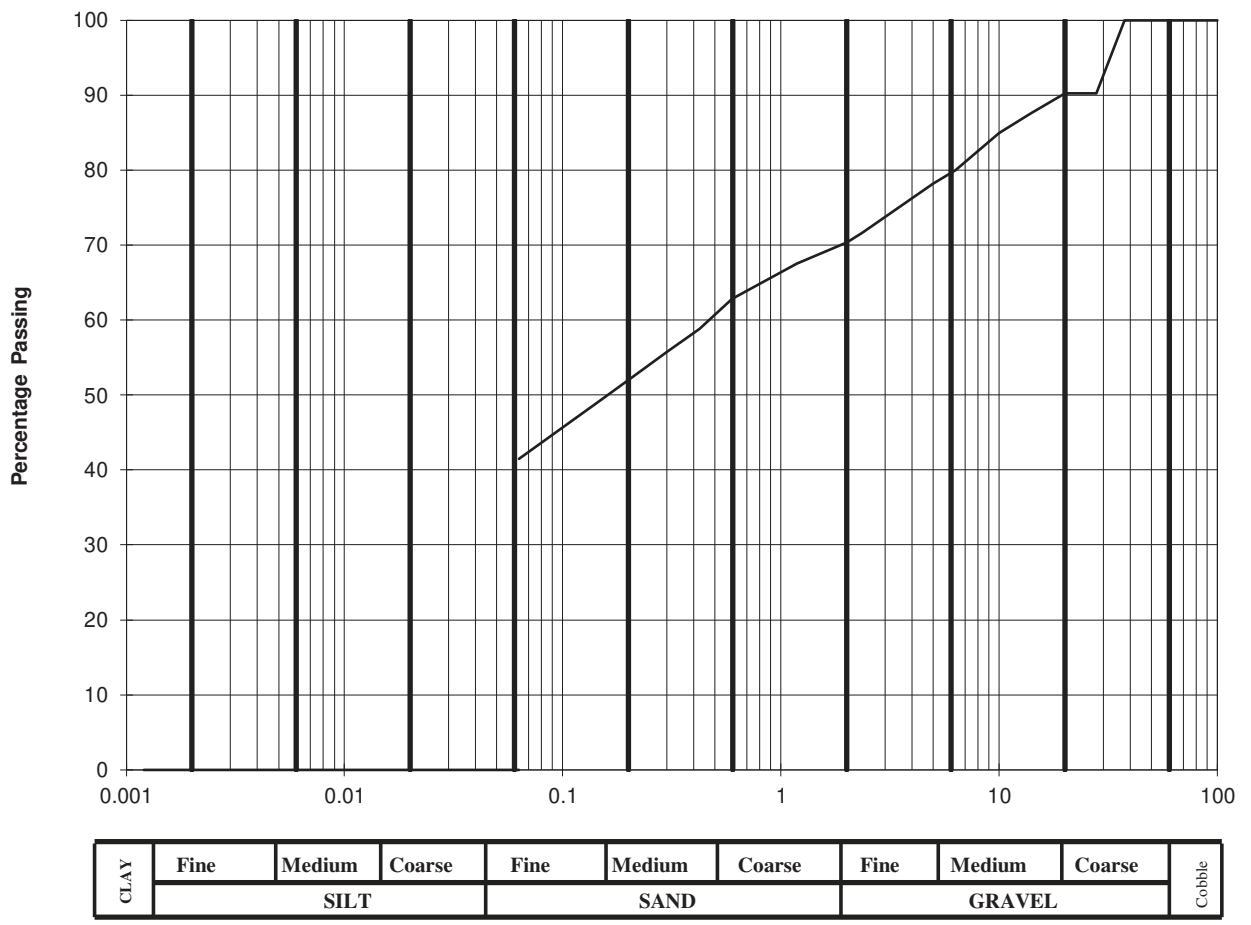
Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	90.2		
20	90.2		
14	87.6		
10	84.9		
6.3	80		
5.0	78.2		
2.36	71.6		
2.00	70.3		
1.18	67.5		
0.600	62.8		
0.425	58.8		
0.300	55.7		
0.212	52.5		
0.150	49.3		
0.063	42		

Cobbles, %	0
Gravel, %	30
Sand, %	28
Clay / Silt, %	42



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/521
Sample No :	

Hole ID :	TP 115
Depth, m :	1.00

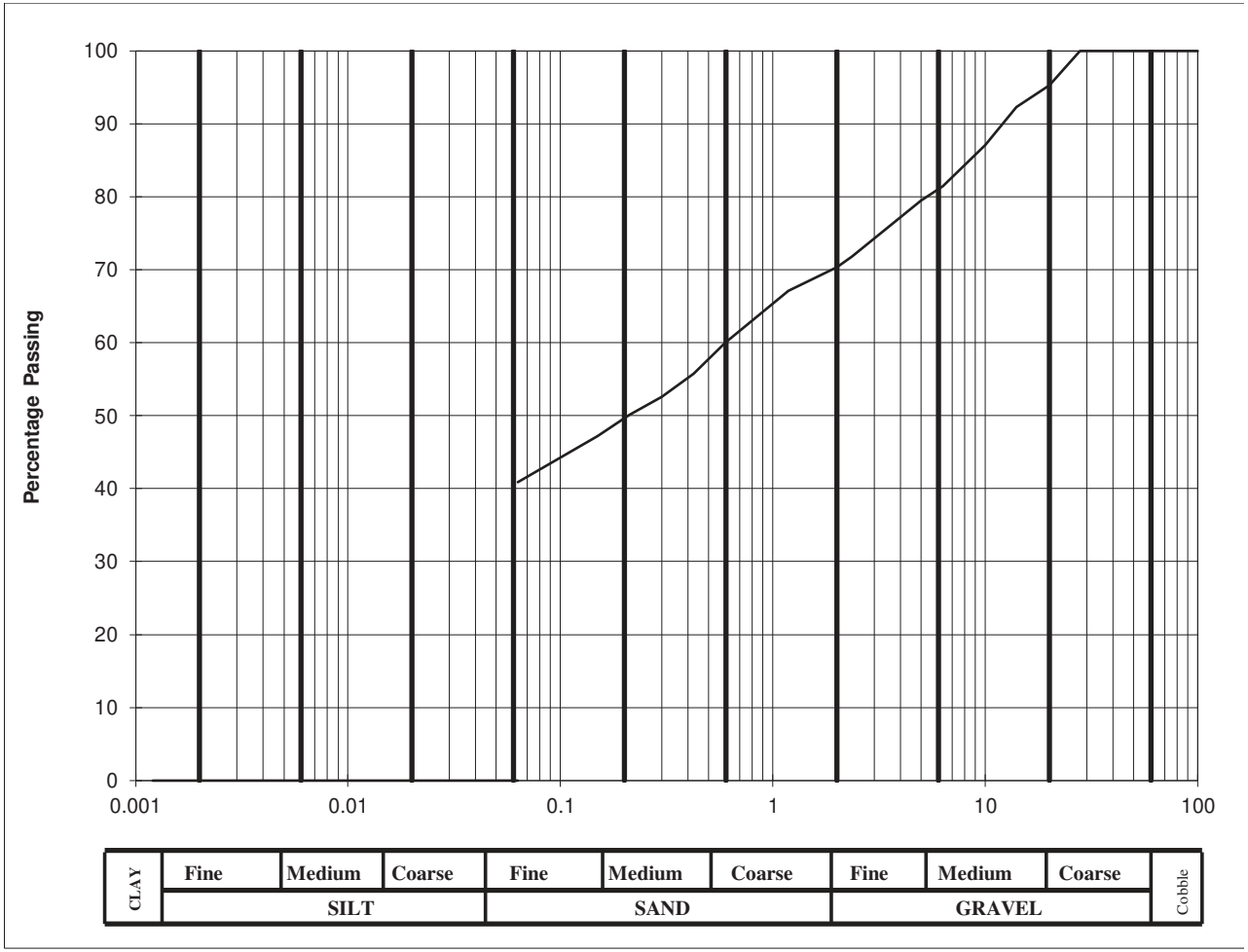
Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	95.3		
14	92.3		
10	87.1		
6.3	81.4		
5.0	79.5		
2.36	71.8		
2.00	70.3		
1.18	67.1		
0.600	60		
0.425	55.7		
0.300	52.6		
0.212	50.1		
0.150	47.2		
0.063	41		

Cobbles, %	0
Gravel, %	30
Sand, %	29
Clay / Silt, %	41



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/522
Sample No :	

Hole ID :	TP 132
Depth, m :	1.00

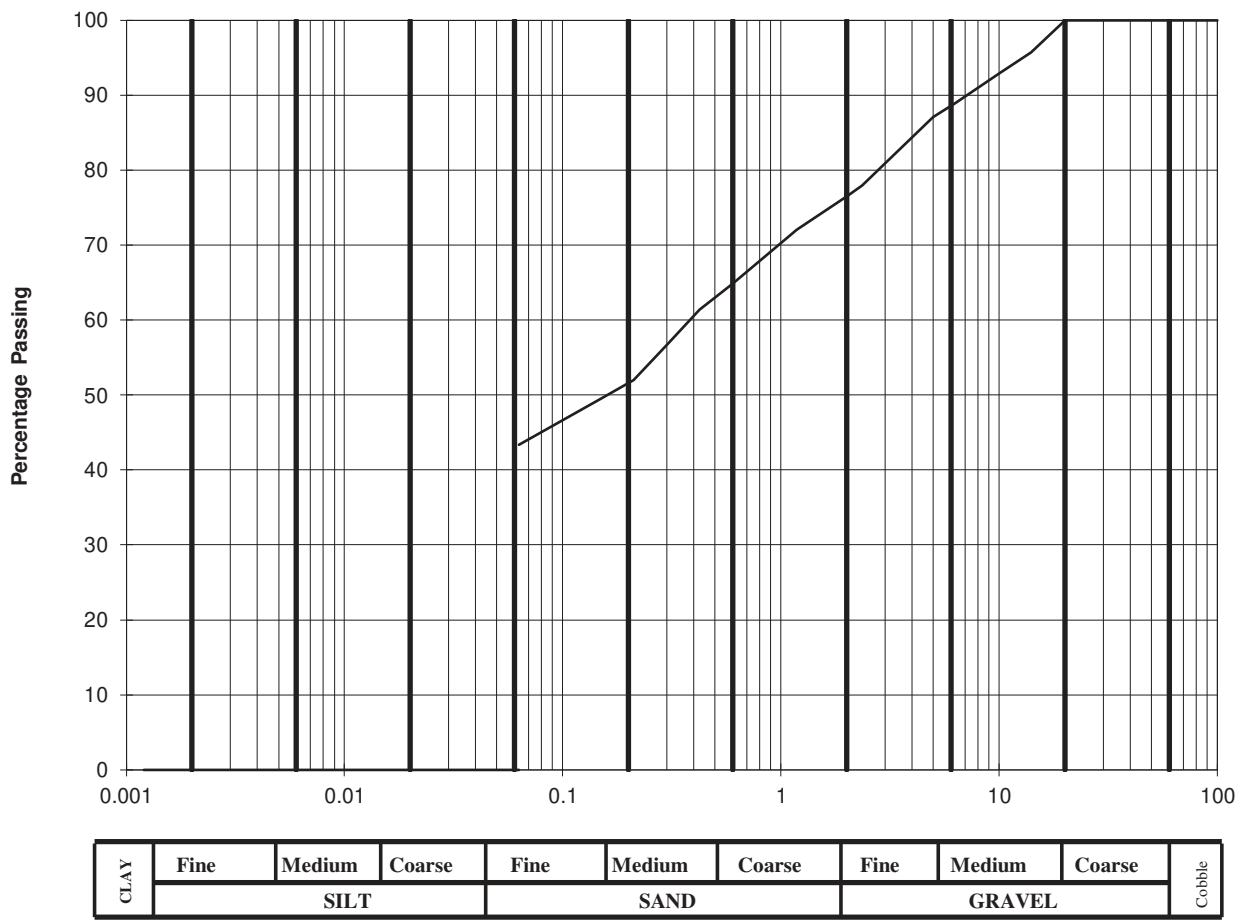
Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	100		
14	95.7		
10	92.9		
6.3	88.9		
5.0	87.1		
2.36	77.9		
2.00	76.5		
1.18	72		
0.600	64.8		
0.425	61.4		
0.300	56.7		
0.212	52		
0.150	49.5		
0.063	43		

Cobbles, %	0
Gravel, %	24
Sand, %	34
Clay / Silt, %	43



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/523
Sample No :	

Hole ID :	TP 142
Depth, m :	1.00

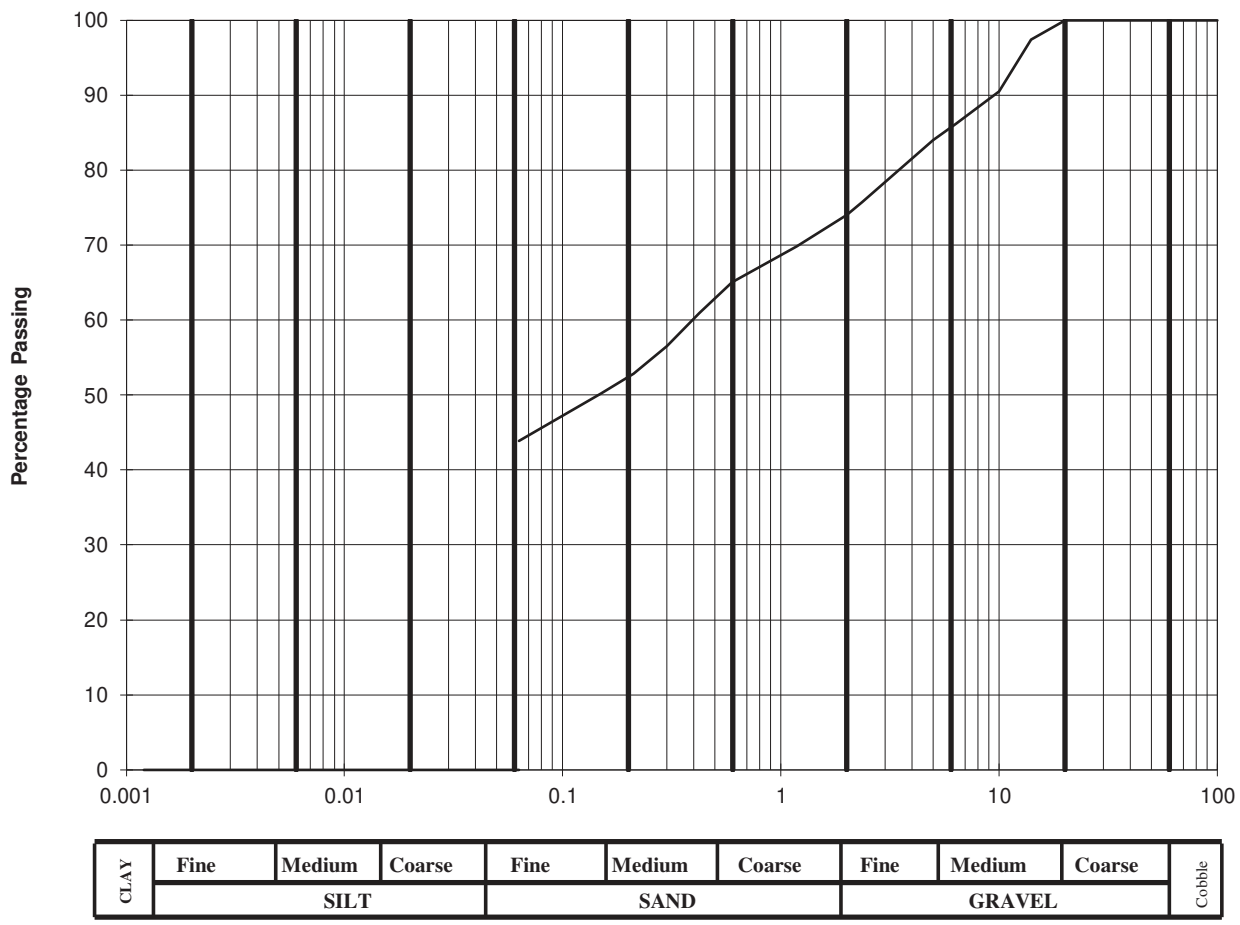
Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	100		
14	97.4		
10	90.5		
6.3	86.1		
5.0	84		
2.36	75.7		
2.00	74		
1.18	69.8		
0.600	65		
0.425	60.9		
0.300	56.5		
0.212	52.8		
0.150	50.2		
0.063	44		

Cobbles, %	0
Gravel, %	26
Sand, %	30
Clay / Silt, %	44



Engineer :	Fingal County Council
Project :	Mooretown, Swords

Lab. No :	24/524
Sample No :	

Hole ID :	TP 152
Depth, m :	1.00

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

Chemical Testing
In accordance with BS 1377: Part 3

Client	Fingal County Council
Site	Mooretown, Swords
S.I. File No	6269 / 24
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	7th May 2024

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm
TP19	1.00		24/519	8.81	0.122	0.086			0.22	70.4
TP68	1.00		24/520	8.56	0.122	0.094			0.27	77.6
TP115	1.00		24/521	8.07	0.124	0.087			0.25	70.3
TP132	1.00		24/522	8.99	0.123	0.086			0.26	70.3
TP142	1.00		24/523	8.90	0.123	0.094			0.23	76.5
TP152	1.00		24/524	8.12	0.124	0.092			0.24	74.0

Printed 24/05/2024

Site Investigations Ltd.

Appendix 6

Environmental Laboratory Test Results

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Site Investigations Ltd
The Grange
Carhugar
12th Lock Road
Lucan
Co. Dublin

Attention: Stephen Letch

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 April 2024
Customer:	Site Investigations Ltd
Sample Delivery Group (SDG):	240423-20
Your Reference:	6264
Location:	SWORDS
Report No:	727344
Order Number:	12/B/24

We received 12 samples on Monday April 22, 2024 and 12 of these samples were scheduled for analysis which was completed on Tuesday April 30, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
29689525	TP 11		0.50 - 0.50	
29689526	TP 15		0.50 - 0.50	
29689527	TP 19		1.00 - 1.00	
29689528	TP 60		0.50 - 0.50	
29689529	TP 68		1.00 - 1.00	
29689530	TP 75		0.50 - 0.50	
29689531	TP 115		1.00 - 1.00	
29689532	TP 119		0.50 - 0.50	
29689533	TP 132		1.00 - 1.00	
29689534	TP 142		1.00 - 1.00	
29689535	TP 152		1.00 - 1.00	
29689536	TP 155		0.50 - 0.50	

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	29689525			29689526			29689527	29689528			29689529	29689530			29689531	29689532			29689533
			Customer Sample Reference	TP 11			TP 15			TP 19	TP 60			TP 68	TP 75			TP 115	TP 119			TP 132
			AGS Reference																			
			Depth (m)	0.50 - 0.50			0.50 - 0.50			1.00 - 1.00	0.50 - 0.50			1.00 - 1.00	0.50 - 0.50			1.00 - 1.00	0.50 - 0.50			1.00 - 1.00
			Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Anions by Kone (w)	All	NDPs: 0 Tests: 6		X			X				X				X				X			
CEN Readings	All	NDPs: 0 Tests: 6		X			X				X				X				X			
Chromium III	All	NDPs: 0 Tests: 6			X			X				X				X				X		
Coronene	All	NDPs: 0 Tests: 6			X			X				X				X				X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6		X			X				X				X				X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 6		X			X				X				X				X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 6			X			X				X				X				X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 6			X			X				X				X				X		
Fluoride	All	NDPs: 0 Tests: 6		X			X				X				X				X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 6				X			X				X				X				X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 6			X			X				X				X				X		
Loss on Ignition in soils	All	NDPs: 0 Tests: 6			X			X				X				X				X		
Mercury Dissolved	All	NDPs: 0 Tests: 6		X			X				X				X				X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 6			X			X				X				X				X		
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 6			X			X				X				X				X		

29689536	TP 155		0.50 - 0.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X		X				X		X			X		X		X		X
				1kg TUB with Handle (ALE260)	S		X		X			X		X				X					X		
29689535	TP 152		1.00 - 1.00	250g Amber Jar (ALE210)	S																				
29689534	TP 142		1.00 - 1.00	250g Amber Jar (ALE210)	S																				

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
PAH by GCMS	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
PCBs by GCMS	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
pH	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
pH Value of Filtered Water	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689526	TP 15		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689527	TP 19		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689528	TP 60		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689529	TP 68		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689530	TP 75		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689531	TP 115		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689532	TP 119		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689533	TP 132		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
Phenols by HPLC (W)	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689526	TP 15		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689527	TP 19		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689528	TP 60		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689529	TP 68		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689530	TP 75		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689531	TP 115		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
			29689532	TP 119		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
			29689533	TP 132		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
Sample description	All	NDPs: 0 Tests: 12	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 12	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689526	TP 15		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689527	TP 19		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689528	TP 60		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689529	TP 68		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689530	TP 75		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689531	TP 115		1.00 - 1.00	250g Amber Jar (ALE210)	S
			29689532	TP 119		0.50 - 0.50	250g Amber Jar (ALE210)	S
			29689533	TP 132		1.00 - 1.00	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 6	29689525	TP 11		0.50 - 0.50	60g VOC (ALE215)	S
			29689526	TP 15		0.50 - 0.50	60g VOC (ALE215)	S
			29689527	TP 19		1.00 - 1.00	60g VOC (ALE215)	S
			29689528	TP 60		0.50 - 0.50	60g VOC (ALE215)	S
			29689529	TP 68		1.00 - 1.00	60g VOC (ALE215)	S
			29689530	TP 75		0.50 - 0.50	60g VOC (ALE215)	S
			29689531	TP 115		1.00 - 1.00	60g VOC (ALE215)	S
			29689532	TP 119		0.50 - 0.50	60g VOC (ALE215)	S
			29689533	TP 132		1.00 - 1.00	60g VOC (ALE215)	S

29689536	TP 155		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X		X						X		X		X		
				1kg TUB with Handle (ALE260)	S								X		X								
29689535	TP 152		1.00 - 1.00	250g Amber Jar (ALE210)	S												X		X				
29689534	TP 142		1.00 - 1.00	250g Amber Jar (ALE210)	S												X		X				

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
29689525	TP 11	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	None
29689526	TP 15	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	None
29689527	TP 19	1.00 - 1.00	Dark Brown	Sandy Clay Loam	Stones	None
29689528	TP 60	0.50 - 0.50	Light Brown	Sandy Clay Loam	Stones	None
29689529	TP 68	1.00 - 1.00	Light Brown	Sandy Clay Loam	Stones	None
29689530	TP 75	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	None
29689531	TP 115	1.00 - 1.00	Light Brown	Sandy Clay Loam	Stones	None
29689532	TP 119	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	None
29689533	TP 132	1.00 - 1.00	Light Brown	Sandy Clay Loam	Stones	Vegetation
29689534	TP 142	1.00 - 1.00	Dark Brown	Sandy Clay Loam	Stones	None
29689535	TP 152	1.00 - 1.00	Dark Brown	Sandy Clay Loam	Stones	None
29689536	TP 155	0.50 - 0.50	Light Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP 11	TP 15	TP 19	TP 60	TP 68	TP 75
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	-	-	-	-	-	-
			Sample Time	.	.	.	.	.	.
			Date Received	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024
			SDG Ref	240423-20	240423-20	240423-20	240423-20	240423-20	240423-20
			Lab Sample No.(s)	29689525	29689526	29689527	29689528	29689529	29689530
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11 §	13 §	8.5 §	10 §	17 §	9.4 §
Loss on ignition	<0.7 %	TM018		2.51 § M	3.19 § M		2.96 § M		2.41 § M
Organic Carbon, Total	<0.2 %	TM132		0.486 § M	0.533 § M		0.637 § M		0.826 § M
Organic Matter, Total	<0.35 %	TM132				1.57 § #		1.34 § #	
pH	1 pH Units	TM133		8.94 § M	8.72 § M		8.68 § M		8.94 § M
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6 § M	<0.6 § M		<0.6 § M		<0.6 § M
PCB congener 28	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 52	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 101	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 118	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 138	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 153	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
PCB congener 180	<3 µg/kg	TM168		<3 § M	<3 § M		<3 § M		<3 § M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21 §	<21 §		<21 §		<21 §
Chromium, Trivalent	<0.9 mg/kg	TM181		7.29 §	6.3 §		7.55 §		7.79 §
Antimony	<0.6 mg/kg	TM181		<0.6 § #	<0.6 § #		<0.6 § #		<0.6 § #
Arsenic	<0.6 mg/kg	TM181		12 § M	10.4 § M		12.4 § M		11.1 § M
Barium	<0.6 mg/kg	TM181		104 § #	188 § #		113 § #		80.2 § #
Cadmium	<0.02 mg/kg	TM181		1.4 § M	1.24 § M		1.89 § M		1.24 § M
Chromium	<0.9 mg/kg	TM181		7.29 § M	6.3 § M		7.55 § M		7.79 § M
Copper	<1.4 mg/kg	TM181		25.5 § M	24.6 § M		23.4 § M		24.2 § M
Lead	<0.7 mg/kg	TM181		17 § M	14.5 § M		16.2 § M		14.7 § M
Mercury	<0.1 mg/kg	TM181		<0.1 § M	<0.1 § M		<0.1 § M		<0.1 § M
Molybdenum	<0.1 mg/kg	TM181		4.03 § #	4.07 § #		4.37 § #		5.03 § #
Nickel	<0.2 mg/kg	TM181		32.7 § M	32.6 § M		39.2 § M		31.5 § M
Selenium	<1 mg/kg	TM181		1.37 § #	1.06 § #		1.58 § #		1.39 § #
Zinc	<1.9 mg/kg	TM181		55.2 § M	50.8 § M		56.2 § M		55.2 § M
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410		<10 §	<10 §		<10 §		<10 §
Coronene	<200 µg/kg	TM410		<200 §	<200 §		<200 §		<200 §
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415		<5 §	<5 §		<5 §		<5 §

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP 115	TP 119	TP 132	TP 142	TP 152	TP 155
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	-	-	-	-	-	-
			Sample Time	.	.	.	.	.	.
			Date Received	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024
			SDG Ref	240423-20	240423-20	240423-20	240423-20	240423-20	240423-20
			Lab Sample No.(s)	29689531	29689532	29689533	29689534	29689535	29689536
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14 §	17 §	11 §	11 §	12 §	14 §
Loss on ignition	<0.7 %	TM018			3.17 § M				4.65 § M
Organic Carbon, Total	<0.2 %	TM132			0.725 § M				0.609 § M
Organic Matter, Total	<0.35 %	TM132		0.946 § #		1.24 § #	0.96 § #	0.893 § #	
pH	1 pH Units	TM133			7.11 § M				8.62 § M
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6 § M				<0.6 § M
PCB congener 28	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 52	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 101	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 118	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 138	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 153	<3 µg/kg	TM168			<3 § M				<3 § M
PCB congener 180	<3 µg/kg	TM168			<3 § M				<3 § M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168			<21 §				<21 §
Chromium, Trivalent	<0.9 mg/kg	TM181			13.5 §				11 §
Antimony	<0.6 mg/kg	TM181			<0.6 § #				<0.6 § #
Arsenic	<0.6 mg/kg	TM181			14.5 § M				13.9 § M
Barium	<0.6 mg/kg	TM181			139 § #				127 § #
Cadmium	<0.02 mg/kg	TM181			2 § M				1.74 § M
Chromium	<0.9 mg/kg	TM181			13.5 § M				11 § M
Copper	<1.4 mg/kg	TM181			34.9 § M				28.8 § M
Lead	<0.7 mg/kg	TM181			23 § M				20.3 § M
Mercury	<0.1 mg/kg	TM181			<0.1 § M				<0.1 § M
Molybdenum	<0.1 mg/kg	TM181			5.59 § #				5.08 § #
Nickel	<0.2 mg/kg	TM181			51.2 § M				43.3 § M
Selenium	<1 mg/kg	TM181			1.2 § #				1.17 § #
Zinc	<1.9 mg/kg	TM181			73.8 § M				67.3 § M
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410			<10 §				<10 §
Coronene	<200 µg/kg	TM410			<200 §				<200 §
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415			<5 §				<5 §

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

PAH by GCMS

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP 11	TP 15	TP 60	TP 75	TP 119	TP 155
			Depth (m)	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	-	-	-	-	-	-
			Sample Time	.	.	.	.	.	.
			Date Received	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024
			SDG Ref	240423-20	240423-20	240423-20	240423-20	240423-20	240423-20
			Lab Sample No.(s)	29689525	29689526	29689528	29689530	29689532	29689536
			AGS Reference						
Naphthalene	<9 µg/kg	TM218		<9 § M	<9 § M	<9 § M	<9 § M	<9 § M	<9 § M
Acenaphthylene	<12 µg/kg	TM218		<12 § M	<12 § M	<12 § M	<12 § M	<12 § M	<12 § M
Acenaphthene	<8 µg/kg	TM218		<8 § M	<8 § M	<8 § M	<8 § M	<8 § M	<8 § M
Fluorene	<10 µg/kg	TM218		<10 § M	<10 § M	<10 § M	<10 § M	<10 § M	<10 § M
Phenanthrene	<15 µg/kg	TM218		<15 § M	<15 § M	<15 § M	<15 § M	<15 § M	<15 § M
Anthracene	<16 µg/kg	TM218		<16 § M	<16 § M	<16 § M	<16 § M	<16 § M	<16 § M
Fluoranthene	<17 µg/kg	TM218		<17 § M	<17 § M	<17 § M	<17 § M	<17 § M	<17 § M
Pyrene	<15 µg/kg	TM218		<15 § M	<15 § M	<15 § M	<15 § M	<15 § M	<15 § M
Benz(a)anthracene	<14 µg/kg	TM218		<14 § M	<14 § M	<14 § M	<14 § M	<14 § M	<14 § M
Chrysene	<10 µg/kg	TM218		<10 § M	<10 § M	<10 § M	<10 § M	<10 § M	<10 § M
Benzo(b)fluoranthene	<15 µg/kg	TM218		<15 § M	<15 § M	<15 § M	<15 § M	<15 § M	<15 § M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 § M	<14 § M	<14 § M	<14 § M	<14 § M	<14 § M
Benzo(a)pyrene	<15 µg/kg	TM218		<15 § M	<15 § M	<15 § M	<15 § M	<15 § M	<15 § M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 § M	<18 § M	<18 § M	<18 § M	<18 § M	<18 § M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 § M	<23 § M	<23 § M	<23 § M	<23 § M	<23 § M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 § M	<24 § M	<24 § M	<24 § M	<24 § M	<24 § M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<118 §	<118 §	<118 §	<118 §	<118 §	<118 §

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

TPH CWG (S)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4♦§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP 11	TP 15	TP 60	TP 75	TP 119	TP 155
			Depth (m)	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	-	-	-	-	-	-
			Sample Time	-	-	-	-	-	-
			Date Received	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024
			SDG Ref	240423-20	240423-20	240423-20	240423-20	240423-20	240423-20
			Lab Sample No.(s)	29689525	29689526	29689528	29689530	29689532	29689536
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		110 §	113 §	105 §	79.4 §	107 §	107 §
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414		<1000 §	<1000 §	<1000 §	<1000 §	<1000 §	<1000 §
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414		<5000 §	<5000 §	<5000 §	<5000 §	<5000 §	<5000 §
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414		<10000 §	<10000 §	<10000 §	<10000 §	<10000 §	<10000 §
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089		<10 §	<10 §	<10 §	<10 §	<10 §	<10 §
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #	<1000 § #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 §	<1000 §	<1000 §	<1000 §	<1000 §	<1000 §
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414		<1000 §	<1000 §	<1000 §	<1000 §	<1000 §	<1000 §
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414		<5000 §	<5000 §	<5000 §	<5000 §	<5000 §	<5000 §
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414		<10000 §	<10000 §	<10000 §	<10000 §	<10000 §	<10000 §
GRO >C5-C6 (HS_1D)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §
GRO >C6-C7 (HS_1D)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §
GRO >C7-C8 (HS_1D)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §
GRO >C8-C10 (HS_1D)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §
GRO >C10-C12 (HS_1D)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089		<50 §	<50 §	<50 §	<50 §	<50 §	<50 §
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089		<50 §	<50 §	<50 §	<50 §	<50 §	<50 §
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089		<20 §	<20 §	<20 §	<20 §	<20 §	<20 §

CERTIFICATE OF ANALYSIS

SDG: 240423-20 **Report Number:** 727344 **Superseded Report:**
Client Ref.: 6264 **Location:** SWORDS

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP 11	TP 15	TP 60	TP 75	TP 119	TP 155
			Depth (m)	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	-	-	-	-	-	-
			Sample Time	.	.	.	.	.	.
			Date Received	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024	22/04/2024
			SDG Ref	240423-20	240423-20	240423-20	240423-20	240423-20	240423-20
			Lab Sample No.(s)	29689525	29689526	29689528	29689530	29689532	29689536
			AGS Reference						
Dibromofluoromethane**	%	TM116		116 §	116 §	119 §	122 §	113 §	117 §
Toluene-d8**	%	TM116		97.9 §	97.8 §	95.5 §	98.9 §	96.8 §	98.9 §
4-Bromofluorobenzene**	%	TM116		78.7 §	79.8 §	77.6 §	79.1 §	74.8 §	76.4 §
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116		<0.5 § M	<0.5 § M	<0.5 § M	<0.5 § M	<0.5 § M	<0.5 § M
Benzene	<1 µg/kg	TM116		<1.6 § M	<1 § M	<1.2 § M	<1.4 § M	<1 § M	<1.5 § M
Toluene	<1 µg/kg	TM116		21.9 § M	30.5 § M	<2.9 § M	3.99 § M	<1 § M	13.8 § M
Ethylbenzene	<1 µg/kg	TM116		1.88 § M	3.7 § M	<1 § M	<1 § M	<1 § M	1.55 § M
p/m-Xylene	<2 µg/kg	TM116		8.57 § #	16.4 § #	<2 § #	2.48 § #	<2 § #	8.29 § #
o-Xylene	<2 µg/kg	TM116		<2 § M	4.4 § M	<2 § M	<2 § M	<2 § M	<2 § M

Validated

CERTIFICATE OF ANALYSIS

SDG: 240423-20 | Report Number: 727344 | Superseded Report:
Client Ref.: 6264 | Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87.4
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689525
Sampled Date	
Customer Sample Ref.	TP 11
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon (%)	0.486	3	5	6
Loss on Ignition (%)	2.51	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.94	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00944	<0.0002	0.0944	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000413	<0.0003	0.00413	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0129	<0.003	0.129	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00161	<0.001	0.0161	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	10.8	<3	108	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.68
Conductivity (µS/cm)	92
Volume Leachant (Litres)	0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	15.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.8
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689526
Sampled Date	
Customer Sample Ref.	TP 15
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.533	3	5	6
Loss on Ignition (%)	3.19	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.72	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00869	<0.0002	0.0869	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000483	<0.0003	0.00483	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0153	<0.003	0.153	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00265	<0.001	0.0265	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.60
Conductivity (µS/cm)	86
Volume Leachant (Litres)	0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
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CERTIFICATE OF ANALYSIS

SDG: 240423-20 | Report Number: 727344 | Superseded Report:
Client Ref.: 6264 | Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89.1
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689528
Sampled Date	
Customer Sample Ref.	TP 60
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.637	3	5	6
Loss on Ignition (%)	2.96	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.68	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00801	<0.0002	0.0801	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.0021	<0.0003	0.021	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0105	<0.003	0.105	<0.03	0.5	10	30
Nickel	0.00126	<0.0004	0.0126	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00142	<0.001	0.0142	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	0.661	<0.5	6.61	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.45	<3	54.5	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.66
Conductivity (µS/cm)	115
Volume Leachant (Litres)	0.889

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
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CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689530
Sampled Date	
Customer Sample Ref.	TP 75
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.826	3	5	6
Loss on Ignition (%)	2.41	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.94	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00694	<0.0002	0.0694	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000636	<0.0003	0.00636	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0125	<0.003	0.125	<0.03	0.5	10	30
Nickel	<0.0004	<0.0004	<0.004	<0.004	0.4	10	40
Lead	0.000855	<0.0002	0.00855	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00418	<0.001	0.0418	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.73
Conductivity (µS/cm)	90
Volume Leachant (Litres)	0.888

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
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CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	21.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.6
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689532
Sampled Date	
Customer Sample Ref.	TP 119
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.725	3	5	6
Loss on Ignition (%)	3.17	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	7.11	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00065	<0.0005	0.0065	<0.005	0.5	2	25
Barium	0.00319	<0.0002	0.0319	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00101	<0.001	0.0101	<0.01	0.5	10	70
Copper	0.00219	<0.0003	0.0219	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00831	<0.003	0.0831	<0.03	0.5	10	30
Nickel	0.00218	<0.0004	0.0218	<0.004	0.4	10	40
Lead	0.000667	<0.0002	0.00667	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00521	<0.001	0.0521	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	3.7	<2	37	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.68	<3	36.8	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	7.22
Conductivity (µS/cm)	27
Volume Leachant (Litres)	0.882

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689536
Sampled Date	
Customer Sample Ref.	TP 155
Depth (m)	0.50 - 0.50

Solid Waste Analysis	**Result**	**Landfill Waste Acceptance Criteria Limits**		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	0.609	3	5	6
Loss on Ignition (%)	4.65	-	-	10
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	<10	100	-	-
pH (pH Units)	8.62	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	<0.0005	<0.0005	<0.005	<0.005	0.5	2	25
Barium	0.00661	<0.0002	0.0661	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000707	<0.0003	0.00707	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00811	<0.003	0.0811	<0.03	0.5	10	30
Nickel	0.000442	<0.0004	0.00442	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00208	<0.001	0.0208	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.14	<3	31.4	<30	500	800	1000

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.30
Conductivity (µS/cm)	106
Volume Leachant (Litres)	0.884

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
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CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87.4
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689525
Sampled Date	
Customer Sample Ref.	TP 11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	70.1	<10	701	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.68
Conductivity (µS/cm)	92
Volume Leachant (Litres)	0.887

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	15.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.8
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689526
Sampled Date	
Customer Sample Ref.	TP 15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	65.6	<10	656	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.60
Conductivity (µS/cm)	86
Volume Leachant (Litres)	0.887

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89.1
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689528
Sampled Date	
Customer Sample Ref.	TP 60
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	88.3	<10	883	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.66
Conductivity (µS/cm)	115
Volume Leachant (Litres)	0.889

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689530
Sampled Date	
Customer Sample Ref.	TP 75
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	69.2	<10	692	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.73
Conductivity (µS/cm)	90
Volume Leachant (Litres)	0.888

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	21.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.6
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689532
Sampled Date	
Customer Sample Ref.	TP 119
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	20.7	<10	207	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	7.22
Conductivity (µS/cm)	27
Volume Leachant (Litres)	0.882

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

CERTIFICATE OF ANALYSIS

SDG: 240423-20 Report Number: 727344 Superseded Report:
Client Ref.: 6264 Location: SWORDS

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	SWORDS
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	240423-20
Lab Sample Number(s)	29689536
Sampled Date	
Customer Sample Ref.	TP 155
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Dissolved solids, Total (meter)	81.1	<10	811	<100	-	-	-

Leach Test Information

Date Prepared	24-Apr-2024
pH (pH Units)	8.30
Conductivity (µS/cm)	106
Volume Leachant (Litres)	0.884

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

30/04/2024 13:28:40

13:28:13 30/04/2024

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Determination of Fluoride using the Kone Analyser
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Determination of Hexavalent Chromium using Kone analyser
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

Test Completion Dates

Lab Sample No(s)	29689525	29689526	29689527	29689528	29689529	29689530	29689531	29689532	29689533	29689534
Customer Sample Ref.	TP 11	TP 15	TP 19	TP 60	TP 68	TP 75	TP 115	TP 119	TP 132	TP 142
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (w)	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		26-Apr-2024		
CEN 10:1 Leachate (1 Stage)	24-Apr-2024	24-Apr-2024		24-Apr-2024		24-Apr-2024		25-Apr-2024		
CEN Readings	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		29-Apr-2024		
Chromium III	29-Apr-2024	29-Apr-2024		29-Apr-2024		29-Apr-2024		29-Apr-2024		
Coronene	26-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		
Dissolved Metals by ICP-MS	29-Apr-2024	29-Apr-2024		29-Apr-2024		29-Apr-2024		26-Apr-2024		
Dissolved Organic/Inorganic Carbon	28-Apr-2024	26-Apr-2024		28-Apr-2024		26-Apr-2024		28-Apr-2024		
EPH by GCxGC-FID	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		
EPH CWG GC (S)	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		
Fluoride	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		26-Apr-2024		
GRO by GC-FID (S)	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		26-Apr-2024		
Hexavalent Chromium (s)	29-Apr-2024	29-Apr-2024		29-Apr-2024		29-Apr-2024		29-Apr-2024		
Loss on Ignition in soils	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		26-Apr-2024		
Mercury Dissolved	29-Apr-2024	29-Apr-2024		29-Apr-2024		30-Apr-2024		29-Apr-2024		
Metals in solid samples by OES	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		26-Apr-2024		
Moisture at 105C	24-Apr-2024	24-Apr-2024		24-Apr-2024		24-Apr-2024		24-Apr-2024		
PAH 16 & 17 Calc	29-Apr-2024	25-Apr-2024		25-Apr-2024		26-Apr-2024		25-Apr-2024		
PAH by GCMS	29-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		30-Apr-2024		
PCBs by GCMS	26-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		
pH	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		
pH Value of Filtered Water	26-Apr-2024	26-Apr-2024		26-Apr-2024		26-Apr-2024		29-Apr-2024		
Phenols by HPLC (W)	29-Apr-2024	29-Apr-2024		29-Apr-2024		29-Apr-2024		29-Apr-2024		
Sample description	24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024	25-Apr-2024	24-Apr-2024	24-Apr-2024	24-Apr-2024
Total Organic Carbon	25-Apr-2024	30-Apr-2024	25-Apr-2024	29-Apr-2024	29-Apr-2024	29-Apr-2024	30-Apr-2024	29-Apr-2024	26-Apr-2024	25-Apr-2024
TPH CWG GC (S)	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		26-Apr-2024		
VOC MS (S)	25-Apr-2024	25-Apr-2024		25-Apr-2024		25-Apr-2024		25-Apr-2024		

Lab Sample No(s)	29689535	29689536
Customer Sample Ref.	TP 152	TP 155
AGS Ref.		
Depth	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (w)		26-Apr-2024
CEN 10:1 Leachate (1 Stage)		25-Apr-2024
CEN Readings		29-Apr-2024
Chromium III		29-Apr-2024
Coronene		25-Apr-2024
Dissolved Metals by ICP-MS		26-Apr-2024
Dissolved Organic/Inorganic Carbon		28-Apr-2024
EPH by GCxGC-FID		29-Apr-2024
EPH CWG GC (S)		25-Apr-2024
Fluoride		26-Apr-2024
GRO by GC-FID (S)		25-Apr-2024
Hexavalent Chromium (s)		29-Apr-2024
Loss on Ignition in soils		26-Apr-2024
Mercury Dissolved		29-Apr-2024
Metals in solid samples by OES		26-Apr-2024
Moisture at 105C		24-Apr-2024
PAH 16 & 17 Calc		25-Apr-2024
PAH by GCMS		25-Apr-2024
PCBs by GCMS		25-Apr-2024
pH		25-Apr-2024
pH Value of Filtered Water		29-Apr-2024
Phenols by HPLC (W)		29-Apr-2024
Sample description	24-Apr-2024	24-Apr-2024
Total Organic Carbon	29-Apr-2024	29-Apr-2024
TPH CWG GC (S)		25-Apr-2024
VOC MS (S)		25-Apr-2024

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix 7

Waste Classification Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

D6VM2-J3V1H-CJIDT

Job name

6269

Description/Comments

Client: Fingal County Council
Engineer: Waterman Moylan

Project

Mooretown

Site

Swords, Co. Dublin

Classified by

Name:
Stephen Letch
Date:
14 Jun 2024 12:19 GMT
Telephone:
00353 86817 9449

Company:
Site Investigations Ltd
The Grange
12th Lock Road
Lucan
K78 F598

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	09 Oct 2019
Most recent 3 year Refresher	04 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Mooretown, Swords, Co. Dublin **Post Code** N/A

SIC for the process giving rise to the waste

43130 Test drilling and boring

Description of industry/producer giving rise to the waste

Site Investigation

Description of the specific process, sub-process and/or activity that created the waste

Soils recovered for environmental testing

Description of the waste

Natural soils

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	TP011-0.50	0.50	Non Hazardous		Pass	Pass	3
2	TP119-0.50	0.50	Non Hazardous		Pass	Pass	7
3	TP015-0.50	0.50	Non Hazardous		Pass	Pass	11
4	TP155-0.50	0.50	Non Hazardous		Pass	Pass	15
5	TP060-0.50	0.50	Non Hazardous		Pass	Pass	19
6	TP075-0.50	0.50	Non Hazardous		Pass	Pass	23

Related documents

#	Name	Description
1	240423-20.hwol	ALS Hawarden .hwol file used to populate the Job
2	Rilta Suite NEW	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Stephen Letch

Created date: 14 Jun 2024 12:19 GMT

Appendices	Page
Appendix A: Classifier defined and non EU CLP determinands	27
Appendix B: Rationale for selection of metal species	28
Appendix C: Version	29

Classification of sample: TP011-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP011-0.50
Sample Depth:
0.50 m
Moisture content:
11%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		<LOD
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		12 mg/kg	1.534	16.382 mg/kg	0.00164 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		104 mg/kg	1.233	114.172 mg/kg	0.0114 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		1.4 mg/kg	1.855	2.311 mg/kg	0.000231 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25.5 mg/kg	1.126	25.552 mg/kg	0.00256 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	17 mg/kg		15.13 mg/kg	0.00151 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.03 mg/kg	1.5	5.381 mg/kg	0.000538 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		32.7 mg/kg	2.637	76.735 mg/kg	0.00767 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.37 mg/kg	1.405	1.713 mg/kg	0.000171 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		55.2 mg/kg	2.469	121.312 mg/kg	0.0121 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		7.29 mg/kg	1.462	9.483 mg/kg	0.000948 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
15		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
16		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
17		acenaphthylene		205-917-1	208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
18		acenaphthene		201-469-6	83-32-9		<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20		phenanthrene		201-581-5	85-01-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
22		fluoranthene		205-912-4	206-44-0		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
23		pyrene		204-927-3	129-00-0		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
25		chrysene	601-048-00-0	205-923-4	218-01-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
26		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
27		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
29		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
30		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
31		benzo[ghi]perylene		205-883-8	191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
32		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
34		benzene	601-020-00-8	200-753-7	71-43-2		<0.0016 mg/kg		<0.0016 mg/kg	<0.00000016 %		<LOD
35		toluene	601-021-00-3	203-625-9	108-88-3		0.0219 mg/kg		0.0195 mg/kg	0.00000195 %	✓	
36		ethylbenzene	601-023-00-4	202-849-4	100-41-4		0.0018 mg/kg		0.0016 mg/kg	0.000000167 %	✓	
37		coronene		205-881-7	191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
38		pH			PH		8.94 pH		8.94 pH	8.94 pH		
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.0085 mg/kg		0.0076 mg/kg	0.000000763 %	✓	
									Total:	0.0401 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

toluene: (conc.: 1.95e-06%)
ethylbenzene: (conc.: 1.67e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 7.63e-07%)

WAC results for sample: TP011-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.486	3	5
2	LOI (loss on ignition)	%	2.51	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.0323	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	8.94	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0944	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0041	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.129	0.5	10
16	nickel	mg/kg	<0.004	0.4	10
17	lead	mg/kg	<0.002	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0161	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	108	500	800
26	TDS (total dissolved solids)	mg/kg	701	4,000	60,000

Key

User supplied data

Classification of sample: TP119-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP119-0.50
Sample Depth:
0.50 m
Moisture content:
17%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		**<LOD**
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		**<LOD**
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14.5 mg/kg	1.534	18.46 mg/kg	0.00185 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		139 mg/kg	1.233	142.308 mg/kg	0.0142 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		2 mg/kg	1.855	3.079 mg/kg	0.000308 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		34.9 mg/kg	1.126	32.614 mg/kg	0.00326 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	23 mg/kg		19.09 mg/kg	0.00191 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		**<LOD**
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.59 mg/kg	1.5	6.96 mg/kg	0.000696 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		51.2 mg/kg	2.637	112.049 mg/kg	0.0112 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.2 mg/kg	1.405	1.399 mg/kg	0.00014 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		73.8 mg/kg	2.469	151.254 mg/kg	0.0151 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13.5 mg/kg	1.462	16.377 mg/kg	0.00164 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6	mg/kg	1.923	<1.154	mg/kg	<0.000115 %		<LOD
16		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009	mg/kg		<0.009	mg/kg	<0.0000009 %		<LOD
17		acenaphthylene		205-917-1	208-96-8		<0.012	mg/kg		<0.012	mg/kg	<0.0000012 %		<LOD
18		acenaphthene		201-469-6	83-32-9		<0.008	mg/kg		<0.008	mg/kg	<0.0000008 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene		201-581-5	85-01-8		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<LOD
22		fluoranthene		205-912-4	206-44-0		<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<LOD
23		pyrene		204-927-3	129-00-0		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
25		chrysene	601-048-00-0	205-923-4	218-01-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
26		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
27		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
29		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018	mg/kg		<0.018	mg/kg	<0.0000018 %		<LOD
30		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023	mg/kg		<0.023	mg/kg	<0.0000023 %		<LOD
31		benzo[ghi]perylene		205-883-8	191-24-2		<0.024	mg/kg		<0.024	mg/kg	<0.0000024 %		<LOD
32		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021	mg/kg		<0.021	mg/kg	<0.0000021 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005	mg/kg		<0.0005	mg/kg	<0.00000005 %		<LOD
34		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
35		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
36		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
37		coronene		205-881-7	191-07-1		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
38		pH			PH		7.11	pH		7.11	pH	7.11 pH		
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<LOD
											Total:	0.0516 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP119-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.725	3	5
2	LOI (loss on ignition)	%	3.17	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	7.11	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0065	0.5	2
10	barium	mg/kg	0.0319	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	0.0101	0.5	10
13	copper	mg/kg	0.0219	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.0831	0.5	10
16	nickel	mg/kg	0.0218	0.4	10
17	lead	mg/kg	0.0066	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0521	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	37	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	36.8	500	800
26	TDS (total dissolved solids)	mg/kg	207	4,000	60,000

Key

User supplied data

Classification of sample: TP015-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP015-0.50
Sample Depth:
0.50 m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		<LOD
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		10.4 mg/kg	1.534	13.879 mg/kg	0.00139 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		188 mg/kg	1.233	201.75 mg/kg	0.0202 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		1.24 mg/kg	1.855	2.001 mg/kg	0.0002 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24.6 mg/kg	1.126	24.096 mg/kg	0.00241 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	14.5 mg/kg		12.615 mg/kg	0.00126 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.07 mg/kg	1.5	5.312 mg/kg	0.000531 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		32.6 mg/kg	2.637	74.782 mg/kg	0.00748 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.06 mg/kg	1.405	1.296 mg/kg	0.00013 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		50.8 mg/kg	2.469	109.133 mg/kg	0.0109 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.3 mg/kg	1.462	8.011 mg/kg	0.000801 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
15		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
16		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
17		acenaphthylene		205-917-1	208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
18		acenaphthene		201-469-6	83-32-9		<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20		phenanthrene		201-581-5	85-01-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
22		fluoranthene		205-912-4	206-44-0		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
23		pyrene		204-927-3	129-00-0		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
25		chrysene	601-048-00-0	205-923-4	218-01-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
26		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
27		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
29		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
30		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
31		benzo[ghi]perylene		205-883-8	191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
32		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
34		benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
35		toluene	601-021-00-3	203-625-9	108-88-3		0.0305 mg/kg		0.0265 mg/kg	0.00000265 %	✓	
36		ethylbenzene	601-023-00-4	202-849-4	100-41-4		0.0037 mg/kg		0.0032 mg/kg	0.000000322 %	✓	
37		coronene		205-881-7	191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
38		pH			PH		8.72 pH		8.72 pH	8.72 pH		
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.0208 mg/kg		0.0181 mg/kg	0.00000181 %	✓	
									Total:	0.0465 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

toluene: (conc.: 2.65e-06%)
ethylbenzene: (conc.: 3.22e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 1.81e-06%)

WAC results for sample: TP015-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.533	3	5
2	LOI (loss on ignition)	%	3.19	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.055	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	8.72	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0869	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0048	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.153	0.5	10
16	nickel	mg/kg	<0.004	0.4	10
17	lead	mg/kg	<0.002	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0265	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	<30	500	800
26	TDS (total dissolved solids)	mg/kg	656	4,000	60,000

Key

User supplied data

Classification of sample: TP155-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP155-0.50
Sample Depth:
0.50 m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		**<LOD**
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		**<LOD**
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		13.9 mg/kg	1.534	18.336 mg/kg	0.00183 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		127 mg/kg	1.233	134.722 mg/kg	0.0135 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		1.74 mg/kg	1.855	2.775 mg/kg	0.000278 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28.8 mg/kg	1.126	27.886 mg/kg	0.00279 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	20.3 mg/kg		17.458 mg/kg	0.00175 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		**<LOD**
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.08 mg/kg	1.5	6.554 mg/kg	0.000655 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		43.3 mg/kg	2.637	98.185 mg/kg	0.00982 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.17 mg/kg	1.405	1.414 mg/kg	0.000141 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		67.3 mg/kg	2.469	142.918 mg/kg	0.0143 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	13.826 mg/kg	0.00138 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
15		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
16		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
17		acenaphthylene		205-917-1	208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
18		acenaphthene		201-469-6	83-32-9		<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
20		phenanthrene		201-581-5	85-01-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
22		fluoranthene		205-912-4	206-44-0		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
23		pyrene		204-927-3	129-00-0		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
25		chrysene	601-048-00-0	205-923-4	218-01-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
26		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
27		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
29		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
30		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
31		benzo[ghi]perylene		205-883-8	191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
32		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
34		benzene	601-020-00-8	200-753-7	71-43-2		<0.0015 mg/kg		<0.0015 mg/kg	<0.00000015 %		<LOD
35		toluene	601-021-00-3	203-625-9	108-88-3		0.0138 mg/kg		0.0119 mg/kg	0.00000119 %	✓	
36		ethylbenzene	601-023-00-4	202-849-4	100-41-4		0.0015 mg/kg		0.0013 mg/kg	0.000000133 %	✓	
37		coronene		205-881-7	191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
38		pH			PH		8.62 pH		8.62 pH	8.62 pH		
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.0082 mg/kg		0.0071 mg/kg	0.000000713 %	✓	
									Total:	0.0477 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

toluene: (conc.: 1.19e-06%)
ethylbenzene: (conc.: 1.33e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 7.13e-07%)

WAC results for sample: TP155-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.609	3	5
2	LOI (loss on ignition)	%	4.65	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.0236	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	8.62	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0661	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.007	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.0811	0.5	10
16	nickel	mg/kg	0.0044	0.4	10
17	lead	mg/kg	<0.002	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0208	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	31.4	500	800
26	TDS (total dissolved solids)	mg/kg	811	4,000	60,000

Key

User supplied data

Classification of sample: TP060-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP060-0.50
Sample Depth:
0.50 m
Moisture content:
10%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		<LOD
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		12.4 mg/kg	1.534	17.118 mg/kg	0.00171 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		113 mg/kg	1.233	125.446 mg/kg	0.0125 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		1.89 mg/kg	1.855	3.155 mg/kg	0.000315 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23.4 mg/kg	1.126	23.711 mg/kg	0.00237 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	16.2 mg/kg		14.58 mg/kg	0.00146 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.37 mg/kg	1.5	5.9 mg/kg	0.00059 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		39.2 mg/kg	2.637	93.022 mg/kg	0.0093 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.58 mg/kg	1.405	1.998 mg/kg	0.0002 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		56.2 mg/kg	2.469	124.897 mg/kg	0.0125 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		7.55 mg/kg	1.462	9.931 mg/kg	0.000993 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6	mg/kg	1.923	<1.154	mg/kg	<0.000115 %		<LOD
16		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009	mg/kg		<0.009	mg/kg	<0.0000009 %		<LOD
17		acenaphthylene		205-917-1	208-96-8		<0.012	mg/kg		<0.012	mg/kg	<0.0000012 %		<LOD
18		acenaphthene		201-469-6	83-32-9		<0.008	mg/kg		<0.008	mg/kg	<0.0000008 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene		201-581-5	85-01-8		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
21		anthracene		204-371-1	120-12-7		<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<LOD
22		fluoranthene		205-912-4	206-44-0		<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<LOD
23		pyrene		204-927-3	129-00-0		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
25		chrysene	601-048-00-0	205-923-4	218-01-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
26		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
27		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
29		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018	mg/kg		<0.018	mg/kg	<0.0000018 %		<LOD
30		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023	mg/kg		<0.023	mg/kg	<0.0000023 %		<LOD
31		benzo[ghi]perylene		205-883-8	191-24-2		<0.024	mg/kg		<0.024	mg/kg	<0.0000024 %		<LOD
32		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021	mg/kg		<0.021	mg/kg	<0.0000021 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005	mg/kg		<0.0005	mg/kg	<0.00000005 %		<LOD
34		benzene	601-020-00-8	200-753-7	71-43-2		<0.0012	mg/kg		<0.0012	mg/kg	<0.00000012 %		<LOD
35		toluene	601-021-00-3	203-625-9	108-88-3		<0.0029	mg/kg		<0.0029	mg/kg	<0.00000029 %		<LOD
36		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
37		coronene		205-881-7	191-07-1		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
38		pH			PH		8.68	pH		8.68	pH	8.68 pH		
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<LOD
											Total:	0.0432 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP060-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.637	3	5
2	LOI (loss on ignition)	%	2.96	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.0091	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	8.68	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0801	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.021	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.105	0.5	10
16	nickel	mg/kg	0.0126	0.4	10
17	lead	mg/kg	<0.002	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0142	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	6.61	10	150
23	sulphate	mg/kg	<20	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	54.5	500	800
26	TDS (total dissolved solids)	mg/kg	883	4,000	60,000

Key

User supplied data

Classification of sample: TP075-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP075-0.50
Sample Depth:
0.50 m
Moisture content:
9.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		**<LOD**
2	confirm TPH has NOT arisen from diesel or petrol					☑					
3	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<0.6 mg/kg	1.197	<0.718 mg/kg	<0.0000718 %		**<LOD**
4	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		11.1 mg/kg	1.534	15.426 mg/kg	0.00154 %	✓	
5	barium { barium sulphide }	016-002-00-X	244-214-4	21109-95-5		80.2 mg/kg	1.233	89.627 mg/kg	0.00896 %	✓	
6	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		1.24 mg/kg	1.855	2.083 mg/kg	0.000208 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24.2 mg/kg	1.126	24.685 mg/kg	0.00247 %	✓	
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	14.7 mg/kg		13.318 mg/kg	0.00133 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		**<LOD**
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.03 mg/kg	1.5	6.837 mg/kg	0.000684 %	✓	
11	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		31.5 mg/kg	2.637	75.248 mg/kg	0.00752 %	✓	
12	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.39 mg/kg	1.405	1.769 mg/kg	0.000177 %	✓	
13	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		55.2 mg/kg	2.469	123.492 mg/kg	0.0123 %	✓	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		7.79 mg/kg	1.462	10.315 mg/kg	0.00103 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.6	mg/kg	1.923	<1.154	mg/kg	<0.000115 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
16		naphthalene				<0.009	mg/kg		<0.009	mg/kg	<0.0000009 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.012	mg/kg		<0.012	mg/kg	<0.0000012 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.008	mg/kg		<0.008	mg/kg	<0.0000008 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[b]fluoranthene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
27		benzo[k]fluoranthene				<0.014	mg/kg		<0.014	mg/kg	<0.0000014 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
28		benzo[a]pyrene; benzo[def]chrysene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
29		indeno[123-cd]pyrene				<0.018	mg/kg		<0.018	mg/kg	<0.0000018 %		<LOD
			205-893-2	193-39-5									
30		dibenz[a,h]anthracene				<0.023	mg/kg		<0.023	mg/kg	<0.0000023 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
31		benzo[ghi]perylene				<0.024	mg/kg		<0.024	mg/kg	<0.0000024 %		<LOD
			205-883-8	191-24-2									
32		polychlorobiphenyls; PCB				<0.021	mg/kg		<0.021	mg/kg	<0.0000021 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.0005	mg/kg		<0.0005	mg/kg	<0.00000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.0014	mg/kg		<0.0014	mg/kg	<0.00000014 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		toluene				0.0039	mg/kg		0.0036	mg/kg	0.000000361 %	✓	
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		coronene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
			205-881-7	191-07-1									
38		pH				8.94	pH		8.94	pH	8.94 pH		
				PH									
39		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				0.0024	mg/kg		0.0022	mg/kg	0.000000225 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
										Total:	0.0375 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 3.61e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 2.25e-07%)

WAC results for sample: TP075-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.826	3	5
2	LOI (loss on ignition)	%	2.41	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.0064	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<10	100	-
7	pH	pH	8.94	-	>6
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.005	0.5	2
10	barium	mg/kg	0.0694	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0063	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	0.125	0.5	10
16	nickel	mg/kg	<0.004	0.4	10
17	lead	mg/kg	0.0085	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0418	4	50
21	chloride	mg/kg	<20	800	15,000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1,000	20,000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	<30	500	800
26	TDS (total dissolved solids)	mg/kg	692	4,000	60,000

Key

User supplied data

Appendix A: Classifier defined and non EU CLP determinands

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

barium sulphide (EC Number: 244-214-4, CAS Number: 21109-95-5)

EU CLP index number: 016-002-00-X
Description/Comments:
Additional Hazard Statement(s): EUH031 >= 0.8 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

EU CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

EU CLP index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case scenario.

arsenic {arsenic pentoxide}

Arsenic pentoxide used as most hazardous species.

barium {barium sulphide}

Chromium VI at limits of detection. Barium sulphide used as the next most hazardous species. No chromate present.

cadmium {cadmium sulfate}

Cadmium sulphate used as the most hazardous species.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Chromium VI at limits of detection. Lead compounds used as the next most hazardous species. No chromate present.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Chromium VI at limits of detection. Nickel sulphate used as the next most hazardous species. No chromate present.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc sulphate}

Chromium VI at limits of detection. Zinc sulphate used as the next most hazardous species. No chromate present.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1.NI - Jan 2021
HazWasteOnline Classification Engine Version: 2024.158.6092.11254 (06 Jun 2024)
HazWasteOnline Database: 2024.158.6092.11254 (06 Jun 2024)

This classification utilises the following guidance and legislation:
WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
17th ATP - Regulation (EU) 2021/849 of 11 March 2021
18th ATP - Regulation (EU) 2022/692 of 16 February 2022
19th ATP - Regulation (EU) 2023/1434 of 25 April 2023
20th ATP - Regulation (EU) 2023/1435 of 2 May 2023
21st ATP - Regulation (EU) 2024/197 of 19 October 2023

Appendix 8

Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Cable Percussive Boreholes					
BH01	716572.033	747920.327	29.45	316646.435	247897.042
BH02	716766.900	747885.312	27.55	316841.344	247862.021
BH03	716427.898	747812.310	29.70	316502.270	247789.001
BH04	716609.677	747778.691	29.28	316684.088	247755.376
BH05	716495.907	747705.068	31.64	316570.295	247681.736
BH06	716714.708	747672.505	29.25	316789.143	247649.168
BH07	716451.230	747542.916	35.52	316525.610	247519.549
BH08	716591.844	747491.784	35.23	316666.254	247468.407
BH09	716381.869	747404.358	38.82	316456.235	247380.960
BH10	716579.641	747349.702	37.95	316654.050	247326.294
Trial Pits					
TP001	716609.563	748010.870	27.03	316683.972	247987.605
TP002	716615.495	747988.684	27.53	316689.905	247965.414
TP003	716589.053	747973.887	29.49	316663.458	247950.614
TP004	716704.111	747963.599	28.71	316778.540	247940.325
TP005	716626.221	747964.615	27.00	316700.634	247941.340
TP006	716609.195	747952.448	28.52	316683.604	247929.170
TP007	716683.958	747949.521	28.12	316758.383	247926.243
TP008	716722.665	747948.396	29.05	316797.099	247925.118
TP009	716584.442	747944.908	29.60	316658.846	247921.629
TP010	716554.300	747936.461	42.13	316628.698	247913.180
TP011	716630.102	747933.703	27.17	316704.516	247910.422
TP012	716600.897	747926.049	36.74	316675.305	247902.766
TP013	716691.160	747922.715	25.66	316765.587	247899.432
TP014	716753.831	747914.567	27.96	316828.272	247891.282
TP015	716581.885	747911.334	29.40	316656.289	247888.047
TP016	716618.511	747911.846	28.29	316692.923	247888.560
TP017	716699.051	747900.392	25.04	316773.480	247877.104
TP018	716550.827	747904.223	29.38	316625.224	247880.935
TP019	716785.558	747897.342	27.97	316860.005	247874.054
TP020	716760.933	747896.965	27.41	316835.375	247873.676
TP021	716748.447	747892.965	27.30	316822.887	247869.676
TP022	716713.967	747892.604	26.08	316788.399	247869.314
TP023	716603.363	747895.644	28.76	316677.772	247872.354
TP024	716568.642	747887.484	28.82	316643.043	247864.192
TP025	716651.968	747890.274	26.07	316726.387	247866.983
TP026	716516.490	747887.419	28.64	316590.880	247864.127
TP027	716811.059	747883.774	28.54	316885.512	247860.483
TP028	716793.537	747878.329	28.03	316867.986	247855.037
TP029	716683.201	747869.493	24.74	316757.627	247846.198
TP030	716755.509	747871.328	27.56	316829.950	247848.034
TP031	716775.782	747872.842	27.73	316850.228	247849.548
TP032	716780.944	747857.513	27.74	316855.391	247834.216
TP033	716790.450	747825.642	27.93	316864.899	247802.338

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Trial Pits					
TP034	716452.454	747824.103	28.89	316526.831	247800.797
TP035	716559.150	747826.582	27.17	316633.550	247803.277
TP036	716605.612	747820.920	27.23	316680.022	247797.614
TP037	716406.738	747851.104	29.14	316481.105	247827.803
TP038	716735.568	747843.305	27.81	316810.005	247820.005
TP039	716523.061	747837.742	27.39	316597.453	247814.439
TP040	716402.089	747819.589	29.73	316476.456	247796.281
TP041	716758.688	747820.879	27.88	316833.130	247797.574
TP042	716619.184	747813.901	27.50	316693.597	247790.594
TP043	716658.257	747809.386	27.18	316732.678	247786.078
TP044	716561.088	747801.194	27.94	316635.489	247777.883
TP045	716595.392	747807.191	28.30	316669.800	247783.882
TP046	716418.352	747813.026	29.72	316492.722	247789.717
TP047	716639.960	747800.607	28.01	316714.377	247777.297
TP048	716428.533	747796.579	29.93	316502.905	247773.267
TP049	716618.639	747796.281	28.58	316693.052	247772.970
TP050	716400.289	747795.061	30.34	316474.655	247771.748
TP051	716534.936	747797.229	28.36	316609.331	247773.917
TP052	716458.519	747792.880	29.57	316532.898	247769.567
TP053	716664.378	747792.405	28.37	316738.801	247769.093
TP054	716602.452	747787.909	29.00	316676.862	247764.596
TP055	716566.564	747782.896	28.52	316640.966	247759.582
TP056	716646.553	747781.937	28.98	316720.972	247758.623
TP057	716470.921	747780.312	29.73	316545.303	247756.996
TP058	716492.018	747777.669	29.57	316566.404	247754.353
TP059	716418.842	747778.809	30.37	316493.213	247755.493
TP060	716687.368	747771.987	28.78	316761.796	247748.671
TP061	716612.927	747769.359	29.46	316687.339	247746.042
TP062	716573.393	747769.593	29.08	316647.797	247746.276
TP063	716438.512	747766.760	30.43	316512.887	247743.441
TP064	716652.294	747764.395	29.49	316726.714	247741.077
TP065	716392.588	747760.185	31.24	316466.953	247736.864
TP066	716595.883	747758.743	29.52	316670.291	247735.423
TP067	716477.895	747754.210	30.28	316552.278	247730.889
TP068	716492.630	747750.627	30.22	316567.017	247727.305
TP069	716565.175	747751.551	29.25	316639.577	247728.230
TP070	716614.671	747745.616	29.78	316689.084	247722.294
TP071	716631.944	747748.387	29.71	316706.360	247725.065
TP072	716404.994	747749.212	31.49	316479.362	247725.889
TP073	716456.953	747746.817	30.73	316531.332	247723.494
TP074	716710.284	747748.004	29.08	316784.717	247724.683
TP075	716727.539	747739.164	28.31	316801.976	247715.841
TP076	716428.835	747738.094	31.57	316503.208	247714.769
TP077	716581.489	747734.426	29.86	316655.895	247711.101

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Trial Pits					
TP078	716603.974	747732.118	30.24	316678.384	247708.793
TP079	716392.055	747732.920	31.90	316466.420	247709.594
TP080	716475.766	747729.148	31.16	316550.149	247705.821
TP081	716500.463	747728.923	30.77	316574.851	247705.596
TP082	716693.346	747735.201	34.57	316767.775	247711.877
TP083	716706.328	747722.325	29.27	316780.760	247698.998
TP084	716455.011	747720.168	31.52	316529.390	247696.839
TP085	716670.622	747728.864	29.76	316745.047	247705.538
TP087	716504.110	747714.470	31.10	316578.499	247691.140
TP088	716720.171	747711.303	28.61	316794.606	247687.974
TP089	716479.415	747707.791	31.80	316553.799	247684.460
TP090	716426.757	747707.050	32.34	316501.130	247683.718
TP091	716639.199	747712.484	30.38	316713.617	247689.155
TP092	716522.655	747704.466	30.96	316597.048	247681.134
TP093	716675.768	747708.098	29.84	316750.194	247684.768
TP094	716384.114	747705.618	32.67	316458.478	247682.286
TP095	716609.595	747698.825	30.83	316684.007	247675.493
TP096	716439.157	747692.494	32.41	316513.533	247669.159
TP097	716687.371	747689.586	29.66	316761.800	247666.252
TP097	716687.034	747689.994	29.63	316761.463	247666.660
TP098	716474.229	747691.561	32.13	316548.612	247668.226
TP099	716499.802	747690.970	31.68	316574.191	247667.635
TP100	716408.432	747682.677	32.79	316482.801	247659.340
TP101	716710.241	747682.888	28.99	316784.675	247659.553
TP102	716659.134	747676.578	30.43	316733.557	247653.241
TP103	716393.514	747673.184	33.14	316467.880	247649.845
TP104	716455.213	747671.219	32.40	316529.592	247647.880
TP105	716417.438	747670.268	32.84	316491.809	247646.928
TP106	716679.917	747664.805	30.07	316754.344	247641.466
TP107	716521.324	747661.937	31.98	316595.718	247638.596
TP108	716406.845	747654.459	33.30	316481.214	247631.116
TP109	716705.826	747655.180	29.68	316780.259	247631.839
TP110	716502.755	747651.885	32.48	316577.145	247628.542
TP111	716389.429	747641.773	33.67	316463.795	247618.427
TP112	716475.776	747641.655	32.85	316550.160	247618.309
TP113	716447.513	747632.418	33.26	316521.891	247609.070
TP114	716464.868	747616.943	33.54	316539.250	247593.592
TP115	716418.025	747624.798	33.83	316492.397	247601.448
TP116	716479.002	747609.643	33.73	316553.387	247586.290
TP117	716441.685	747604.018	34.22	316516.062	247580.664
TP118	716413.144	747600.364	34.73	316487.515	247577.009
TP119	716457.422	747597.382	34.30	316531.803	247574.027
TP120	716393.938	747596.229	34.83	316468.305	247572.873
TP121	716372.457	747594.059	35.09	316446.819	247570.702

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Trial Pits					
TP122	716434.654	747589.162	34.64	316509.030	247565.805
TP123	716405.981	747582.256	38.34	316480.351	247558.897
TP124	716466.075	747582.846	34.62	316540.458	247559.488
TP125	716495.984	747580.740	34.28	316570.373	247557.381
TP126	716386.131	747579.306	35.51	316460.497	247555.946
TP127	716402.106	747563.649	35.65	316476.475	247540.286
TP128	716450.151	747560.404	35.36	316524.530	247537.041
TP129	716381.956	747557.503	35.93	316456.321	247534.139
TP130	716475.187	747553.964	35.04	316549.572	247530.599
TP131	716424.714	747557.937	35.72	316499.088	247534.573
TP132	716502.424	747552.286	34.40	316576.815	247528.921
TP133	716494.790	747537.923	34.99	316569.179	247514.555
TP134	716461.536	747533.659	35.69	316535.918	247510.290
TP135	716410.060	747532.522	36.22	316484.431	247509.152
TP136	716377.325	747531.145	36.54	316451.689	247507.775
TP137	716526.930	747529.179	34.90	316601.326	247505.809
TP138	716477.935	747522.083	35.83	316552.321	247498.711
TP139	716452.324	747523.223	35.95	316526.704	247499.852
TP140	716387.299	747517.104	36.76	316461.665	247493.731
TP141	716542.824	747512.569	34.86	316617.224	247489.196
TP142	716503.870	747510.766	35.76	316578.261	247487.392
TP143	716375.897	747507.282	37.21	316450.261	247483.907
TP144	716524.953	747502.296	35.69	316599.349	247478.921
TP145	716400.699	747495.559	37.03	316475.068	247472.181
TP146	716570.557	747493.133	35.38	316644.963	247469.756
TP147	716502.924	747492.083	35.95	316577.315	247468.705
TP148	716550.853	747488.134	35.38	316625.255	247464.756
TP149	716475.584	747482.272	36.83	316549.970	247458.892
TP150	716453.694	747484.226	37.11	316528.075	247460.846
TP151	716372.106	747478.059	38.10	316446.470	247454.677
TP152	716423.824	747477.048	37.23	316498.199	247453.666
TP153	716527.050	747470.503	36.32	316601.447	247447.121
TP154	716577.878	747471.364	35.67	316652.285	247447.982
TP155	716398.540	747466.969	37.91	316472.909	247443.585
TP156	716553.960	747464.506	36.15	316628.362	247441.123
TP157	716615.171	747467.846	35.57	316689.586	247444.464
TP158	716498.893	747462.740	36.77	316573.284	247439.356
TP159	716471.094	747460.844	37.41	316545.479	247437.459
TP160	716413.071	747450.005	38.17	316487.444	247426.617
TP161	716377.642	747447.875	38.74	316452.007	247424.487
TP162	716566.449	747447.203	36.44	316640.854	247423.816
TP163	716478.632	747445.005	37.46	316553.019	247421.617
TP164	716517.609	747442.534	37.10	316592.004	247419.146
TP165	716605.273	747439.166	36.47	316679.687	247415.777

Survey Data

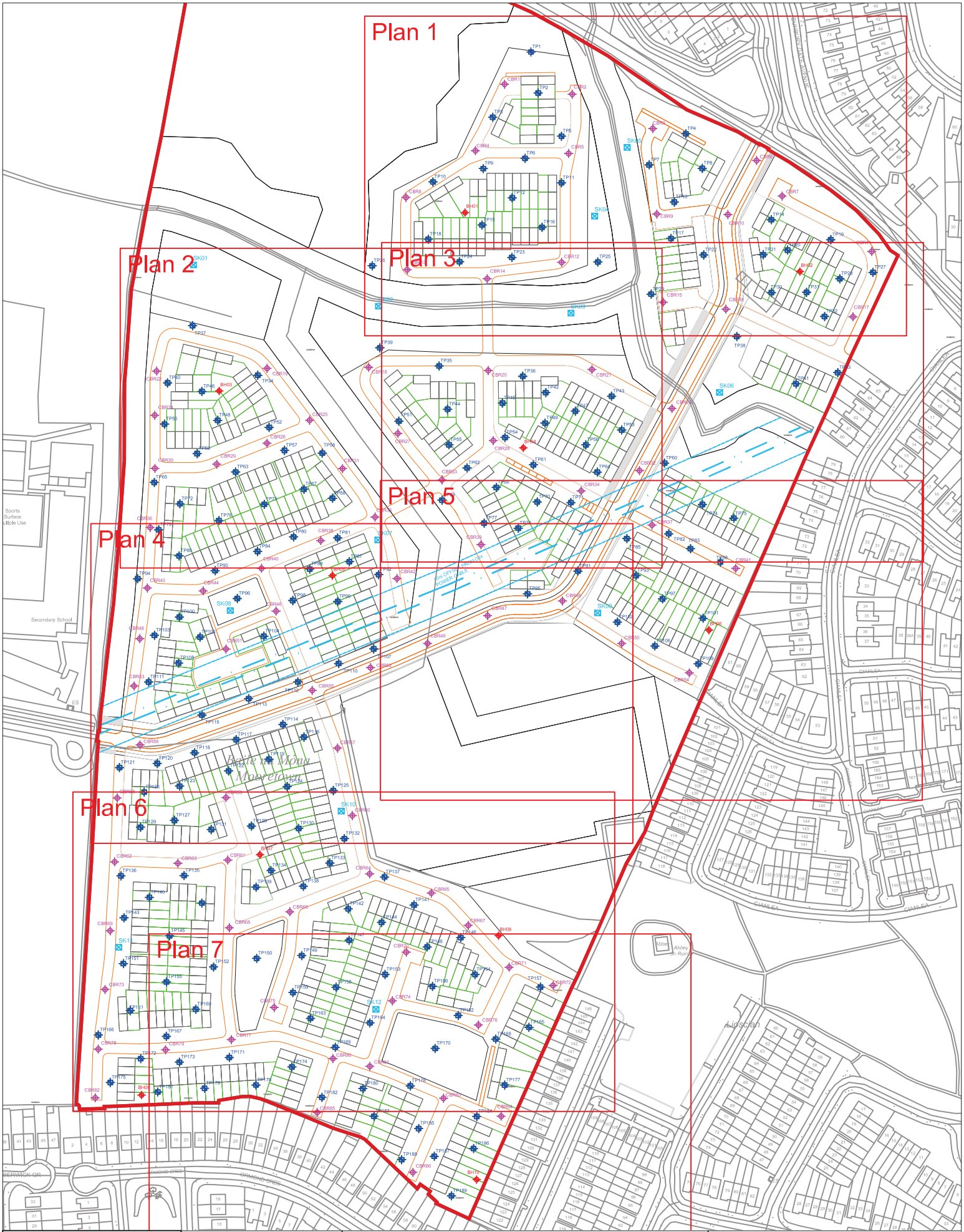
Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Trial Pits					
TP166	716360.722	747437.367	39.64	316435.084	247413.976
TP167	716400.114	747437.429	38.88	316474.484	247414.039
TP168	716587.247	747429.771	36.60	316661.657	247406.380
TP169	716495.895	747430.310	37.60	316570.285	247406.919
TP170	716555.452	747427.020	36.98	316629.855	247403.628
TP171	716435.832	747423.071	38.47	316510.210	247399.678
TP172	716384.660	747421.203	39.27	316459.027	247397.809
TP173	716404.875	747420.976	39.04	316479.246	247397.582
TP174	716471.609	747417.349	38.12	316545.994	247393.955
TP175	716365.435	747410.436	39.91	316439.798	247387.040
TP176	716454.234	747408.877	38.55	316528.616	247385.481
TP177	716590.925	747405.336	37.48	316665.336	247381.940
TP178	716541.294	747405.334	37.66	316615.694	247381.938
TP179	716419.163	747412.237	38.89	316493.537	247388.841
TP180	716513.665	747403.918	37.99	316588.059	247380.521
TP181	716390.832	747409.533	39.14	316465.200	247386.137
TP182	716487.803	747400.513	38.28	316562.192	247377.115
TP183	716519.505	747387.909	38.17	316593.901	247364.509
TP184	716579.415	747388.695	37.54	316653.824	247365.295
TP185	716545.608	747381.561	37.96	316620.009	247358.160
TP186	716578.927	747370.003	37.76	316653.336	247346.599
TP187	716555.308	747365.137	38.24	316629.712	247341.732
TP188	716535.833	747370.599	38.31	316610.232	247347.195
TP189	716576.718	747347.366	37.98	316651.126	247323.957
Soakaway Tests					
SA01	716405.802	747894.295	27.85	316480.169	247871.004
SA02	716521.911	747874.225	28.89	316596.303	247850.930
SA03	716634.967	747869.235	27.39	316709.383	247845.940
SA04	716650.396	747915.350	25.62	316724.814	247892.065
SA05	716656.797	747954.674	24.94	316731.216	247931.397
SA06	716718.405	747806.941	26.99	316792.839	247783.633
SA07	716520.061	747724.275	30.56	316594.454	247700.948
SA08	716434.075	747682.918	32.52	316508.450	247659.581
SA09	716650.714	747683.455	30.47	316725.135	247660.120
SA10	716501.396	747568.651	34.16	316575.786	247545.290
SA11	716374.141	747490.063	37.58	316448.505	247466.684
SA12	716520.764	747451.088	36.89	316595.159	247427.701
California Bearing Ratio Tests					
CBR01	716595.165	748002.251	28.44	316669.571	247978.984
CBR02	716629.664	747990.008	25.86	316704.077	247966.739
CBR03	716685.375	747962.007	28.42	316759.800	247938.732
CBR04	716575.105	747959.090	29.74	316649.507	247935.814
CBR05	716628.010	747955.309	26.86	316702.423	247932.032
CBR06	716743.443	747947.499	28.98	316817.881	247924.221

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
California Bearing Ratio Tests					
CBR07	716759.356	747927.889	28.38	316833.798	247904.607
CBR08	716546.639	747924.908	29.55	316621.035	247901.624
CBR09	716698.603	747918.763	25.76	316773.032	247895.479
CBR10	716728.040	747914.863	28.13	316802.475	247891.578
CBR11	716812.122	747884.676	28.50	316886.575	247861.385
CBR12	716628.639	747890.528	27.68	316703.053	247867.237
CBR13	716536.702	747883.007	28.47	316611.097	247859.714
CBR14	716589.095	747882.298	28.49	316663.501	247859.005
CBR15	716705.076	747887.484	25.54	316779.506	247864.193
CBR16	716721.857	747864.592	26.72	316796.291	247841.296
CBR17	716798.860	747859.442	28.10	316873.311	247836.146
CBR18	716518.888	747829.463	27.76	316593.279	247806.158
CBR19	716455.723	747825.098	28.65	316530.101	247801.792
CBR20	716586.474	747824.609	27.09	316660.880	247801.304
CBR21	716649.874	747825.011	26.25	316724.293	247801.706
CBR22	716389.581	747829.378	29.64	316463.945	247806.072
CBR23	716690.927	747807.917	27.38	316765.355	247784.609
CBR24	716394.510	747803.070	30.13	316468.875	247779.759
CBR25	716482.388	747802.166	28.81	316556.772	247778.855
CBR26	716456.079	747782.110	29.90	316530.457	247758.795
CBR27	716536.326	747794.848	28.38	316610.721	247771.536
CBR28	716586.291	747784.404	28.94	316660.697	247761.090
CBR29	716425.564	747771.944	30.51	316499.936	247748.626
CBR30	716392.554	747772.483	30.87	316466.919	247749.165
CBR31	716500.762	747769.300	29.75	316575.150	247745.982
CBR32	716680.357	747769.158	29.04	316754.783	247745.841
CBR33	716561.527	747761.652	29.04	316635.928	247738.333
CBR34	716644.512	747750.982	29.75	316718.931	247727.661
CBR35	716521.642	747738.446	30.13	316596.035	247715.122
CBR36	716390.331	747735.464	31.94	316464.696	247712.138
CBR37	716679.674	747733.507	29.55	316754.101	247710.183
CBR38	716486.962	747727.402	31.06	316561.348	247704.075
CBR39	716580.675	747722.782	30.15	316655.081	247699.455
CBR40	716460.227	747711.098	31.77	316534.607	247687.767
CBR41	716727.443	747713.221	28.42	316801.880	247689.892
CBR42	716532.374	747705.616	30.76	316606.769	247682.285
CBR43	716388.749	747701.875	32.67	316463.114	247678.542
CBR44	716421.352	747701.313	32.55	316495.724	247677.980
CBR45	716630.422	747686.135	30.92	316704.839	247662.800
CBR46	716465.214	747682.388	32.20	316539.595	247659.051
CBR47	716589.069	747685.864	31.52	316663.477	247662.529
CBR48	716381.850	747668.597	33.12	316456.214	247645.257
CBR49	716550.763	747665.759	31.75	316625.163	247642.419
CBR50	716667.371	747664.220	30.53	316741.796	247640.880

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
California Bearing Ratio Tests					
CBR51	716434.143	747660.185	32.80	316508.518	247636.843
CBR52	716517.288	747651.601	32.00	316591.681	247628.258
CBR53	716374.983	747633.136	34.02	316449.346	247609.788
CBR54	716704.320	747651.496	29.80	316778.753	247628.154
CBR55	716483.055	747638.216	32.82	316557.441	247614.870
CBR56	716363.911	747600.743	34.80	316438.272	247577.388
CBR57	716490.322	747606.539	33.75	316564.709	247583.186
CBR58	716377.762	747579.114	35.53	316452.126	247555.754
CBR59	716436.179	747581.180	34.87	316510.555	247557.821
CBR60	716505.388	747567.500	34.09	316579.779	247544.139
CBR61	716434.450	747528.253	35.95	316508.826	247504.883
CBR62	716371.076	747542.111	36.47	316445.439	247518.743
CBR63	716408.470	747534.314	36.23	316482.841	247510.945
CBR64	716517.258	747530.193	34.99	316591.652	247506.824
CBR65	716545.474	747518.307	34.56	316619.874	247494.935
CBR66	716473.320	747507.065	36.11	316547.705	247483.690
CBR67	716574.685	747502.365	35.36	316649.091	247478.990
CBR68	716432.906	747499.943	36.85	316507.282	247476.566
CBR69	716365.872	747502.772	37.50	316440.234	247479.396
CBR70	716539.512	747485.611	35.76	316613.911	247462.232
CBR71	716583.680	747488.777	35.49	316658.089	247465.399
CBR72	716624.478	747465.064	35.60	316698.895	247441.681
CBR73	716363.173	747465.939	38.70	316437.535	247442.555
CBR74	716527.464	747456.668	36.63	316601.861	247433.283
CBR75	716461.698	747451.428	37.62	316536.081	247428.041
CBR76	716570.827	747443.417	36.40	316645.233	247420.029
CBR77	716433.299	747434.383	38.20	316507.676	247410.992
CBR78	716359.120	747430.055	39.90	316433.481	247406.663
CBR79	716396.306	747429.964	39.00	316470.675	247406.572
CBR80	716492.000	747422.948	37.88	316566.390	247399.555
CBR81	716515.849	747419.221	37.66	316590.244	247395.827
CBR82	716364.997	747410.872	39.96	316439.360	247387.476
CBR83	716561.886	747401.578	37.47	316636.291	247378.181
CBR84	716588.563	747392.878	37.49	316662.974	247369.479
CBR85	716492.017	747397.752	38.15	316566.407	247374.354
CBR86	716549.738	747363.200	38.36	316624.141	247339.795



Site Investigations Ltd
The Grange
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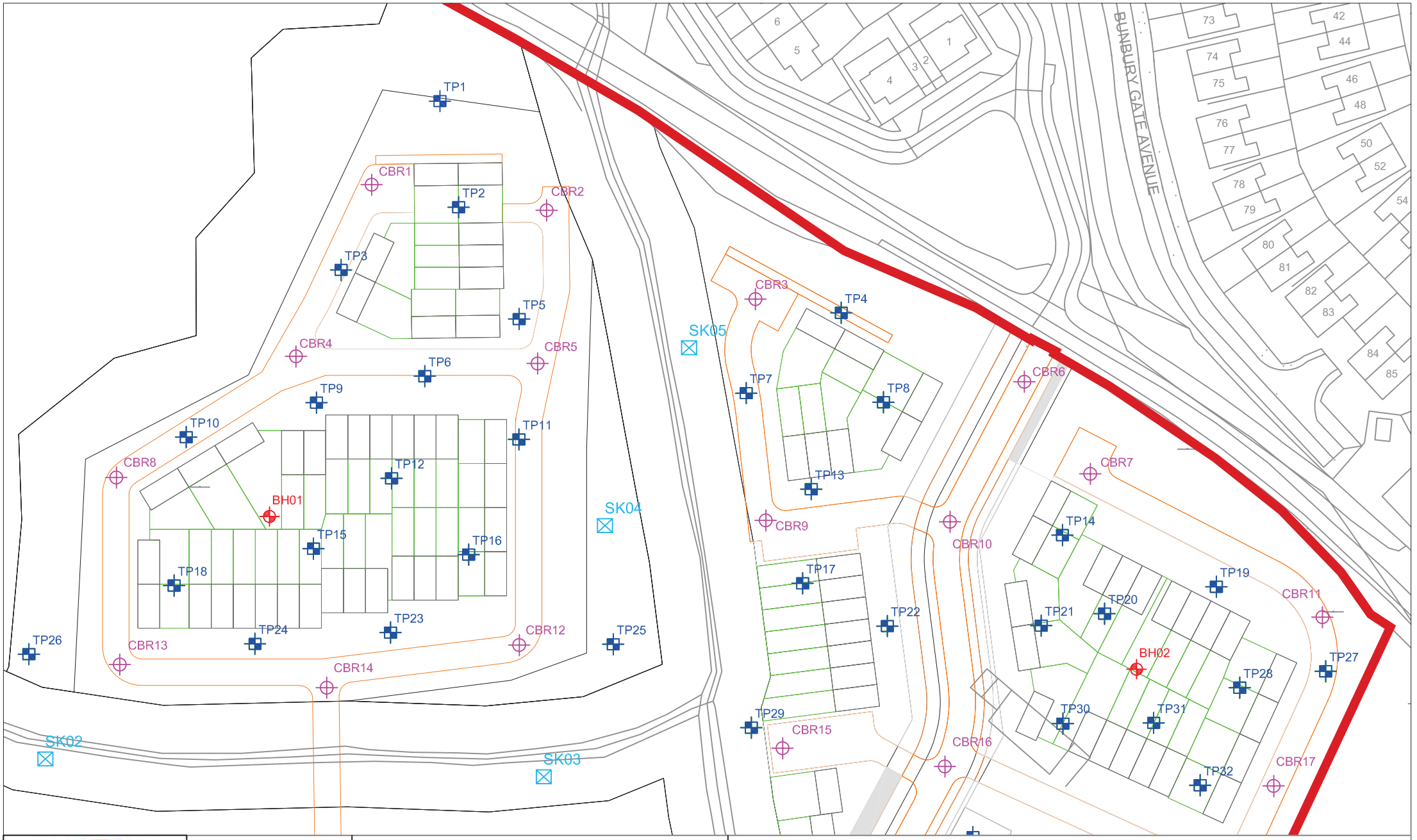
Co. Dublin

T: 01 6108768
E: Info@siteInvestigations.ie
www.siteinvestigations.ie

Client :	Fingal County Council		
Engineer :	Waterman Moylan		
Project :	Mooretown, Swords, Co. Dublin		
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:Overall Plan	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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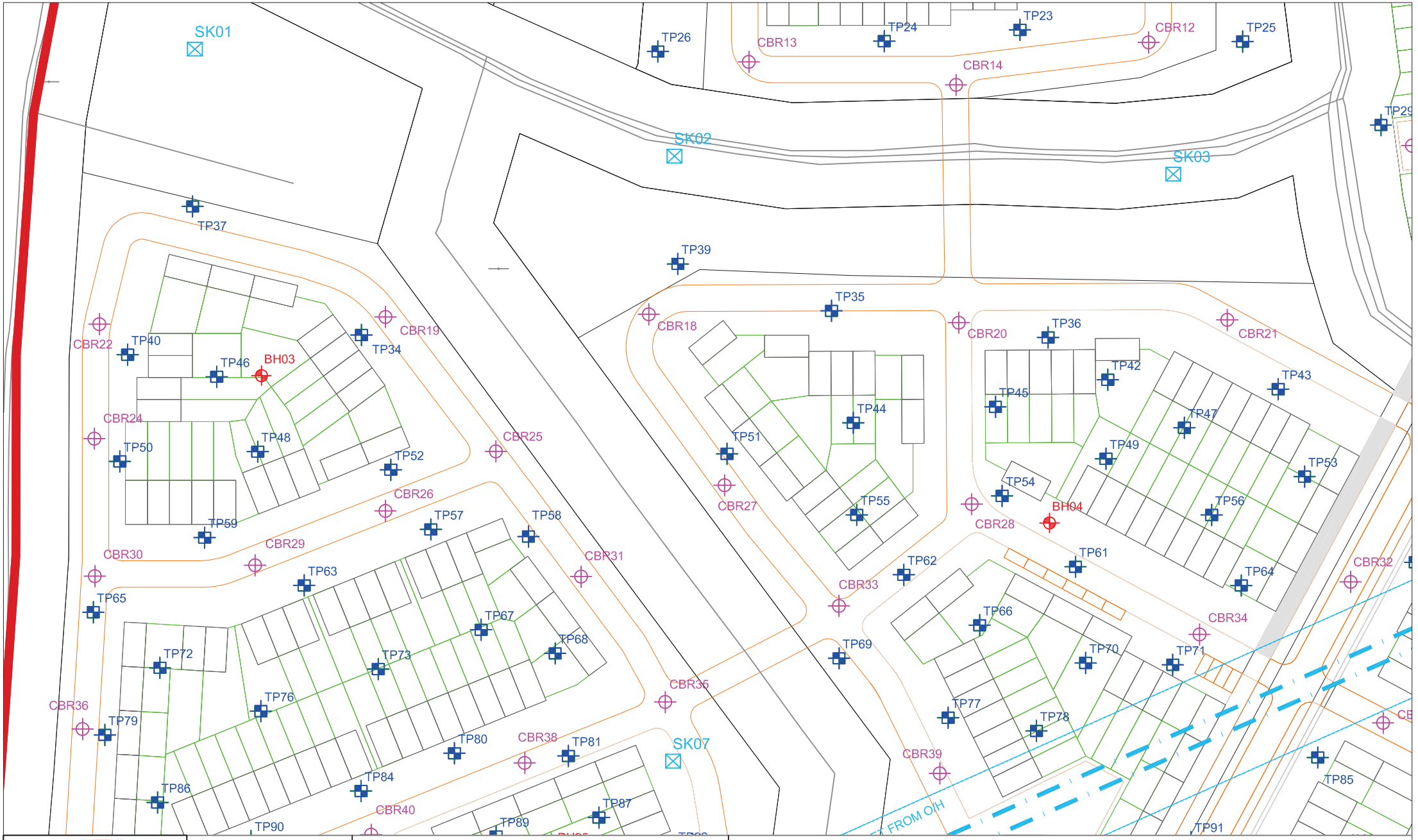
Engineer :	Waterman Moylan
Project :	Mooretown, Swords, Co. Dublin
Date :	07-06-2024
Scale :	Not to Scale
Description :	Site Investigation
Rev :	1
Drawing No :	6269:01/07
Drawn by :	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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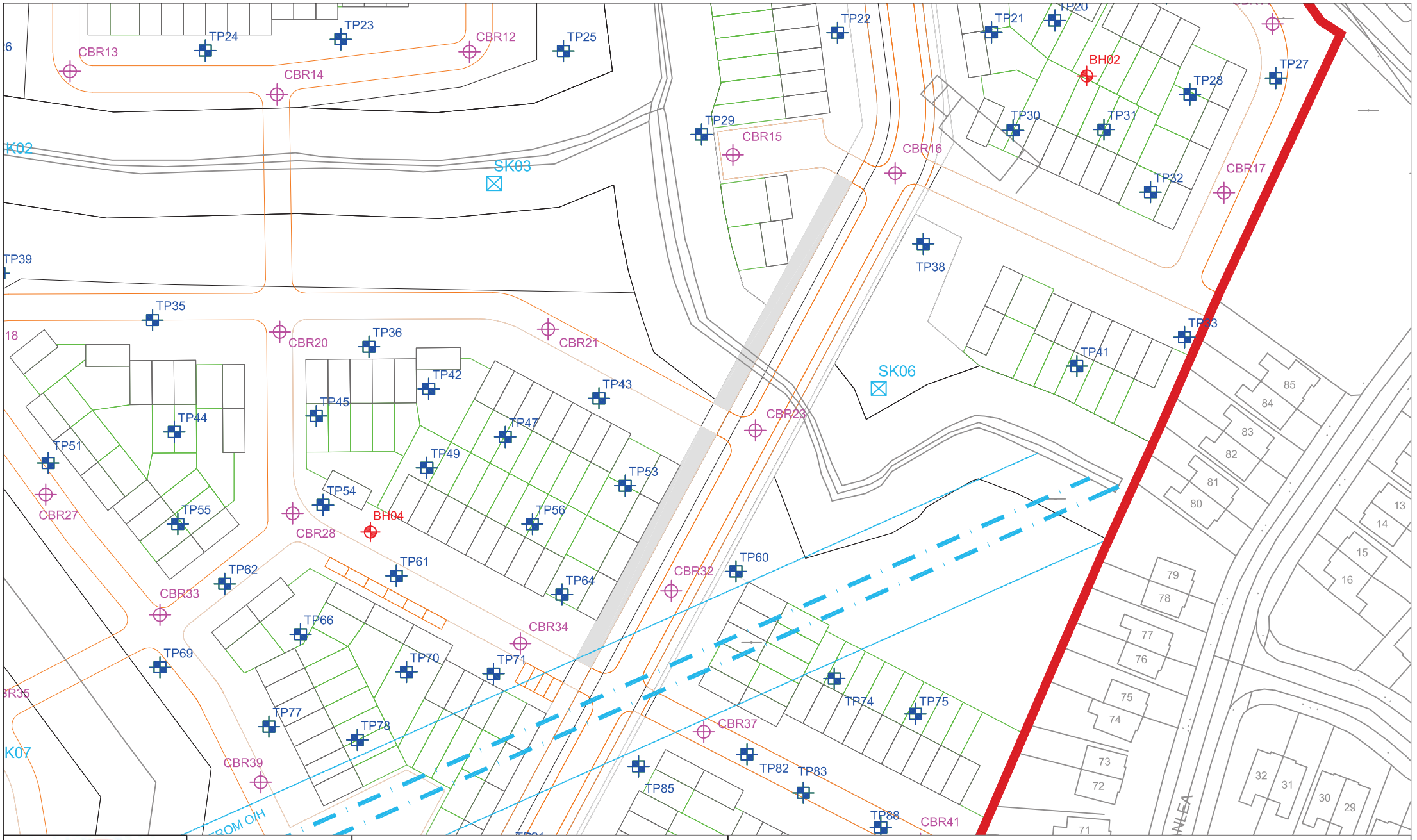
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:02/07	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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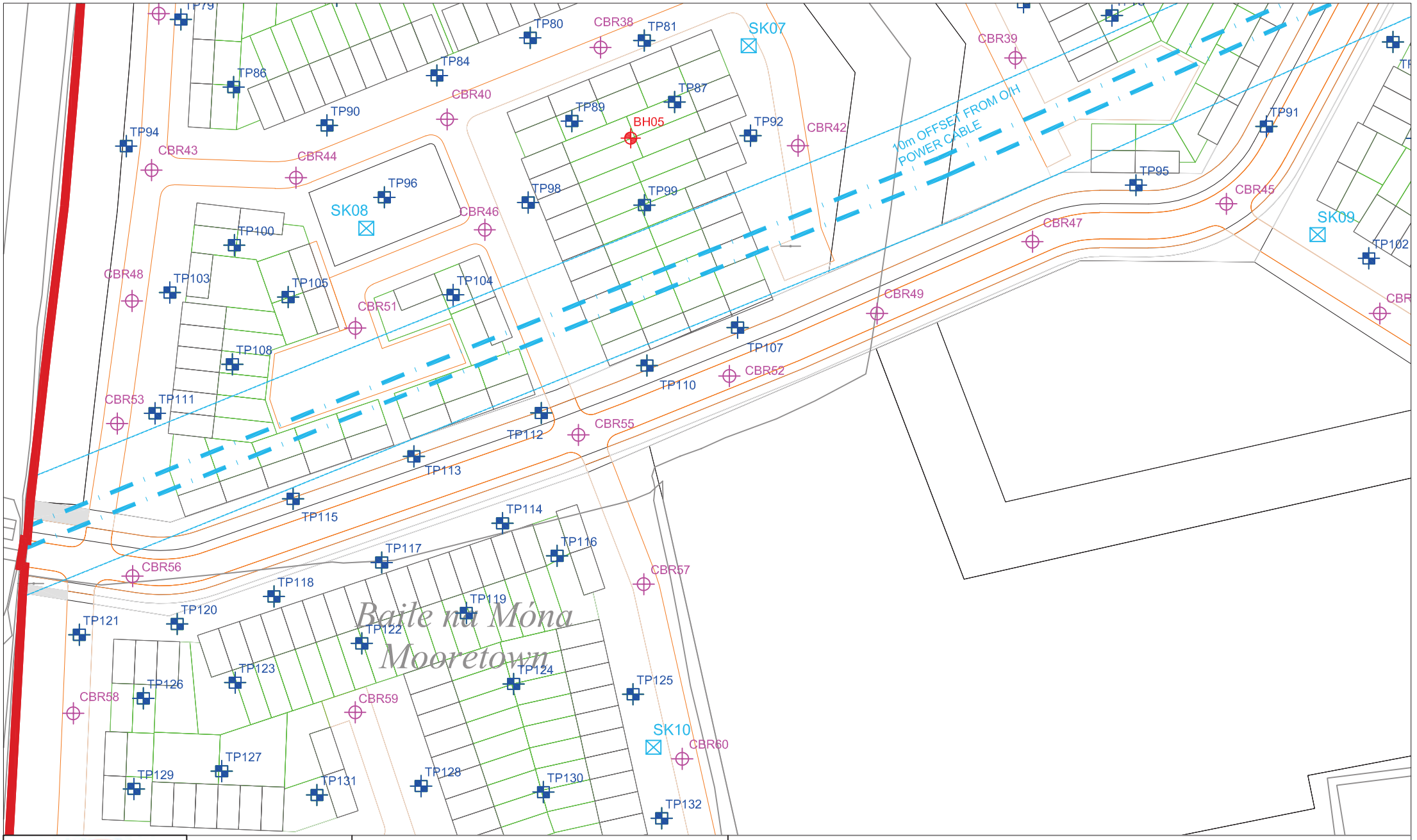
Client :	Fingal County Council
Engineer :	Waterman Moylan
Project :	Mooretown, Swords, Co. Dublin
Date :	07-06-2024
Scale :	Not to Scale
Description :	Site Investigation
Rev :	1
Drawing No :	6269:03/07
Drawn by :	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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Client :	Fingal County Council		
Engineer :	Waterman Moylan		
Project :	Mooretown, Swords, Co. Dublin		
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:04/07	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test

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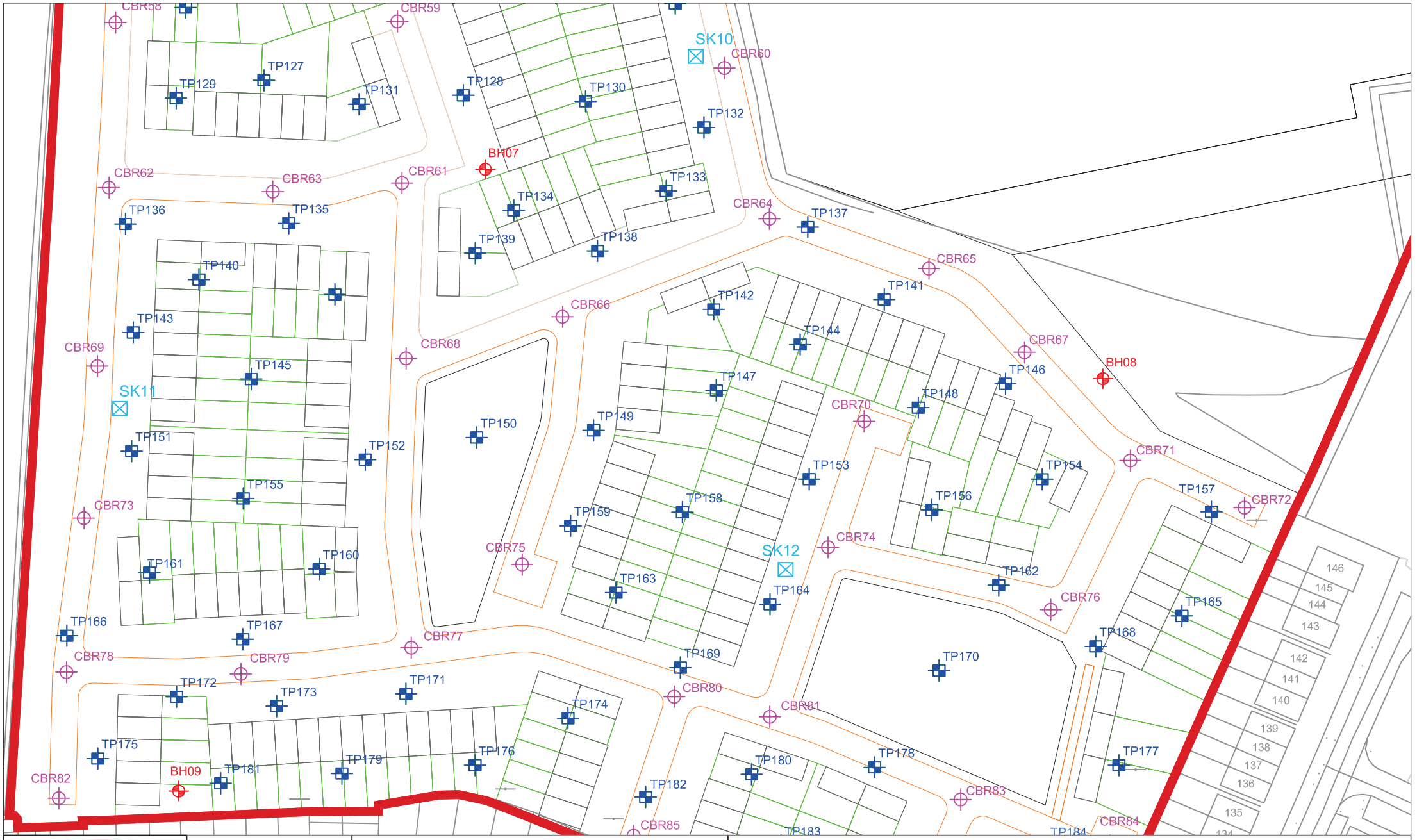
Client :	Fingal County Council		
Engineer :	Waterman Moylan		
Project :	Mooretown, Swords, Co. Dublin		
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:05/07	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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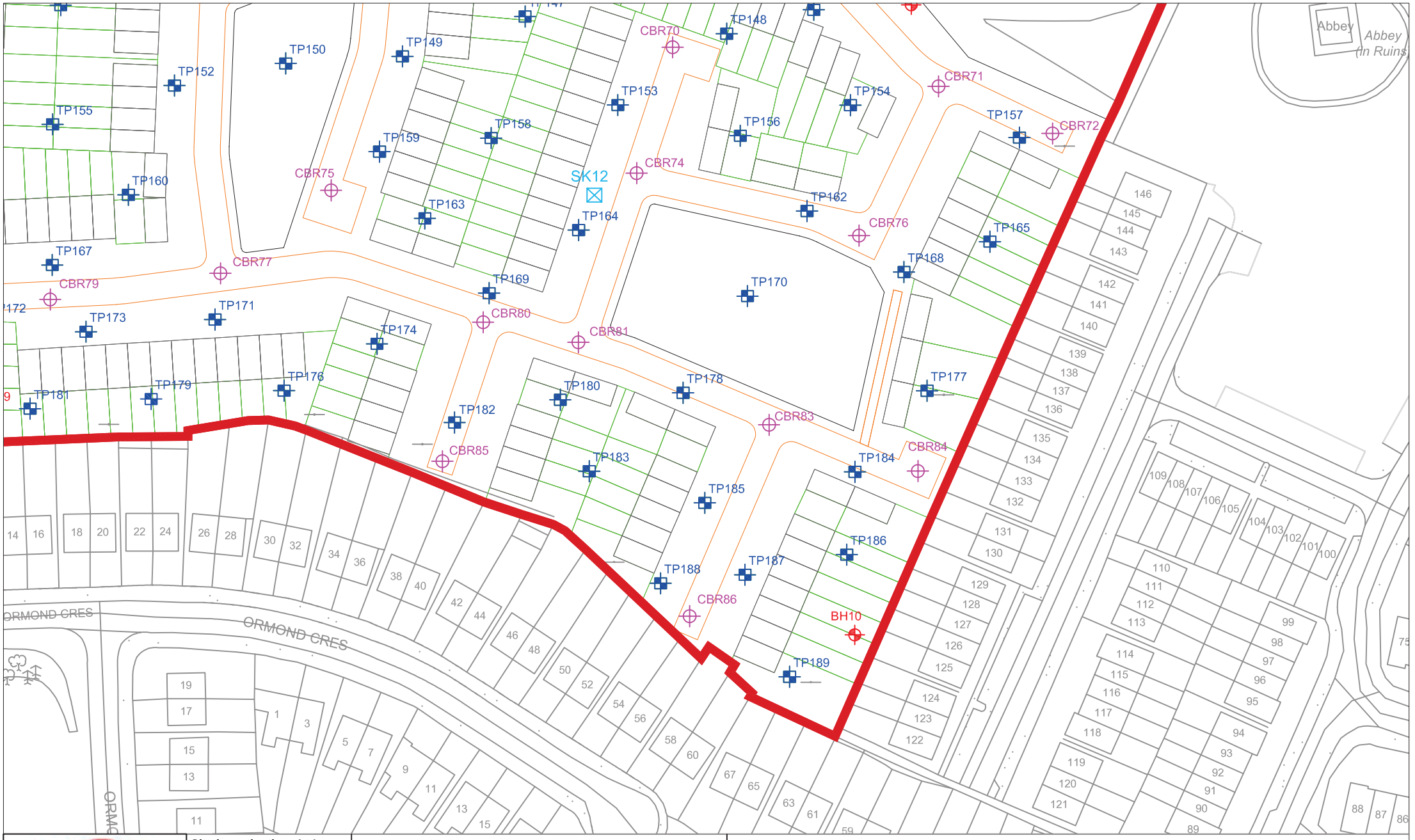
Client :	Fingal County Council		
Engineer :	Waterman Moylan		
Project :	Mooretown, Swords, Co. Dublin		
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:06/07	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test



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Project :	Mooretown, Swords, Co. Dublin		
Date :	07-06-2024	**Scale :**	Not to Scale
Description :	Site Investigation	**Rev :**	1
Drawing No :	6269:07/07	**Drawn by :**	SL

Legend:

- Cable Percussive Boreholes
- Trial Pits
- Soakaway Tests
- California Bearing Ratio Test

APPENDIX C – UISCE EIREANN CONFIRMATION OF FEASIBILITY AND STATEMENT OF DESIGN ACCEPTANCE

CONFIRMATION OF FEASIBILITY

Carmel Brennan

Senior Architect,
Architects Department
Fingal County Council
Main Street, Swords
Dublin
K67X8Y2

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

26 August 2025

Our Ref: CDS25003155 Pre-Connection Enquiry
Mooretown, Rathbeale Road, Swords, Dublin

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Multi/Mixed Use Development of 350 unit(s) at Mooretown, Rathbeale Road, Swords, Dublin, (the **Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann

- The proposed development sites are part of Moortown East Development. There is capacity in Uisce Éireann water supply infrastructure for the Development.
- Phase 3 of the Development is currently under construction and the internal infrastructure must be of adequate capacity to cater for the whole Development phases, completed and connected to Uisce Éireann network prior connections of the subject sites.
- Internal connection mains to Phase 3, must be minimum 150mm ID pipes.
- A Water Supply Infrastructure Masterplan for Moortown East Development (all phases) must be submitted at a connection application stage for approval.

Stiúrthóirí / Directors: Niall Gleeson (POF / CEO), Jerry Grant (Cathaoirleach / Chairperson), Gerard Britchfield, Liz Joyce, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a designated activity company, limited by shares.
Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

- **Wastewater Connection** - Feasible Subject to upgrades

- The proposed development sites are part of Moortown East Development. In order to accommodate the Development, Glen Ellen Road Storage tank downstream of the site must be completed and in function prior the connection. Uisce Éireann currently has no plans to deliver this upgrade. The upgrade is proposed via a third party and is currently at detailed design stage.
- Phase 3 of Moortown East Development is currently under construction and the internal infrastructure must be of adequate capacity to cater for the whole Development phases, completed and connected to Uisce Éireann network prior connections of the subject sites.
- A Wastewater Infrastructure Masterplan for Moortown East Development (all phases) must be submitted at a connection application stage for approval.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

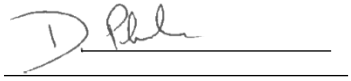
Where can you find more information?

- **Section A -** What is important to know?
- **Section B -** Details of Uisce Éireann's Network(s)

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Section B – Details of Uisce Éireann's Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie

Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Note: The information provided on the included maps as to the position of Uisce Éireann's underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann's network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann's underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann's underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

Fingal County Council
F.A.O Carmel Brennan
Senior Architect, Architects Department
Main Street
Swords
Dublin
K67X8Y2

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

16 March 2026

Re: Design Submission for Fingal Mooretown Phase 2, Rathbeale Road, Swords, Dublin (the "Development")
(the "Design Submission") / Connection Reference No: CDS25003155

Dear Carmel Brennan,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Uisce Éireann has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before you can connect to our network you must sign a connection agreement with Uisce Éireann. This can be applied for by completing the connection application form at www.water.ie/connections. Uisce Éireann's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Uisce Éireann's network(s) (the "**Self-Lay Works**"), as reflected in your Design Submission. Acceptance of the Design Submission by Uisce Éireann does not, in any way, render Uisce Éireann liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Uisce Éireann representative:
Name: Antonio Garzón Mielgo
Email: antonio.garzonmielgo@water.ie

Yours sincerely,

Dermot Phelan

Dermot Phelan
Connections and Developer Services

Stiúrthóirí / Directors: Jerry Grant (Cathaoirleach / Chairperson), Niall Gleeson (POF / CEO), Gerard Britchfield, Douglas Millican, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a designated activity company, limited by shares. Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

Appendix A

Document Title & Revision

- 25051-AKM-XXXX-XX-DR-C01-300001 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300002 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300003 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300004 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300005 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300006 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-300007 Rev 00
- 25051-AKM-XXXX-XX-DR-C01-300008 Rev 01
- 25051-AKM-XXXX-XX-DR-C01-410001 Rev 00
- 25051-AKM-XXXX-XX-DR-C01-410002 Rev 00
- 25051-AKM-XXXX-XX-DR-C01-410003 Rev 00

Standard Details/Code of Practice Exemption:

1. *Proposed pipe bridge over the existing ditch to connect to the gravity network discharging to the Phase 1 currently network under construction.*
   At Connection Application Stage, the applicant shall submit a cross section of this location, including pipe material, structural support arrangement and design calculations for the supporting piers, for Uisce Éireann's review and acceptance.

Additional Comments

The design submission will be subject to further technical review at connection application stage.

Uisce Éireann cannot guarantee that its Network in any location will have the capacity to deliver a particular flow rate and associated residual pressure to meet the requirements of the relevant Fire Authority, see Section 1.17 of Water Code of Practice.

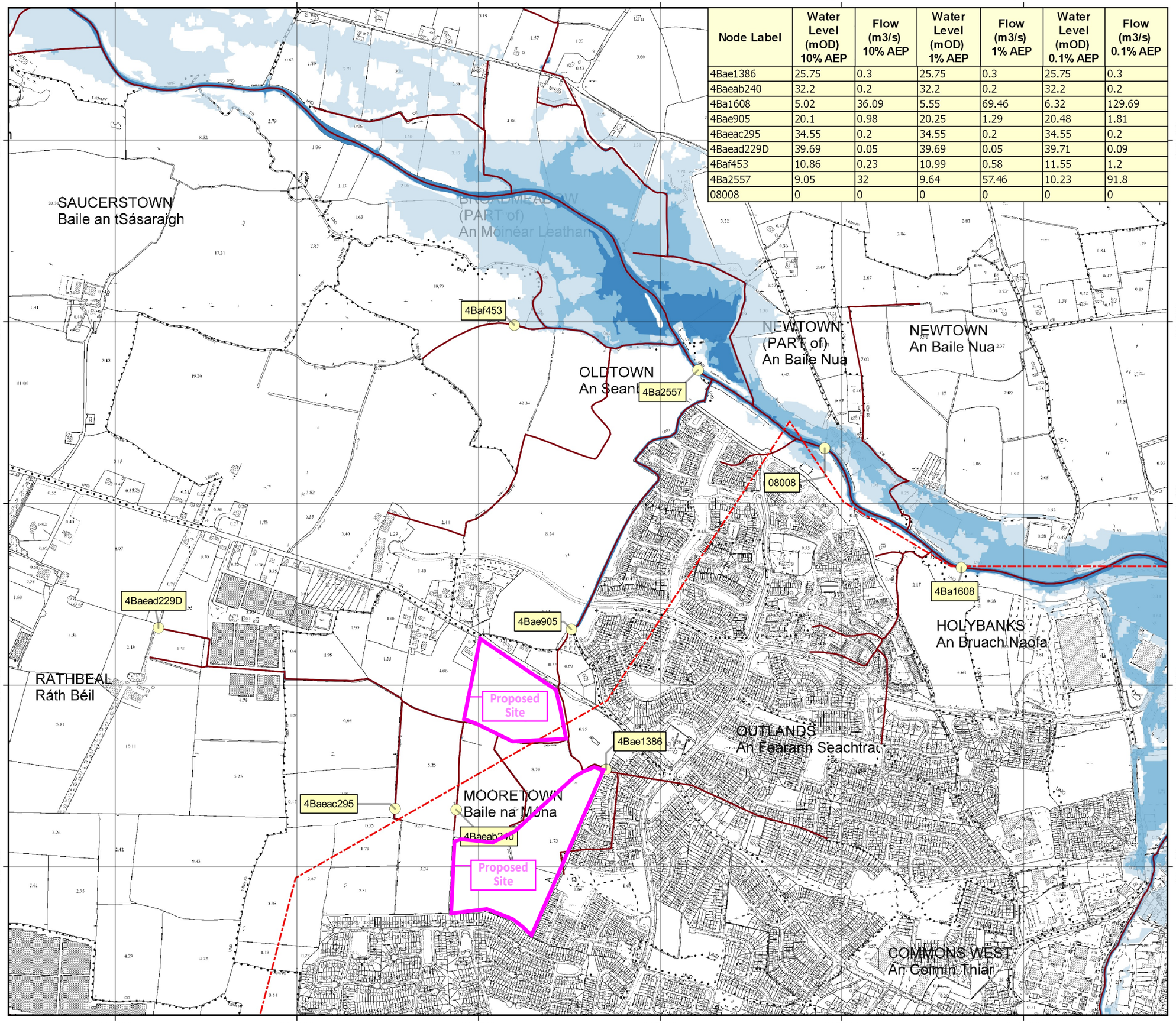
The proposed use of concrete-encased manholes in locations below the water table shall be assessed at Connection Application Stage.

For further information, visit ***www.water.ie/connections***

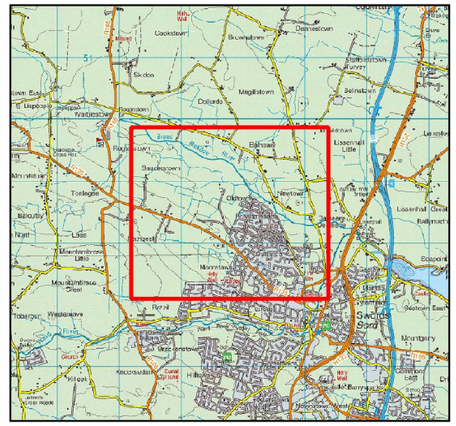
Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Uisce Éireann will not, in any way, render Uisce Éireann liable for any elements of the design and/or construction of the Self-Lay Works.

APPENDIX D – OPW FLOOD MAPPING & INFORMATION

Node Label	Water Level (mOD) 10% AEP	Flow (m3/s) 10% AEP	Water Level (mOD) 1% AEP	Flow (m3/s) 1% AEP	Water Level (mOD) 0.1% AEP	Flow (m3/s) 0.1% AEP
4Bae1386	25.75	0.3	25.75	0.3	25.75	0.3
4Baeab240	32.2	0.2	32.2	0.2	32.2	0.2
4Ba1608	5.02	36.09	5.55	69.46	6.32	129.69
4Bae905	20.1	0.98	20.25	1.29	20.48	1.81
4Baeac295	34.55	0.2	34.55	0.2	34.55	0.2
4Baead229D	39.69	0.05	39.69	0.05	39.71	0.09
4Baf453	10.86	0.23	10.99	0.58	11.55	1.2
4Ba2557	9.05	32	9.64	57.46	10.23	91.8
08008	0	0	0	0	0	0



Location Plan:



LEGEND

- AFA Boundary
- Defended Area
- Modelled River Centreline
- Node Point
- 10% AEP Fluvial Extent (High Risk)
- 1% AEP Fluvial Extent (Medium Risk)
- 0.1% AEP Fluvial Extent (Low Risk)
- Flood Defence - Embankment
- Flood Defence - Wall
- Gate
- NODE123 — Node Label
- x.x% AEP — Standard of Protection of Flood Defence

IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

OPW
Oifig na nOibreacha Poiblí
The Office of Public Works

The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath

Project:

FINGAL EAST MEATH FRAM STUDY

Map: **Broad Meadow Model**
FLUVIAL FLOOD EXTENT MAP

Map Type:	EXTENT		
Source:	FLUVIAL		
Map Area:	HPW		
Scenario:	CURRENT		
Drawn by:	IH	Date:	Sep - 2016
Checked by:	MC	Date:	Sep - 2016
Approved by:	JM	Date:	Sep - 2016

Map No.:
BRO/HPW/EXT/CURS/009

Revision: F0

Map Scale: 1:10,000 Plot Scale: 1:1 @ A3

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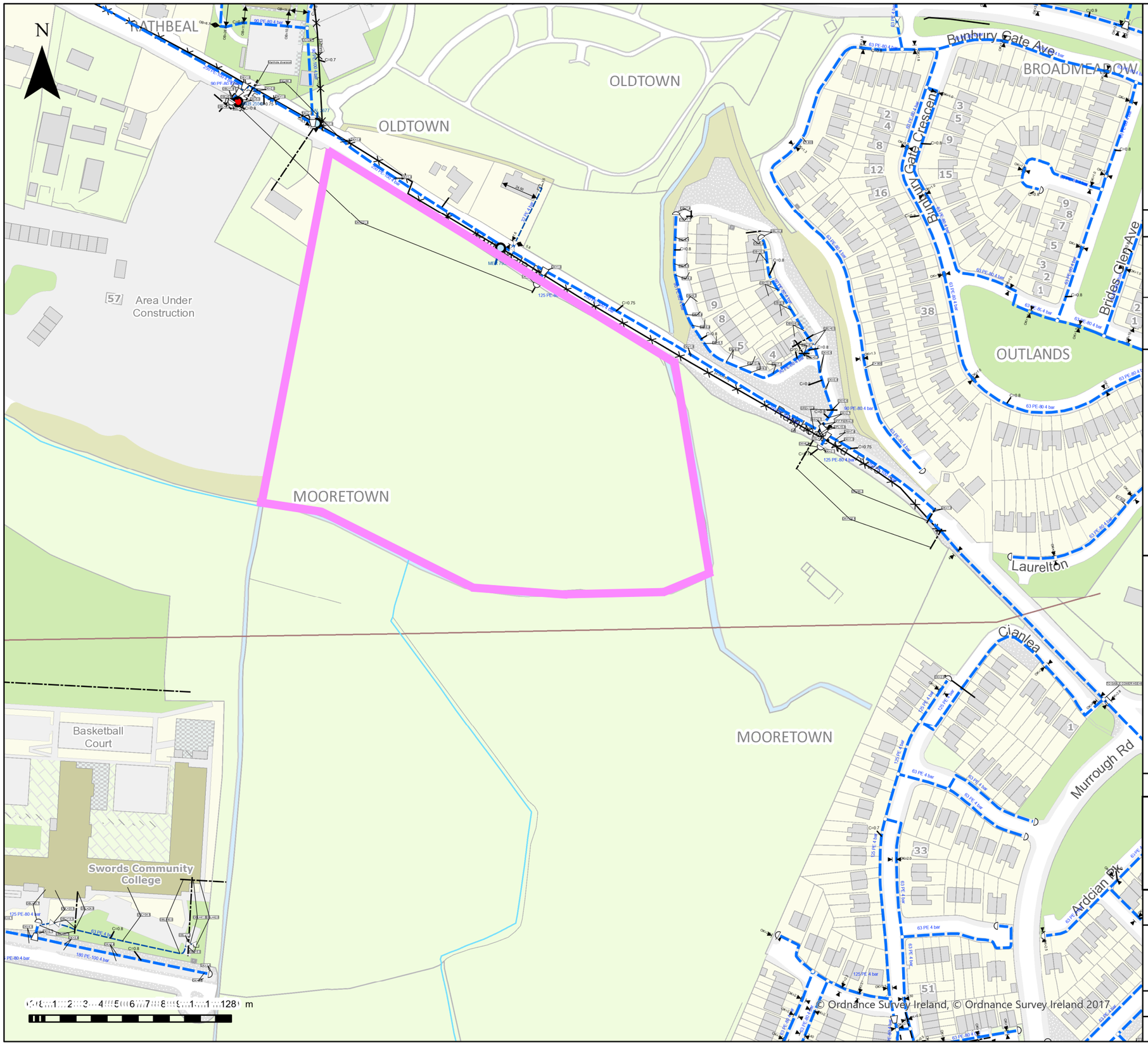
APPENDIX E – EXISTING SERVICE MAPS



Important Safety Notice: Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe. Service pipes are not generally shown but their presence should always be anticipated.

High pressure transmission pipelines are shown in red. If a transmission pipeline is identified within 10m of any intended excavations then work must not proceed before GNI has been consulted. The true location and depth of a transmission pipeline must be verified on site by a representative of GNI. Contact can be made through 1800 427 747.

All work in the vicinity of the gas network must be completed in accordance with the current edition of the Health and Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (0818 289 389) or can be downloaded at www.hsa.ie.

Legal Notice: Gas Networks Ireland (GNI) and its affiliates, accept no responsibility for the accuracy of any information contained in this document including data concerning location and technical designation of the gas distribution and transmission network (the"Information"). The Information should not be relied on for accurate distance or depth of cover measurements.

Any representations and warranties, express or implied, are excluded to the fullest extent permitted by law. No liability shall be accepted for any loss or damage including, without limitation,direct, indirect or consequential loss, arising out of or in connection with the use or re-use of the Information.

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- Aurora Telecom Duct
- Aurora Telecom Sub Duct
- Aurora Telecom Inserted Gas Pipe

Aurora TELECOM

Aurora Telecom Queries - 01-8926166 (Office Hours)
Aurora_Network_Queries@gasnetworks.ie
Aurora Telecom Emergency Only 1800 427399 / 01 2030120

- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

**** Please contact GNI on 1800-427747 for specific information**

DIAL BEFORE YOU DIG 1800 42 77 47
In Emergency call 1800 20 50 50 Gas Networks Ireland

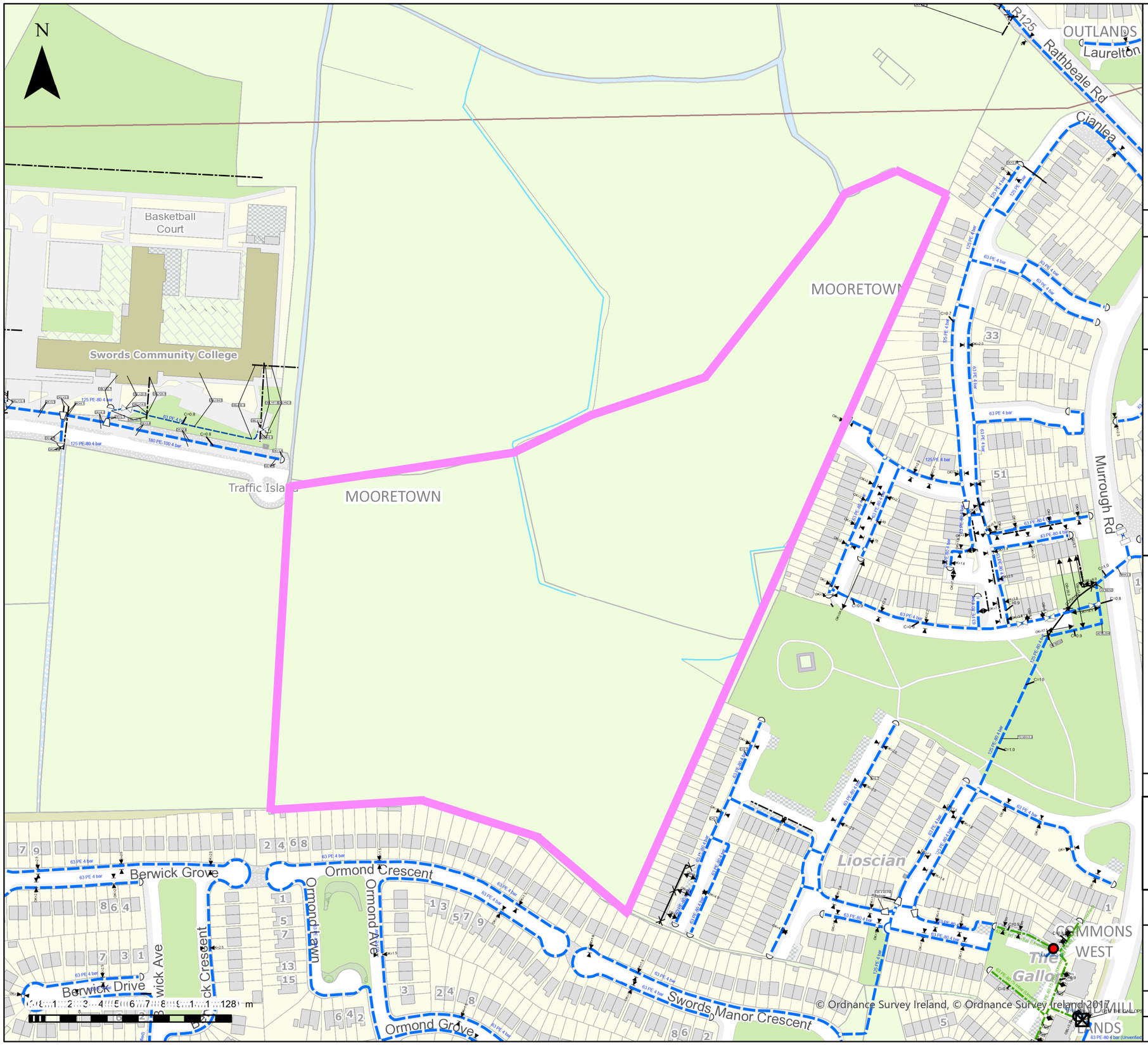
Gas Networks Ireland

GAS NETWORK INFORMATION

Description: test

Location: 716586,747910

Plot Date: 13/06/2024 15:30	Scale: 2500 @ A3
Plotted By: 7834	Ref ID: *7834_13062024153044*



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- Aurora Telecom Duct
- Aurora Telecom Sub Duct
- Aurora Telecom Inserted Gas Pipe

Aurora TELECOM

Aurora Telecom Queries - 01-8926166 (Office Hours)
Aurora_Network_Queries@gasnetworks.ie
Aurora Telecom Emergency Only 1800 427399 / 01 2030120

- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

DIAL BEFORE YOU DIG 1800 42 77 47
In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

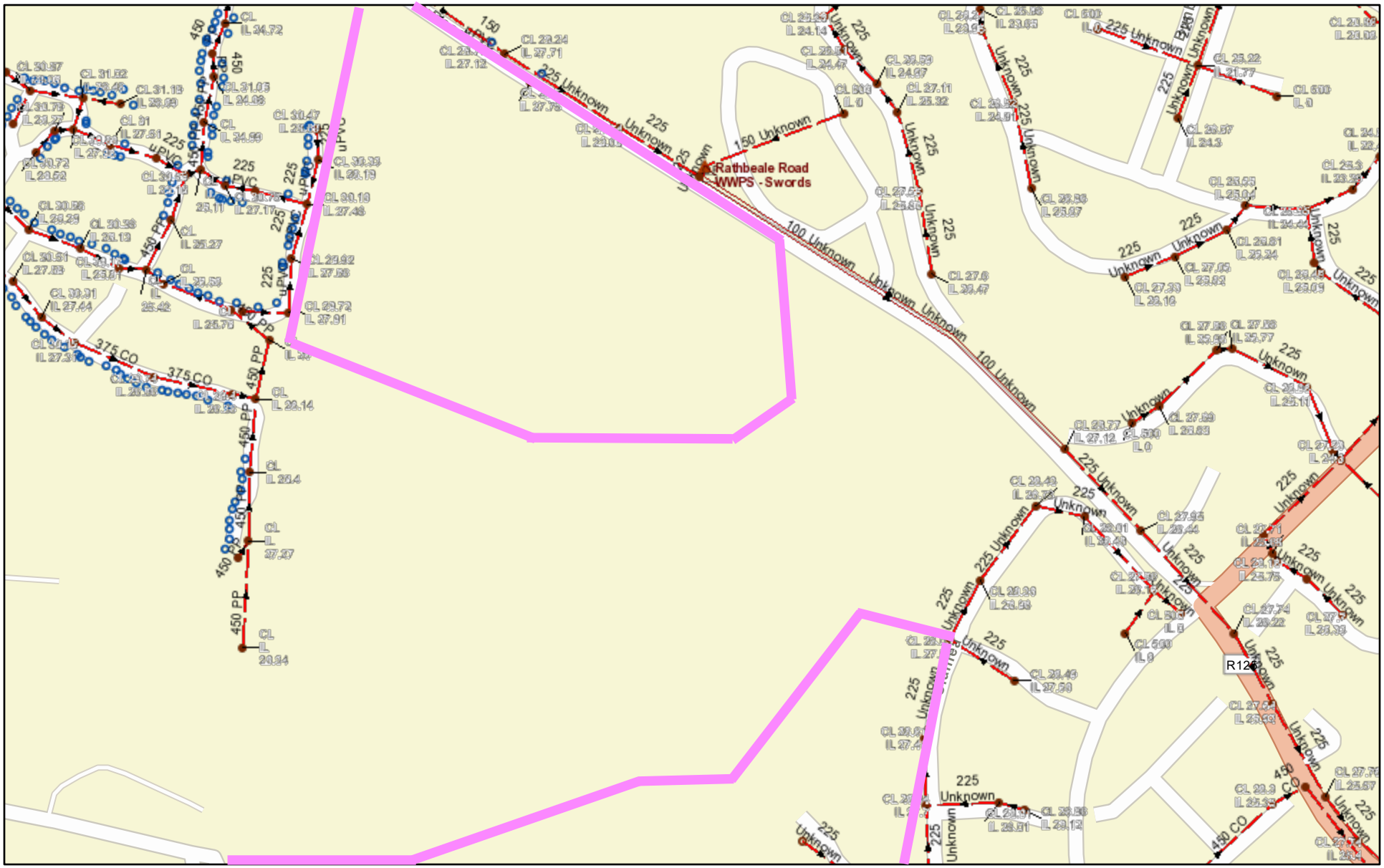
GAS NETWORK INFORMATION

Description: test

Location: 716539,747579

Plot Date: 13/06/2024 15:35	Scale: 2500 @ A3
Plotted By: 7834	Ref ID: *7834_13062024153501*

Foul



11/5/2024

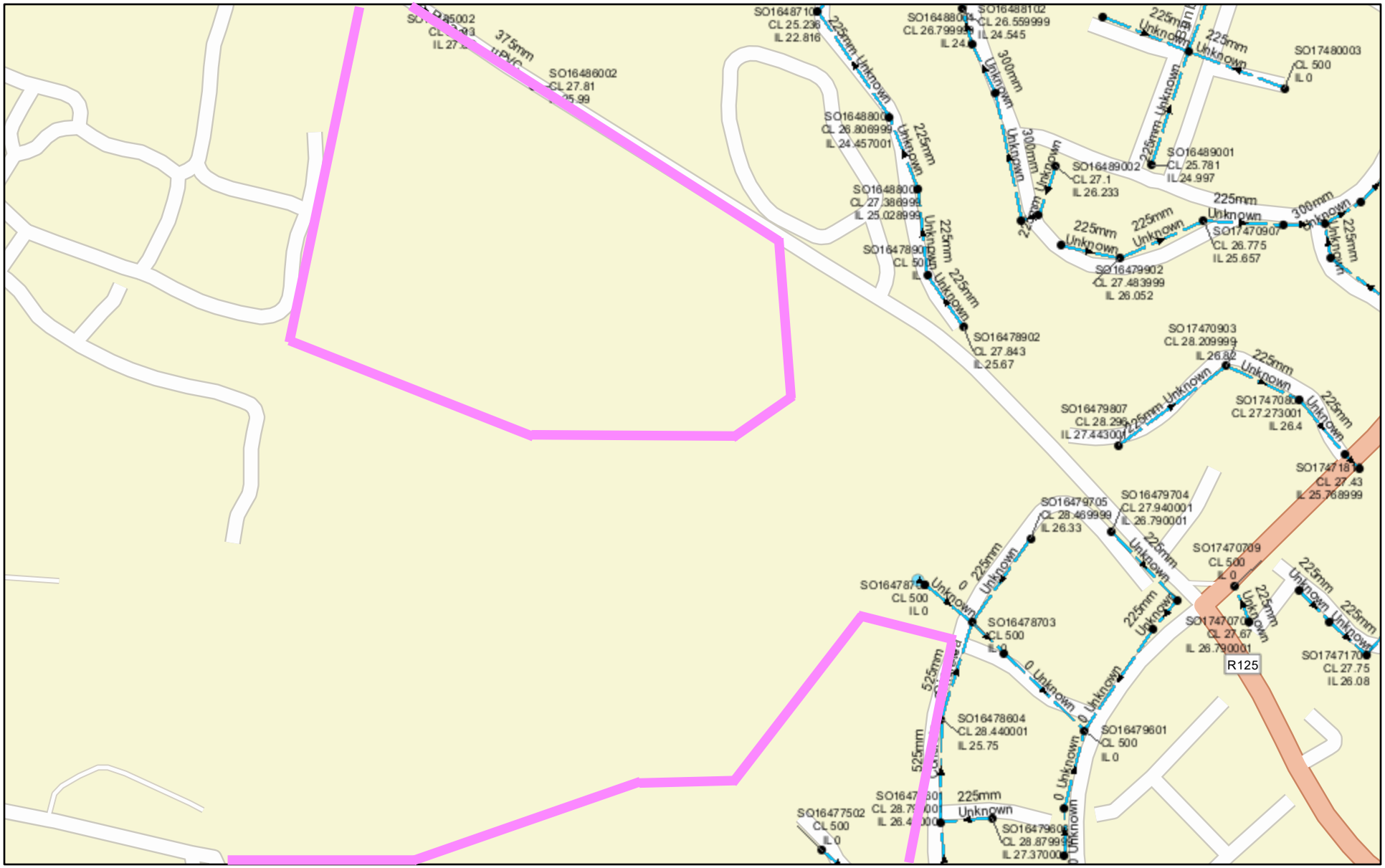
1:5,590

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Storm



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1:5,590

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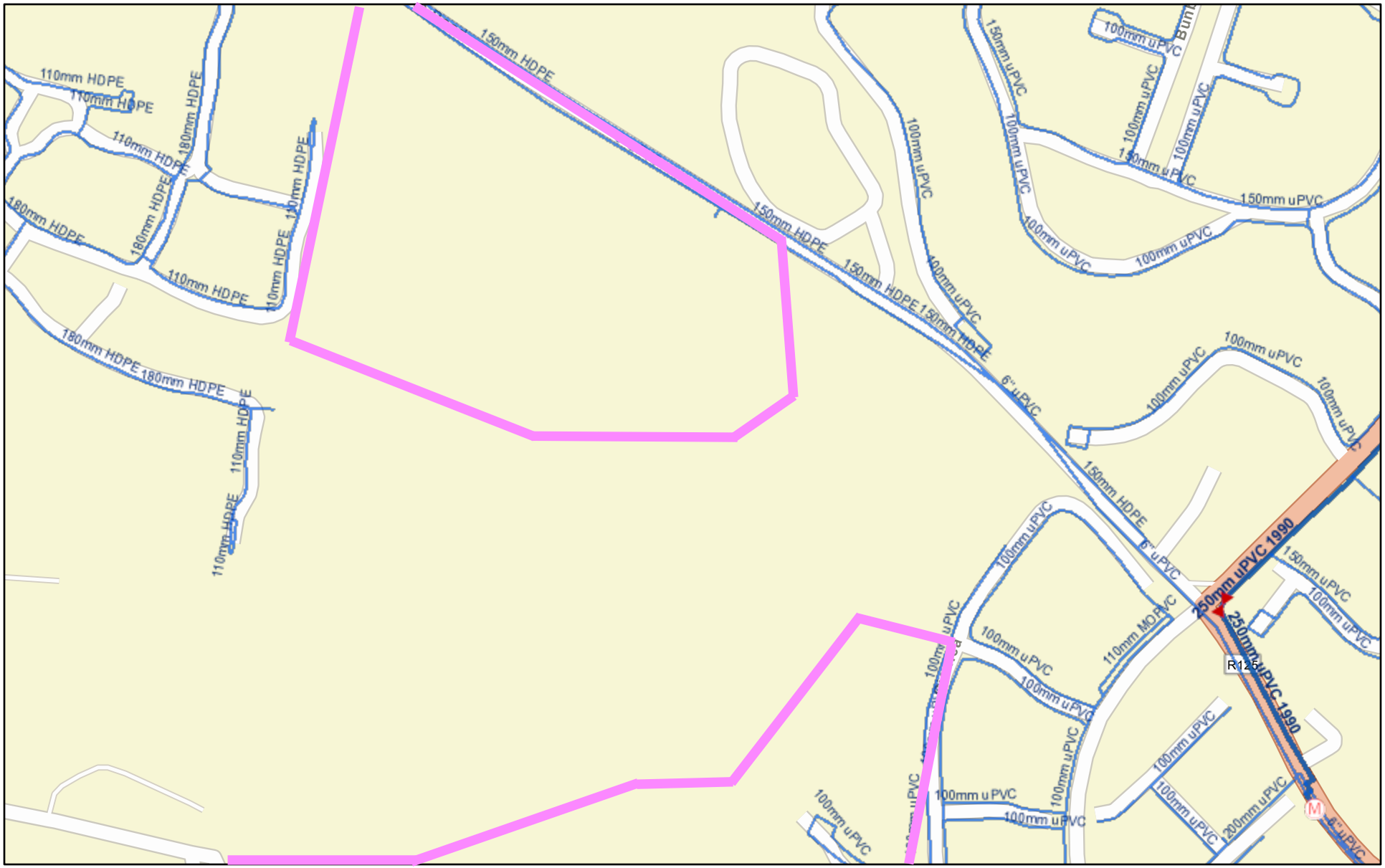
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Irish Water - Map - Services



11/5/2024

1:5,590

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

ESB Networks

TITLE:

20040618-062_A0

COLOUR CODE:

- BLACK - 38KV & HIGHER VOLTAGE OVERHEAD LINES
- GREEN - MV(10KV/20KV) OVERHEAD LINES
- BLUE - LV (400V/230V) OVERHEAD LINES
- CYAN - 38KV & HIGHER VOLTAGE UNDERGROUND CABLE ROUTES
- RED - MV/LV (10KV/20KV/400V/230V) UNDERGROUND CABLE ROUTES

DATE: 18-Jun-2024

** SCALE: 1:1500

** SCALE WHEN PRINTED ON AN A0 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

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Copyright Ordnance Survey Ireland Government of Ireland

WARNING

THIS MAP INDICATES THE APPROXIMATE LOCATION OF ESB TRANSMISSION (400KV, 220KV, 110KV, 38KV) AND DISTRIBUTION (20KV, 10KV, 230V/400V) UNDERGROUND CABLES AND OVERHEAD LINES IN THE GENERAL AREA OF THE PROPOSED WORKS. ESB NETWORKS TAKES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE MAP. IT IS THE USER'S RESPONSIBILITY TO INDEPENDENTLY VERIFY THE INFORMATION AND THE LOCATION OF UNDERGROUND CABLES AND OVERHEAD LINES. LOW VOLTAGE (230V/400V) SERVICE CABLES (E.G. HOUSE SERVICES, FACTORY/SHOP SERVICES, PUBLIC LIGHTING LAMP SERVICES, ETC) ARE NOT INCLUDED BUT THEIR PRESENCE SHOULD BE ANTICIPATED. THE DEPTHS OF UNDERGROUND CABLES MUST NEVER BE ASSUMED. ADDITIONAL MORE DETAILED INFORMATION IS AVAILABLE FOR HIGH VOLTAGE TRANSMISSION UNDERGROUND CABLES (38KV, 110KV, 220KV, 400KV) FROM THE LOCAL ESB NETWORKS TRANSMISSION REPRESENTATIVE - SEE ATTACHED LIST FOR CONTACT DETAILS OR CALL 1800 372 757. NO WORK SHOULD BE CARRIED OUT IN THE VICINITY OF 38KV OR HIGHER VOLTAGE UNDERGROUND CABLES WITHOUT PRIOR CONSULTATION WITH ESB NETWORKS. BEFORE ANY MECHANICAL EXCAVATION IS UNDERTAKEN, THE ACTUAL LOCATION OF ALL UNDERGROUND ELECTRICITY CABLES MUST BE ESTABLISHED AND VERIFIED ON THE SITE USING:
(A) UP-TO-DATE MAP RECORDS; (B) CABLE LOCATER EQUIPMENT OPERATED IN BOTH POWER AND RADIO MODES;
(C) CAREFUL HAND DIGGING OF TRIAL HOLES USING 'SAFE DIGGING PRACTICE'. REFER ALSO TO 'HSA CODE OF PRACTICE FOR AVOIDING DANGER FROM UNDERGROUND SERVICES'. ESB TAKES NO RESPONSIBILITY FOR AND SHALL BEAR NO LIABILITY, HOWSOEVER ARISING, IN RELATION TO ANY DAMAGE, INJURY/DEATH OR LOSS OF SUPPLY AS A RESULT OF DAMAGE OR INTERFERENCE WITH ITS NETWORKS.

ESB NETWORKS HAS ISSUED THIS MAP AS A PDF DOCUMENT. IF VIEWING A PAPER VERSION OF THIS MAP, THE VIEWER MUST ENSURE THAT IT HAS BEEN PRINTED IN COLOUR TO FIT TO AN A0 (OR LARGER) PAGESIZE AND THAT EACH OF THE COLOURS INDICATED ON THE COLOUR CODE LEGEND ABOVE ARE CLEAR AND DISTINCT FROM EACH OTHER TO MAINTAIN A CORRECT REPRESENTATION OF THE ELECTRICAL NETWORK INFORMATION.

X,Y: 315699 , 248400

X,Y: 317440 , 248400

X,Y: 317440 , 247246

RATHBEALE

RATHBEALE

11

12

16

1

P1

3X1/185 XLP

200 ACSR

65

66

CASTLEVIEW KIOSK

GLEN ELLAN RD

CRONANS WELL 1

CRONANS WELL 2

CRONANS WELL 3

DWORDS COMM COLLEGE

CASTLEVIEW MEADOWS

APPLEWOOD SCHOOL 2

CASTLEVIEW DRIVE

CASTLEVIEW LAWNS

APPLEWOOD WEST

BONBURY GATE AVE

HOLYMOUNT

BRIDES GLEN AVE

BRIDES GLEN

SANDYFORD WOOD

GLASMORE 222/06

GLASMORE STN SUB

PARK AVE FT

GLASMORE KIOSK

GLEN ELLEN FT 4

GLEN ELLEN FT

GLASMORE STN KIOSK

OUTLANDS N

GLEN ELLEN T

CAMAC K

ARDCIAN PARK

PINEGROVE

OAKVIEW

BOWDEN COURT

BC155

BC156

DK057

LIOSCAIN

THE GALLOPS

ABBEYVALE GREEN

ABBEYVALE CRES

PLEASANTS CT

PLEASANTS PARK

PLEASANTS CRES

PLEASANTS GROVE

PLEASANTS DR

PLEASANTS GLEN

PLEASANTS VIEW

PLEASANTS WALK

PLEASANTS MEADOWS

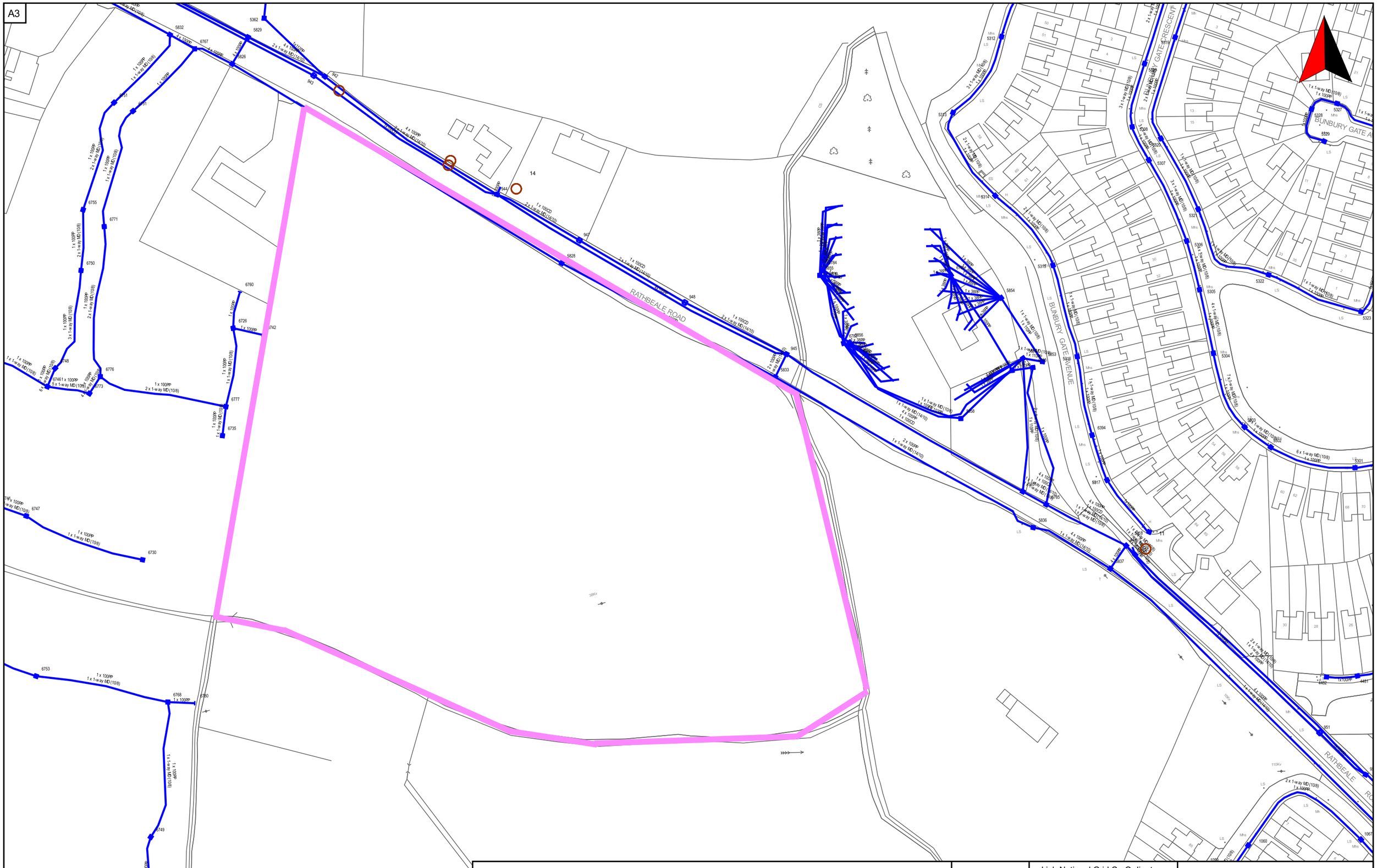
PLEASANTS AVE

PLEASANTS LAWN

PLEASANTS RISE

PLEASANTS GREEN

A3



open eir Civil Engineering Infrastructure Service	Scale: 1:1500	Irish National Grid Co-Ordinates Centre XY: 316671 m, 247955 m
	Date 13/06/2024	Smallworld Powered by GE

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THE INFORMATION GIVEN IS COMPILED FROM PASSIVE ACCESS RECORDS AND IS BELIEVED TO BE CORRECT. THERE MAY, HOWEVER, BE DEPARTURES FROM THE COURSE[S] AND DEPTH[S] SHOWN OR INDICATED. THERE MAY ALSO BE ITEMS OF open eir INFRASTRUCTURE OF WHICH NO RECORDS IS HELD. THE INFORMATION IS GIVEN WITHOUT PREJUDICE TO THE LEGAL RIGHTS OF open eir TO COMPENSATION SHOULD open eir INFRASTRUCTURE BE DAMAGED.

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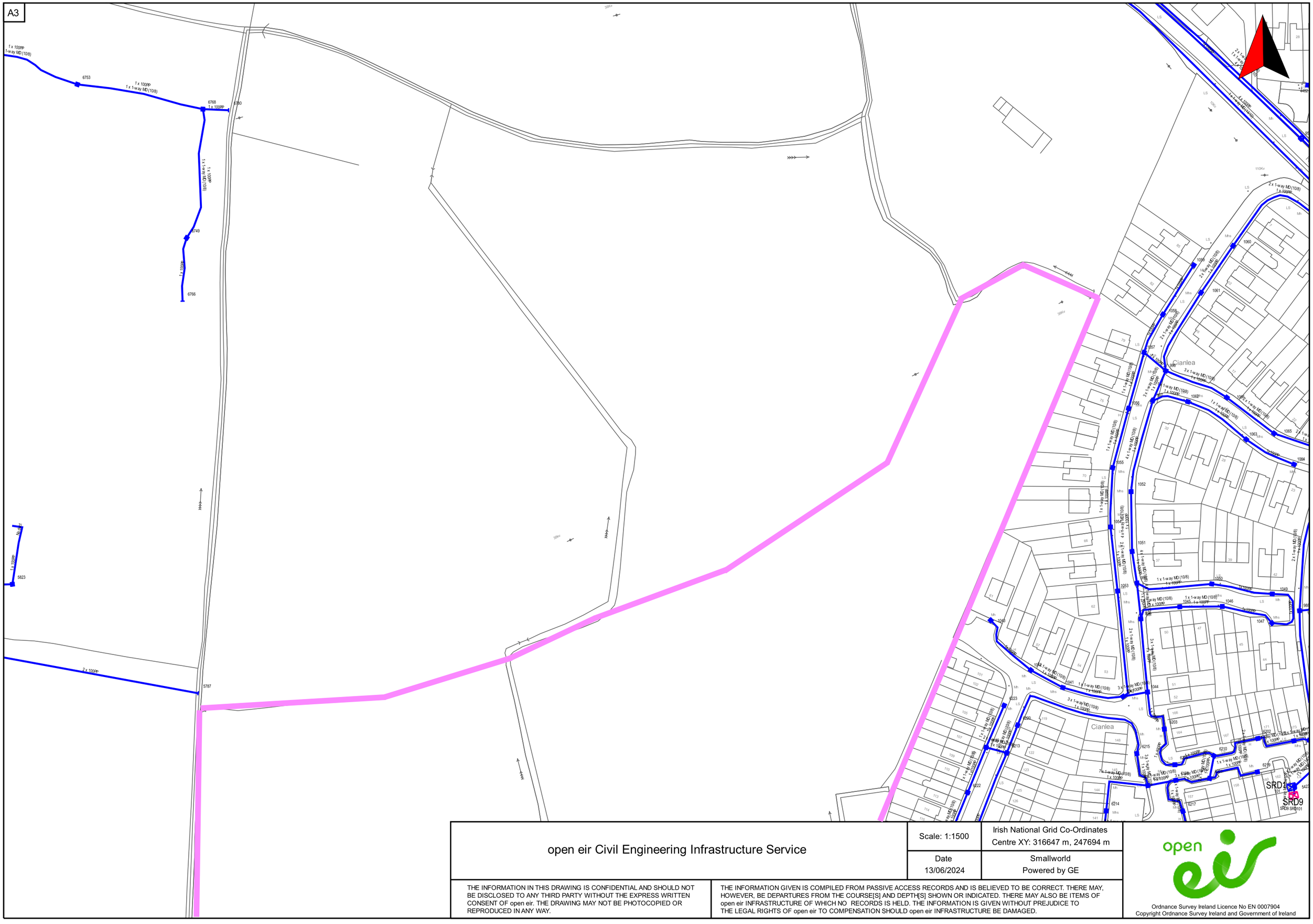
A3



open eir Civil Engineering Infrastructure Service	Scale: 1:1500	Irish National Grid Co-Ordinates Centre XY: 316647 m, 247694 m
	Date 13/06/2024	Smallworld Powered by GE

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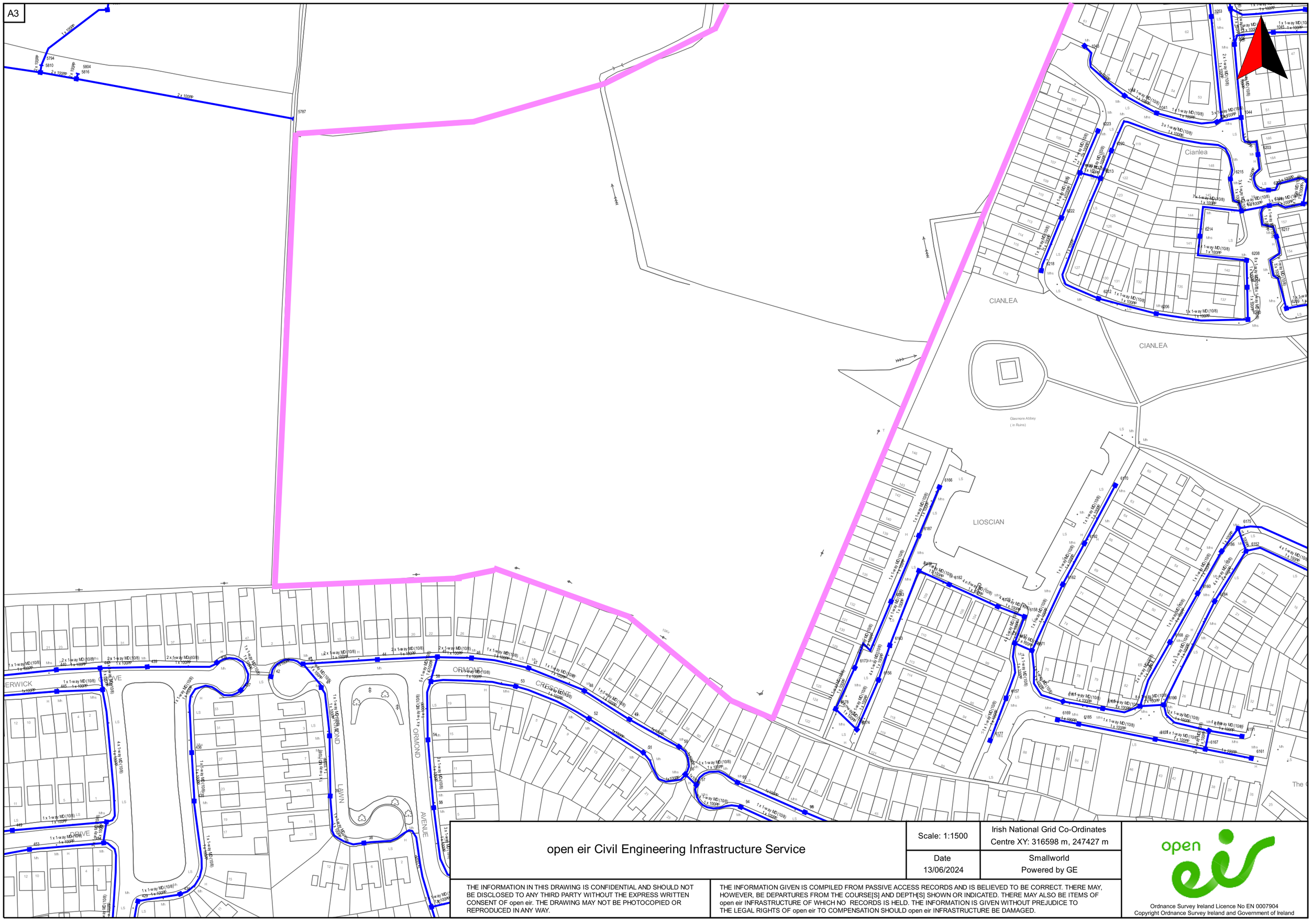
A3



open eir Civil Engineering Infrastructure Service

Scale: 1:1500	Irish National Grid Co-Ordinates Centre XY: 316598 m, 247427 m
Date 13/06/2024	Smallworld Powered by GE

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THE INFORMATION GIVEN IS COMPILED FROM PASSIVE ACCESS RECORDS AND IS BELIEVED TO BE CORRECT. THERE MAY, HOWEVER, BE DEPARTURES FROM THE COURSE[S] AND DEPTH[S] SHOWN OR INDICATED. THERE MAY ALSO BE ITEMS OF open eir INFRASTRUCTURE OF WHICH NO RECORDS IS HELD. THE INFORMATION IS GIVEN WITHOUT PREJUDICE TO THE LEGAL RIGHTS OF open eir TO COMPENSATION SHOULD open eir INFRASTRUCTURE BE DAMAGED.

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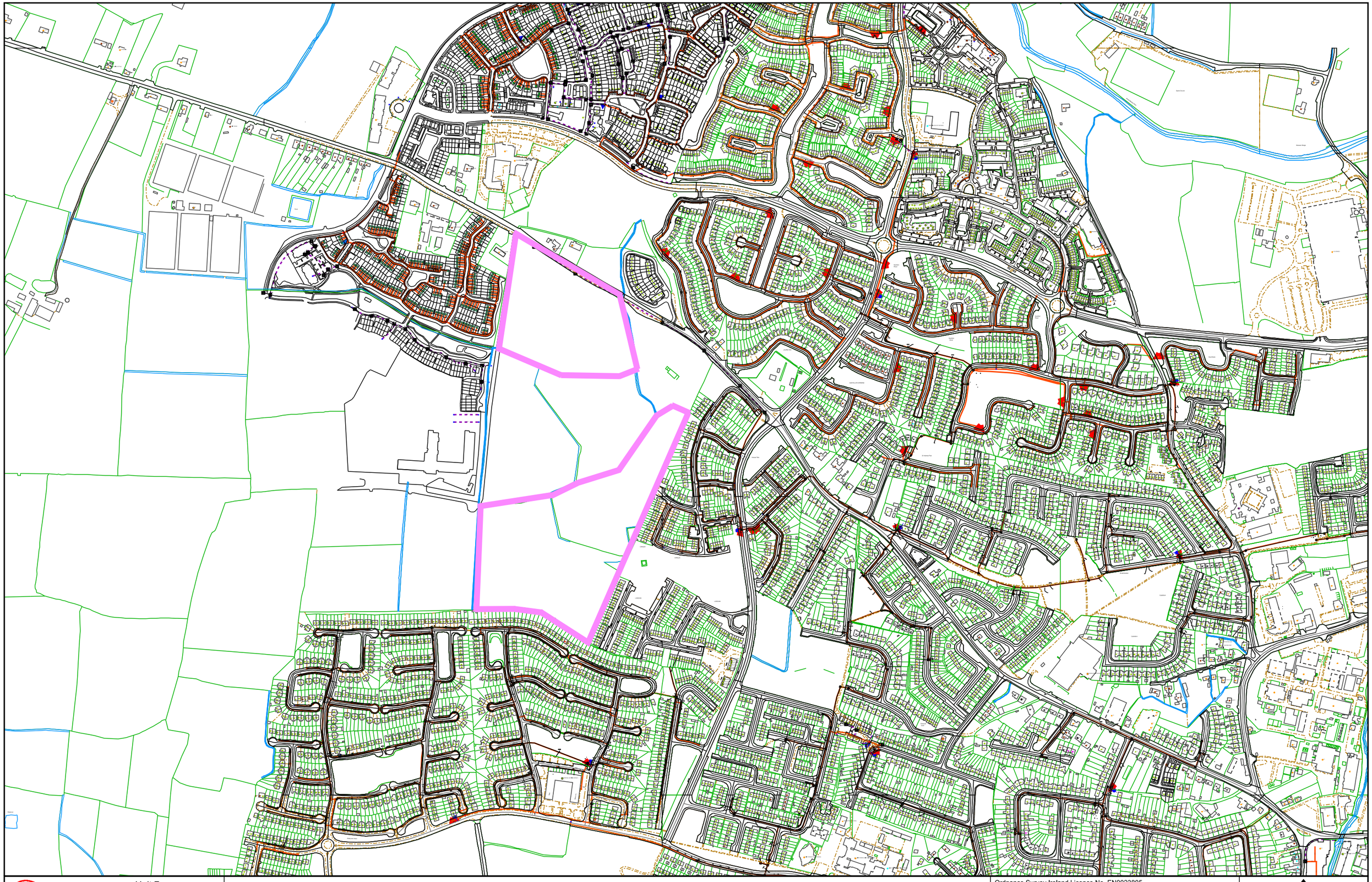

Unit 7,
Westgate Business Park,
Ballymount,
Dublin 24.

PROJECT NAME

DESIGNED BY:

Ordnance Survey Ireland Licence No. EN0023805
(c) Ordnance Survey Ireland and Government of Ireland

Produced on: 13/06/2024

@ A3

APPENDIX F – QBAR CALCULATION & DRAINAGE HYDRAULIC MODEL REPORT

Qbar and Storage Volume			
Project Name	PROPOSED STORM DRAINAGE	**Project Number**	25051
Client	GLENVEAGH HOMES	**Date**	27/02/2026
Site Name	FINGAL MOORETOWN	**Site Locations**	SWORDS
Irish Grid Easting	316600	**Irish Grid Northing**	247800
Calculated By	DM	**Approved By**	DO

AKM DESIGN GROUP.
Innovating tomorrow through design

Description	Value
Soil Type	4
SPR Index	0.47
SAAR (mm)	770.8
Rain Data	Met Eireann
Climate Change Factor (%)	20%
Urban creep allowance factor (%)	10%

Qbar formula

$$\text{Q Bar} = 0.00108 \times (\text{AREA})^{0.89} \times (\text{SAAR})^{1.17} \times (\text{SOIL})^{2.17}$$

Area = Total site area in km²
SAAR = Standard Average Annual Rainfall in mm
SOIL = The "SPR" index from FSR

Note: Where a site is <0.5km², the Q Bar formula should be applied for 0.5km² and the result factored based on the ratio of the actual site area and the applied area.

Catchment	Description	*Roofs*	*Driveways*	*Roads*	*Garden*	*Open Space*	*Greenroof*	*Other*	Total	Coefficient Runoff
	Runoff	0.900	0.500	0.900	0.100	0.470	-	-		
A	Gross Area (m²)	3,003	2,461	4,160	3,159	4,116	-	-	**16,898**	0.587
	Impermeable Area (m²)	2,703	1,231	3,744	316	1,935	-	-	**9,927**	
E2.1	Gross Area (m²)	3,521	2,240	3,808	2,722	15,606	-	-	**27,898**	0.549
	Impermeable Area (m²)	3,169	1,120	3,427	272	7,335	-	-	**15,324**	
E2.2	Gross Area (m²)	454	546	1,250	80	592	-	-	**2,921**	0.716
	Impermeable Area (m²)	408	273	1,125	8	278	-	-	**2,092**	
F2	Gross Area (m²)	10,985	8,310	13,969	10,367	7,619	-	-	**51,250**	0.609
	Impermeable Area (m²)	9,887	4,155	12,572	1,037	3,581	-	-	**31,231**	

Area	Gross Area (m²)	Equivalent Impermeable Area (m²)	Coefficient Runoff
Roads & Footpath	23,186	20,867	0.900
Permeable Parking	13,557	6,779	0.500
Roof	17,963	16,167	0.900
Open Spaces	27,933	13,129	0.470
Green areas & Gardens	16,327	1,633	0.100
Others	-	-	-
Total	**98,966**	**58,574**	0.592

Area	Gross Area (m²)	Equivalent Impermeable Area (m²)	Coefficient Runoff	Qbar (l/s)	Attenuation Volume m³ (20% C.C. + 10% U.C.)
Catch A	16,898	9,927	0.587	**9.13**	**555.89**
Catch E2.1	27,898	15,324	0.549	**15.08**	**835.42**
Catch E2.2	2,921	2,092	0.716	**1.58**	**128.35**
Catch F2	51,250	31,231	0.609	**27.69**	**1,782.31**

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	30	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	Scotland and Ireland	Connection Type	Level Soffits
M5-60 (mm)	15.200	Minimum Backdrop Height (m)	0.200
Ratio-R	0.277	Preferred Cover Depth (m)	1.200
CV	0.900	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
1	0.054	8	5.00	38.053	1200	716556.412	747354.495	1.425	36.628
2	0.110	4	5.00	37.365	1200	716572.672	747393.164	1.436	35.929
3	0.077	5	5.00	36.357	1200	716594.050	747440.874	1.474	34.883
4	0.103	6	5.00	35.818	1200	716613.717	747485.887	1.501	34.317
5	0.039		5.00	35.633	1500	716644.040	747483.532	0.310	35.323
6				35.590	1500	716605.894	747499.204	0.404	35.186
7	0.042		5.00	35.492	1500	716590.813	747501.570	0.357	35.135
8	0.016		5.00	35.339	1500	716560.847	747513.596	1.539	33.800
9	0.084	7	5.00	36.001	1200	716539.004	747467.216	1.651	34.350
10	0.068	8	5.00	35.473	1350	716557.722	747508.864	1.880	33.593
11	0.049		5.00	35.322	1500	716558.326	747514.812	0.310	35.012
12				35.043	1500	716505.690	747537.179	2.193	32.850
13	0.028	9	5.00	35.160	1350	716500.631	747533.599	2.360	32.800
14	0.006		5.00	35.162	1350	716495.972	747540.833	2.448	32.714
15	0.014	6	5.00	34.955	2100	716491.551	747548.282	2.455	32.500
16	0.162	4	5.00	39.602	1200	716361.068	747429.728	1.515	38.087
17	0.142	6	5.00	38.536	1200	716413.521	747430.519	1.835	36.701
18	0.058	9	5.00	37.504	1200	716459.246	747431.023	1.565	35.939
19	0.053	8	5.00	37.541	1200	716562.300	747389.161	1.425	36.116
20	0.093	5	5.00	37.548	1200	716513.322	747410.462	2.041	35.507
21	0.159	6	5.00	37.336	1200	716466.950	747430.590	2.335	35.001
22	0.097	3	5.00	36.424	1200	716586.492	747438.066	1.425	34.999
23	0.061	4	5.00	37.387	1200	716520.957	747413.733	1.425	35.962
24	0.098	2	5.00	36.194	1200	716539.525	747458.183	1.571	34.623
25	0.128	5	5.00	36.423	1500	716487.948	747480.559	2.371	34.052
26	0.051		5.00	36.439	1500	716478.567	747485.283	2.409	34.030
27	0.054	3	5.00	35.589	1500	716493.444	747521.073	2.334	33.255
28	0.010	4	5.00	35.025	1500	716480.965	747542.061	2.811	32.214
29	0.016	6	5.00	35.513	1200	716435.387	747538.114	1.863	33.650
30	0.059	4	5.00	35.209	1200	716454.757	747538.342	1.882	33.327
31	0.068	6	5.00	34.836	1500	716476.086	747550.216	2.670	32.166
32	0.013	7	5.00	34.404	1500	716501.759	747565.364	2.387	32.017
33	0.015	9	5.00	33.928	1500	716501.679	747583.747	2.034	31.894
34	0.023		5.00	35.008	1500	716505.414	747539.057	0.310	34.698
35	0.021		5.00	33.865	1500	716503.580	747585.301	0.367	33.498
36				33.492	1500	716489.716	747609.258	1.792	31.700
37	0.065	6	5.00	33.577	1200	716438.728	747595.973	1.425	32.152
38	0.001		5.00	33.217	1200	716466.729	747612.057	1.517	31.700
39	0.038		5.00	33.163	1500	716483.403	747614.820	1.963	31.200
45	0.019		5.00	38.341	1200	716364.358	747461.735	1.641	36.700
46	0.123	4	5.00	37.714	1200	716364.461	747486.325	1.834	35.880

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Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
48	0.051	7	5.00	36.491	1200	716468.443	747487.384	1.425	35.066
49	0.099	5	5.00	36.728	1200	716426.238	747487.401	1.911	34.817
50	0.043	6	5.00	36.387	1200	716426.371	747503.131	1.802	34.585
51	0.028	6	5.00	36.524	1200	716429.755	747503.188	1.973	34.551
52	0.009		5.00	36.064	1800	716429.358	747524.795	2.064	34.000
53	0.030	6	5.00	35.946	1200	716426.105	747524.741	2.011	33.935
54	0.061	6	5.00	36.224	1200	716389.149	747539.252	1.425	34.799
55	0.083	5	5.00	35.644	1200	716426.024	747539.795	2.764	32.880
56	0.086	2	5.00	33.726	1350	716425.448	747592.389	1.578	32.148
57	0.039	8	5.00	34.128	1350	716394.342	747594.217	2.105	32.023
58	0.028	2	5.00	37.448	1200	716367.566	747493.071	1.798	35.650
59	0.104	2	5.00	36.722	1200	716366.210	747539.815	1.740	34.982
61	0.043	5	5.00	34.600	1200	716368.840	747592.067	1.362	33.238
62	0.027		5.00	34.430	1500	716367.670	747596.574	2.630	31.800
63	0.020		5.00	34.327	1500	716373.869	747598.866	2.537	31.790
150	0.036		5.00	32.456	1200	716576.817	747674.089	1.656	30.800
151	0.049	6	5.00	31.434	1200	716619.883	747680.219	2.134	29.300
152	0.017		5.00	31.242	1200	716631.921	747683.159	2.149	29.093
146	0.008		5.00	30.949	1200	716665.572	747659.424	2.249	28.700
148	0.068	3	5.00	30.775	1200	716671.136	747667.941	2.126	28.649
286			5.00	31.125	1200	716653.474	747653.215	1.425	29.700
147	0.012	4	5.00	30.963	1200	716650.262	747669.986	1.605	29.358
149	0.013	4	5.00	30.882	1200	716654.376	747677.329	2.329	28.553
153	0.009		5.00	31.131	2100	716638.100	747686.446	2.999	28.132
193	0.164		5.00	32.838		716580.772	747621.806	0.310	32.528
194	0.092		5.00	32.498		716618.234	747629.958	0.310	32.188
195	0.030		5.00	31.193		716668.483	747641.462	0.309	30.884
285			5.00	30.834	1500	716683.284	747639.385	3.784	27.050
196	0.016		5.00	30.876	1350	716677.025	747643.233	3.856	27.020
141	0.025		5.00	32.542	1200	716606.134	747630.595	1.542	31.000
142	0.113	7	5.00	32.167	1200	716603.201	747644.844	1.767	30.400
143	0.021	2	5.00	31.749	1200	716629.053	747650.472	2.099	29.650
144	0.020	2	5.00	31.883	1200	716630.784	747643.281	2.283	29.600
145	0.038	1	5.00	31.168	1200	716654.311	747648.844	2.368	28.800
197				31.172	1200	716658.996	747642.877	2.751	28.421
198	0.005	10	5.00	30.913	1500	716676.299	747646.766	3.913	27.000
199	0.036	9	5.00	30.838	1500	716680.977	747647.961	3.854	26.984
200	0.030	9	5.00	30.541	1800	716698.591	747679.099	3.676	26.865
201	0.059	4	5.00	30.485	1500	716700.966	747688.455	3.727	26.758
202	0.068	7	5.00	30.225	1200	716690.944	747719.809	1.825	28.400
203	0.063	4	5.00	30.369	1500	716711.518	747708.392	3.686	26.683
204	0.085	7	5.00	30.488	1500	716729.322	747739.296	3.924	26.564
205	0.042	5	5.00	30.854	1200	716650.911	747699.340	1.410	29.444
206	0.022	2	5.00	30.273	1200	716668.941	747731.691	1.399	28.874
207	0.047	5	5.00	29.820	1200	716677.950	747748.181	1.040	28.780
208	0.042	5	5.00	29.464	1200	716699.328	747786.480	0.975	28.489
209	0.029	6	5.00	29.493	1200	716716.394	747777.033	1.512	27.981
210	0.007	6	5.00	29.459	1200	716726.615	747778.201	1.581	27.878
211	0.032	1	5.00	30.099	1500	716746.857	747770.697	3.730	26.369
212	0.025	2	5.00	29.872	1500	716756.290	747766.395	3.538	26.334
212_OUT	0.010	8		27.497	1800	716767.384	747787.361	1.297	26.200
231	0.045	2	5.00	29.431	1200	716533.791	747916.818	1.425	28.006

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Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
232	0.042	3	5.00	29.519	1200	716534.013	747931.876	1.602	27.917
233	0.032	2	5.00	29.699	1200	716558.885	747947.366	1.955	27.744
234	0.042	6	5.00	29.801	1200	716568.928	747948.889	2.117	27.684
235	0.029		5.00	29.041	1200	716591.059	747936.537	1.526	27.515
236	0.047	4	5.00	29.600	1200	716574.451	747964.735	1.450	28.150
237	0.075	5	5.00	28.303	1200	716606.870	747946.211	2.303	26.000
239	0.030	6	5.00	28.020	1200	716653.860	747915.946	2.020	26.000
240	0.016	2	5.00	27.890	1200	716653.047	747940.862	2.202	25.688
241	0.032	5	5.00	27.740	1200	716634.358	747951.978	1.425	26.315
242	0.001		5.00	27.895	1200	716650.711	747942.296	2.224	25.671
243	0.002		5.00	27.858	1200	716652.062	747944.603	2.203	25.655
244				27.761	1200	716649.098	747956.052	3.161	24.600
245	0.077	5	5.00	27.429	1200	716644.381	747969.461	2.929	24.500
245_OUT				23.413	1800	716658.899	747976.102	0.243	23.170
259	0.063	5	5.00	28.744	1200	716537.521	747877.603	1.444	27.300
261	0.066	4	5.00	29.190	1200	716591.412	747925.136	0.975	28.215
262	0.078	7	5.00	28.470	1200	716592.805	747878.674	1.446	27.024
263	0.030	3	5.00	28.487	1500	716574.422	747875.361	0.310	28.177
264	0.048	3	5.00	28.128	1500	716646.639	747876.793	1.328	26.800
265	0.029	10	5.00	28.201	1200	716646.667	747879.730	2.461	25.740
266	0.014		5.00	28.203	1200	716649.990	747882.331	2.703	25.500
266_OUT				25.239	1800	716658.636	747873.377	0.237	25.002
267	0.052	3	5.00	29.151	1200	716580.712	747986.186	1.425	27.726
268	0.020		5.00	28.589	1200	716590.005	748003.132	1.507	27.082
270	0.075	3	5.00	28.504	1200	716603.128	748023.087	1.564	26.940
271	0.008		5.00	28.103	1200	716629.643	748008.214	1.467	26.636
272	0.011		5.00	27.242	1200	716638.812	748005.800	3.242	24.000
273	0.013	4	5.00	27.948	1200	716637.790	748003.630	4.048	23.900
273_OUT				21.819	1800	716649.012	748004.537	0.421	21.398

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	1	2	41.949	0.600	36.628	35.929	0.699	60.0	225	5.41	50.0
1.001	2	3	52.281	0.600	35.929	34.883	1.046	50.0	225	5.88	50.0
1.002	3	4	49.122	0.600	34.883	34.392	0.491	100.0	225	6.51	50.0
1.003	4	10	60.526	0.600	34.317	33.712	0.605	100.0	300	7.15	50.0
2.000	5	6	41.240	0.030	35.323	35.186	0.137	300.0	100	6.25	50.0
2.001	6	7	15.265	0.030	35.186	35.135	0.051	300.0	100	6.72	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.691	67.2	9.5	1.200	1.211	0.059	0.0	57	1.201
1.001	1.854	73.7	28.1	1.211	1.249	0.173	0.0	96	1.732
1.002	1.307	52.0	41.3	1.249	1.201	0.254	0.0	152	1.445
1.003	1.572	111.1	59.0	1.201	1.461	0.363	0.0	156	1.595
2.000	0.548	263.0	6.4	0.010	0.104	0.039	0.0	68	0.216
2.001	0.548	263.0	6.4	0.104	0.057	0.039	0.0	68	0.216

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2.002	7	8	32.289	0.030	35.135	35.035	0.100	322.9	100	7.74	50.0
2.003	8	10	5.671	0.030	33.800	33.743	0.057	100.0	225	7.93	50.0
3.000	9	10	45.661	0.600	34.350	34.048	0.302	151.2	225	5.72	50.0
1.004	10	13	62.219	0.600	33.593	33.247	0.346	180.0	375	8.70	50.0
4.000	11	12	57.191	0.030	35.012	34.512	0.500	114.4	100	6.07	50.0
4.001	12	13	6.198	0.030	32.850	32.800	0.050	124.0	375	6.24	50.0
1.005	13	14	8.604	0.600	32.800	32.714	0.086	100.0	375	8.78	50.0
1.006	14	15	8.662	0.600	32.714	32.671	0.043	200.0	375	8.89	50.0
1.007	15	28	12.279	0.600	32.500	32.439	0.061	200.0	300	9.08	50.0
5.000	16	17	52.459	0.600	38.087	36.776	1.311	40.0	225	5.42	50.0
5.001	17	18	45.728	0.600	36.701	35.939	0.762	60.0	300	5.80	50.0
5.002	18	21	7.716	0.600	35.939	35.810	0.129	60.0	300	5.86	50.0
6.000	19	20	53.410	0.600	36.116	35.582	0.534	100.0	225	5.68	50.0
6.001	20	21	50.552	0.600	35.507	35.001	0.506	100.0	300	6.22	50.0
5.003	21	25	54.202	0.600	35.009	34.277	0.732	74.0	300	6.71	50.0
7.000	22	24	51.094	0.600	34.999	34.698	0.301	169.7	225	5.85	50.0
8.000	23	24	48.172	0.600	35.962	34.758	1.204	40.0	225	5.39	50.0
7.001	24	25	56.222	0.600	34.623	34.277	0.346	162.5	300	6.61	50.0
5.004	25	26	10.503	0.600	34.052	34.030	0.022	477.4	525	6.88	50.0
5.005	26	27	38.759	0.600	34.030	33.255	0.775	50.0	525	7.09	50.0
5.006	27	28	24.418	0.600	33.255	32.767	0.488	50.0	525	7.21	50.0
1.008	28	31	9.503	0.600	32.214	32.166	0.048	200.0	525	9.18	50.0
9.000	29	30	19.371	0.600	33.650	33.327	0.323	60.0	225	5.19	50.0
9.001	30	31	24.411	0.600	33.327	32.894	0.433	56.4	225	5.42	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.002	0.528	253.5	13.1	0.057	0.004	0.081	0.0	93	0.252
2.003	0.489	19.5	15.7	1.314	1.505	0.096	0.0	152	0.544
3.000	1.061	42.2	14.6	1.426	1.200	0.090	0.0	91	0.965
1.004	1.347	148.8	101.2	1.505	1.538	0.622	0.0	227	1.445
4.000	0.887	426.0	8.0	0.010	0.231	0.049	0.0	61	0.327
4.001	0.618	68.2	8.0	1.818	1.985	0.049	0.0	87	0.414
1.005	1.812	200.1	114.2	1.985	2.073	0.702	0.0	203	1.869
1.006	1.277	141.1	115.1	2.073	1.909	0.708	0.0	258	1.417
1.007	1.108	78.3	117.6	2.155	2.286	0.723	0.0	300	1.122
5.000	2.074	82.5	27.3	1.290	1.535	0.168	0.0	89	1.870
5.001	2.033	143.7	51.9	1.535	1.265	0.319	0.0	125	1.874
5.002	2.033	143.7	62.3	1.265	1.226	0.383	0.0	138	1.963
6.000	1.307	52.0	9.3	1.200	1.741	0.057	0.0	64	0.990
6.001	1.572	111.1	25.3	1.741	2.035	0.155	0.0	97	1.281
5.003	1.829	129.3	114.8	2.027	1.846	0.706	0.0	221	2.056
7.000	1.000	39.8	16.3	1.200	1.271	0.100	0.0	100	0.950
8.000	2.074	82.5	10.3	1.200	1.211	0.063	0.0	53	1.422
7.001	1.230	87.0	42.9	1.271	1.846	0.264	0.0	149	1.226
5.004	1.018	220.4	179.5	1.846	1.884	1.104	0.0	362	1.129
5.005	3.173	686.8	187.7	1.884	1.809	1.154	0.0	187	2.723
5.006	3.173	686.8	196.8	1.809	1.733	1.210	0.0	191	2.756
1.008	1.580	342.0	316.0	2.286	2.145	1.943	0.0	401	1.781
9.000	1.691	67.2	2.8	1.638	1.657	0.017	0.0	31	0.842
9.001	1.745	69.4	12.7	1.657	1.717	0.078	0.0	65	1.332

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.009	31	32	29.809	0.600	32.166	32.017	0.149	200.0	525	9.49	50.0
1.010	32	33	18.383	0.600	32.017	31.894	0.123	150.0	525	9.66	50.0
1.011	33	39	36.049	0.600	31.894	31.293	0.601	60.0	525	9.87	50.0
10.000	34	35	46.280	0.030	34.698	33.498	1.200	38.6	100	5.50	50.0
10.001	35	36	27.679	0.030	33.498	32.944	0.554	50.0	100	5.85	50.0
10.002	36	39	8.414	0.030	31.700	31.600	0.100	84.1	225	6.11	50.0
11.000	37	38	32.292	0.600	32.152	31.700	0.452	71.4	225	5.35	50.0
11.001	38	39	16.901	0.600	31.700	31.500	0.200	84.5	225	5.55	50.0
1.012	39	40	6.993	0.600	31.200	31.130	0.070	100.0	525	9.92	50.0
13.000	45	46	24.590	0.600	36.700	35.880	0.820	30.0	225	5.17	50.0
13.001	46	49	61.786	0.600	35.880	35.262	0.618	100.0	225	5.96	50.0
14.000	48	49	42.205	0.600	35.066	34.817	0.249	169.5	225	5.70	50.0
13.002	49	50	15.731	0.600	34.817	34.660	0.157	100.0	225	6.16	50.0
13.003	50	51	3.384	0.600	34.585	34.551	0.034	100.0	300	6.20	50.0
13.004	51	52	21.611	0.600	34.551	34.443	0.108	200.0	300	6.52	50.0
13.005	52	53	3.253	0.600	34.000	33.935	0.065	50.0	300	6.54	50.0
13.006	53	55	15.054	0.600	33.935	33.634	0.301	50.0	300	6.66	50.0
15.000	54	55	36.879	0.600	34.799	32.955	1.844	20.0	225	5.21	50.0
13.007	55	56	52.597	0.600	32.880	32.223	0.657	80.0	300	7.16	50.0
13.008	56	57	31.160	0.600	32.148	32.023	0.125	250.0	375	7.61	50.0
13.009	57	63	20.994	0.600	32.023	31.939	0.084	250.0	375	7.92	50.0
16.000	58	59	46.764	0.600	35.650	34.982	0.668	70.0	225	5.50	50.0
16.001	59	61	52.318	0.600	34.982	33.238	1.744	30.0	225	5.86	50.0
16.002	61	63	8.457	0.600	33.238	32.900	0.338	25.0	225	5.92	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.009	1.580	342.0	340.4	2.145	1.862	2.093	0.0	432	1.787
1.010	1.826	395.3	342.5	1.862	1.509	2.106	0.0	380	2.043
1.011	2.895	626.7	345.2	1.509	1.345	2.122	0.0	278	2.961
10.000	1.528	733.6	3.7	0.010	0.067	0.023	0.0	34	0.405
10.001	1.342	644.3	7.2	0.067	0.248	0.044	0.0	48	0.433
10.002	0.533	21.2	7.2	1.567	1.338	0.044	0.0	90	0.482
11.000	1.549	61.6	11.2	1.200	1.292	0.069	0.0	65	1.182
11.001	1.423	56.6	11.5	1.292	1.438	0.070	0.0	68	1.118
1.012	2.240	484.8	369.9	1.438	1.339	2.275	0.0	345	2.454
13.000	2.397	95.3	3.2	1.416	1.609	0.019	0.0	28	1.109
13.001	1.307	52.0	24.1	1.609	1.241	0.148	0.0	108	1.283
14.000	1.001	39.8	9.0	1.200	1.686	0.055	0.0	73	0.812
13.002	1.307	52.0	50.1	1.686	1.502	0.308	0.0	178	1.482
13.003	1.572	111.1	57.5	1.502	1.673	0.354	0.0	153	1.585
13.004	1.108	78.3	62.2	1.673	1.321	0.383	0.0	202	1.225
13.005	2.228	157.5	63.7	1.764	1.711	0.392	0.0	133	2.115
13.006	2.228	157.5	68.8	1.711	1.710	0.423	0.0	139	2.156
15.000	2.939	116.8	10.4	1.200	2.464	0.064	0.0	45	1.837
13.007	1.759	124.3	93.4	2.464	1.203	0.574	0.0	195	1.925
13.008	1.141	126.0	107.7	1.203	1.730	0.662	0.0	268	1.276
13.009	1.141	126.0	114.6	1.730	2.013	0.705	0.0	282	1.286
16.000	1.565	62.2	4.7	1.573	1.515	0.029	0.0	42	0.930
16.001	2.397	95.3	22.0	1.515	1.137	0.135	0.0	73	1.960
16.002	2.627	104.5	29.4	1.137	1.202	0.181	0.0	81	2.263

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
17.000	62	63	6.609	0.600	31.800	31.790	0.010	660.9	450	5.14	50.0
13.010	63	64	8.641	0.600	31.790	31.764	0.026	332.3	450	8.05	50.0
46.000_1	150	151	43.500	0.600	30.800	29.930	0.870	50.0	225	5.39	50.0
46.001_1	151	152	12.392	0.600	29.300	29.093	0.207	60.0	225	5.51	50.0
46.002_1	152	153	6.999	0.600	29.093	28.976	0.117	60.0	225	5.58	50.0
47.000_1	146	148	10.173	0.600	28.700	28.649	0.051	200.0	225	5.18	50.0
47.001	148	149	19.210	0.600	28.649	28.553	0.096	200.0	225	5.53	50.0
48.000_1	286	147	17.076	0.600	29.700	29.358	0.342	50.0	225	5.15	50.0
48.001	147	149	8.417	0.600	29.358	29.190	0.168	50.0	225	5.23	50.0
47.002	149	153	18.656	0.600	28.553	28.357	0.196	95.2	225	5.76	50.0
46.003	153	155	7.190	0.600	28.132	28.097	0.035	205.4	450	5.85	50.0
55.000_1	193	194	38.339	0.030	32.528	32.188	0.340	112.8	100	5.71	50.0
55.001	194	195	51.549	0.030	32.188	30.884	1.304	39.5	100	6.28	50.0
55.002	195	196	8.724	0.030	30.884	30.545	0.339	25.7	100	6.36	50.0
56.000	285	196	7.347	0.600	27.050	27.020	0.030	244.9	525	5.09	50.0
55.003	196	198	3.607	0.030	27.020	27.000	0.020	180.3	525	6.46	50.0
57.000	141	142	14.548	0.600	31.000	30.636	0.364	40.0	225	5.12	50.0
57.001	142	143	26.458	0.600	30.400	29.650	0.750	35.3	225	5.32	50.0
57.002	143	144	7.396	0.600	29.650	29.600	0.050	147.9	225	5.43	50.0
57.003	144	145	24.176	0.600	29.600	29.313	0.287	84.2	225	5.71	50.0
57.004	145	197	7.586	0.600	28.800	28.421	0.379	20.0	225	5.76	50.0
57.005	197	198	17.735	0.600	28.421	28.244	0.177	100.0	225	5.98	50.0
55.004	198	199	4.832	0.030	27.000	26.984	0.016	300.0	525	6.62	50.0
55.005	199	200	35.775	0.030	26.984	26.865	0.119	300.0	525	7.82	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
17.000	0.783	124.6	4.5	2.180	2.087	0.027	0.0	58	0.374
13.010	1.109	176.4	151.6	2.087	1.932	0.932	0.0	323	1.241
46.000_1	1.854	73.7	5.9	1.431	1.279	0.036	0.0	43	1.117
46.001_1	1.691	67.2	14.4	1.909	1.924	0.089	0.0	71	1.356
46.002_1	1.691	67.2	17.2	1.924	1.930	0.106	0.0	77	1.416
47.000_1	0.921	36.6	1.3	2.024	1.901	0.008	0.0	29	0.431
47.001	0.921	36.6	12.6	1.901	2.104	0.077	0.0	91	0.837
48.000_1	1.854	73.7	0.0	1.200	1.380	0.000	0.0	0	0.000
48.001	1.854	73.7	2.0	1.380	1.467	0.012	0.0	25	0.804
47.002	1.340	53.3	16.8	2.104	2.549	0.104	0.0	87	1.190
46.003	1.414	225.0	35.5	2.549	2.475	0.218	0.0	120	1.043
55.000_1	0.894	429.0	26.6	0.010	0.010	0.164	0.0	100	0.446
55.001	1.509	724.6	41.5	0.010	0.009	0.255	0.0	96	0.737
55.002	1.871	898.0	46.3	0.009	0.031	0.285	0.0	92	0.889
56.000	1.427	308.8	0.0	3.259	3.331	0.000	0.0	0	0.000
55.003	0.641	138.8	48.9	3.331	3.388	0.301	0.0	215	0.585
57.000	2.074	82.5	4.1	1.317	1.306	0.025	0.0	34	1.087
57.001	2.210	87.9	23.8	1.542	1.874	0.147	0.0	80	1.883
57.002	1.073	42.6	27.3	1.874	2.058	0.168	0.0	131	1.137
57.003	1.425	56.7	30.6	2.058	1.630	0.188	0.0	117	1.450
57.004	2.939	116.8	36.8	2.143	2.526	0.226	0.0	87	2.612
57.005	1.307	52.0	36.8	2.526	2.444	0.226	0.0	140	1.415
55.004	0.497	107.6	86.6	3.388	3.329	0.532	0.0	357	0.553
55.005	0.497	107.6	92.9	3.329	3.151	0.571	0.0	377	0.559

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Links

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55.006	200	201	9.653	0.030	26.865	26.833	0.032	300.0	525	8.14	50.0
55.007	201	203	22.557	0.030	26.758	26.683	0.075	300.0	600	8.83	50.0
58.000	202	203	23.529	0.600	28.400	27.929	0.471	50.0	225	5.21	50.0
55.008	203	204	35.666	0.030	26.683	26.564	0.119	300.0	600	9.93	50.0
55.009	204	211	35.965	0.030	26.564	26.444	0.120	300.0	600	11.03	50.0
59.000	205	206	37.036	0.600	29.444	28.874	0.570	65.0	225	5.38	50.0
59.001	206	207	18.790	0.600	28.874	28.780	0.094	200.0	225	5.72	50.0
59.002	207	208	43.862	0.600	28.780	28.489	0.291	150.7	225	6.41	50.0
59.003	208	209	19.506	0.600	28.489	27.981	0.508	38.4	225	6.56	50.0
59.004	209	210	10.288	0.600	27.981	27.878	0.103	100.0	225	6.69	50.0
59.005	210	211	21.588	0.600	27.878	27.662	0.216	100.0	225	6.97	50.0
55.010	211	212	10.368	0.030	26.369	26.334	0.035	300.0	675	11.32	50.0
55.011	212	212_OUT	23.720	0.030	26.334	26.200	0.134	177.0	225	12.40	50.0
64.000	231	232	15.060	0.600	28.006	27.917	0.089	169.2	225	5.25	50.0
64.001	232	233	29.301	0.600	27.917	27.744	0.173	169.4	225	5.74	50.0
64.002	233	234	10.158	0.600	27.744	27.684	0.060	169.3	225	5.91	50.0
64.003	234	235	25.345	0.600	27.684	27.515	0.169	150.0	225	6.30	50.0
64.004	235	237	18.536	0.600	27.515	26.774	0.741	25.0	225	6.42	50.0
65.000	236	237	37.338	0.600	28.150	26.862	1.288	29.0	225	5.26	50.0
64.005	237	245	44.132	0.600	26.000	24.500	1.500	29.4	225	6.73	50.0
66.000	239	240	24.929	0.600	26.000	25.688	0.312	80.0	225	5.28	50.0
66.001	240	242	2.741	0.600	25.688	25.671	0.017	161.2	225	5.33	50.0
67.000	241	242	19.004	0.600	26.315	26.203	0.112	169.7	225	5.32	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
55.006	0.497	107.6	98.3	3.151	3.127	0.604	0.0	395	0.564
55.007	0.543	153.6	108.2	3.127	3.086	0.665	0.0	371	0.589
58.000	1.854	73.7	11.9	1.600	2.215	0.073	0.0	61	1.373
55.008	0.543	153.6	130.7	3.086	3.324	0.804	0.0	425	0.610
55.009	0.543	153.6	145.4	3.324	3.055	0.894	0.0	465	0.618
59.000	1.624	64.6	7.1	1.185	1.174	0.044	0.0	51	1.080
59.001	0.921	36.6	10.9	1.174	0.815	0.067	0.0	84	0.805
59.002	1.062	42.2	18.9	0.815	0.750	0.116	0.0	105	1.032
59.003	2.117	84.2	26.1	0.750	1.287	0.160	0.0	86	1.872
59.004	1.307	52.0	31.2	1.287	1.356	0.192	0.0	125	1.363
59.005	1.307	52.0	32.4	1.356	2.212	0.199	0.0	129	1.376
55.010	0.588	210.3	183.0	3.055	2.863	1.125	0.0	487	0.662
55.011	0.368	14.6	187.1	3.313	1.072	1.151	0.0	225	0.375
64.000	1.002	39.8	7.6	1.200	1.377	0.046	0.0	66	0.775
64.001	1.002	39.8	14.5	1.377	1.730	0.089	0.0	94	0.923
64.002	1.002	39.8	19.9	1.730	1.892	0.122	0.0	112	1.000
64.003	1.065	42.3	27.0	1.892	1.301	0.166	0.0	131	1.127
64.004	2.627	104.5	31.8	1.301	1.304	0.195	0.0	85	2.311
65.000	2.438	96.9	7.9	1.225	1.216	0.049	0.0	44	1.488
64.005	2.421	96.2	52.6	2.078	2.704	0.324	0.0	119	2.476
66.000	1.463	58.2	5.2	1.795	1.977	0.032	0.0	45	0.912
66.001	1.027	40.8	7.8	1.977	1.999	0.048	0.0	66	0.794
67.000	1.001	39.8	5.4	1.200	1.467	0.033	0.0	56	0.703

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Links

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66.002	242	243	2.673	0.600	25.671	25.655	0.016	167.1	225	5.37	50.0
66.003	243	244	11.826	0.600	25.655	25.447	0.208	56.9	225	5.49	50.0
66.004	244	245	14.214	0.600	24.600	24.500	0.100	142.1	225	5.70	50.0
64.006	245	245_OUT	15.965	0.600	24.500	23.170	1.330	12.0	225	6.80	50.0
73.000	259	262	55.294	0.600	27.300	27.024	0.276	200.0	225	6.00	50.0
74.000	261	262	46.483	0.600	28.215	27.495	0.720	64.6	225	5.48	50.0
73.001	262	265	53.872	0.600	27.024	26.755	0.269	200.0	225	6.98	50.0
75.000	263	264	72.231	0.030	28.177	27.816	0.361	200.0	100	6.79	50.0
75.001	264	265	2.937	0.030	26.800	26.771	0.029	100.0	225	6.89	50.0
73.002	265	266	4.220	0.600	25.740	25.700	0.040	105.5	300	7.02	50.0
73.003	266	266_OUT	12.447	0.600	25.500	25.002	0.498	25.0	225	7.10	50.0
76.000	267	268	19.327	0.600	27.726	27.082	0.644	30.0	225	5.13	50.0
76.001	268	270	23.883	0.600	27.082	26.940	0.142	168.2	225	5.53	50.0
76.002	270	271	30.402	0.600	26.940	26.636	0.304	100.0	225	5.92	50.0
76.003	271	273	9.348	0.600	26.636	26.519	0.117	80.0	225	6.02	50.0
77.000	272	273	2.399	0.600	24.000	23.900	0.100	24.0	225	5.01	50.0
76.004	273	273_OUT	11.259	0.600	23.900	21.398	2.502	4.5	225	6.05	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
66.002	1.008	40.1	13.3	1.999	1.978	0.082	0.0	89	0.909
66.003	1.738	69.1	13.6	1.978	2.089	0.084	0.0	67	1.356
66.004	1.094	43.5	13.6	2.936	2.704	0.084	0.0	87	0.972
64.006	3.798	151.0	79.3	2.704	0.018	0.488	0.0	116	3.839
73.000	0.921	36.6	10.7	1.219	1.221	0.066	0.0	83	0.801
74.000	1.630	64.8	11.2	0.750	0.750	0.069	0.0	63	1.226
73.001	0.921	36.6	35.4	1.221	1.221	0.218	0.0	179	1.045
75.000	0.671	322.1	5.0	0.010	0.012	0.030	0.0	56	0.236
75.001	0.489	19.5	13.0	1.103	1.205	0.080	0.0	135	0.525
73.002	1.530	108.2	53.6	2.161	2.203	0.330	0.0	149	1.526
73.003	2.627	104.5	55.9	2.478	0.012	0.344	0.0	117	2.672
76.000	2.397	95.3	8.8	1.200	1.282	0.054	0.0	46	1.514
76.001	1.005	40.0	12.0	1.282	1.339	0.074	0.0	85	0.883
76.002	1.307	52.0	24.7	1.339	1.242	0.152	0.0	109	1.292
76.003	1.463	58.2	25.9	1.242	1.204	0.159	0.0	105	1.421
77.000	2.682	106.7	1.8	3.017	3.823	0.011	0.0	20	1.001
76.004	6.210	246.9	29.8	3.823	0.196	0.183	0.0	52	4.224

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	Scotland and Ireland	Drain Down Time (mins)	360
M5-60 (mm)	15.200	Additional Storage (m³/ha)	20.0
Ratio-R	0.277	Starting Level (m)	
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	1.000	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	0	0	0
30	20	0	0
100	20	0	0

Node 15 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	32.500	Product Number	CTL-SHE-0096-6000-2400-6000
Design Depth (m)	2.400	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	6.0	Min Node Diameter (mm)	1200

Node 52 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	34.000	Product Number	CTL-SHE-0070-3000-2000-3000
Design Depth (m)	2.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.0	Min Node Diameter (mm)	1200

Node 63 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	31.790	Product Number	CTL-SHE-0095-6000-2500-6000
Design Depth (m)	2.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	6.0	Min Node Diameter (mm)	1200

Node 273 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	23.900	Product Number	CTL-SHE-0043-1500-3500-1500
Design Depth (m)	3.500	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.5	Min Node Diameter (mm)	1200

Node 245 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	24.500	Product Number	CTL-SHE-0086-5300-3000-5300
Design Depth (m)	3.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	5.3	Min Node Diameter (mm)	1200

Node 266 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	25.500	Product Number	CTL-SHE-0052-2000-3000-2000
Design Depth (m)	3.000	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

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Node 212 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	26.334	Product Number	CTL-SHE-0061-3000-3700-3000
Design Depth (m)	3.700	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	3.0	Min Node Diameter (mm)	1200

Node 153 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	28.132	Product Number	CTL-SHE-0124-1000-2500-1000
Design Depth (m)	2.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	10.0	Min Node Diameter (mm)	1500

Node 200 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	26.865	Product Number	CTL-SHE-0139-1500-3660-1500
Design Depth (m)	3.660	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	15.0	Min Node Diameter (mm)	1500

Node 15 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	32.500
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.57	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	174.0	174.0	1.840	235.0	285.2	1.841	0.0	285.2

Node 12 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	32.850
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.46	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	235.0	235.0	1.500	235.0	316.5	1.501	0.0	316.5

Node 52 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	34.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.60	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	214.0	214.0	1.590	283.0	326.3	1.591	0.0	326.3

Node 62 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	31.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.55	Time to half empty (mins)	

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	316.0	316.0	1.820	462.0	509.3	1.821	0.0	509.3

Node 272 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	24.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.48	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	71.0	71.0	1.970	152.0	179.7	1.971	0.0	179.7

Node 265 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	25.740
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.55	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	153.0	153.0	1.740	266.0	296.5	1.741	0.0	296.5

Node 244 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	24.600
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.54	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	125.0	125.0	2.390	195.0	252.5	2.391	0.0	252.5

Node 212 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	26.334
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.49	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	195.0	195.0	3.340	318.0	419.9	3.341	0.0	419.9

Node 146 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	28.700
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.51	Time to half empty (mins)	52

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	42.0	42.0	1.670	71.0	94.8	1.671	0.0	94.8

Node 285 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	27.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.53	Time to half empty (mins)	

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	317.0	317.0	2.970	451.0	562.3	2.971	0.0	562.3

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	36.696	0.068	13.7	0.1328	0.0000	OK
15 minute summer	2	11	36.045	0.116	40.1	0.3147	0.0000	OK
15 minute summer	3	11	35.099	0.216	58.0	0.4814	0.0000	OK
15 minute summer	4	11	34.508	0.191	78.4	0.4948	0.0000	OK
15 minute summer	5	11	35.416	0.093	9.2	0.3982	0.0000	OK
30 minute summer	6	21	35.260	0.074	8.6	0.1306	0.0000	OK
30 minute summer	7	21	35.245	0.110	14.7	0.4501	0.0000	OK
30 minute summer	8	21	33.945	0.145	14.0	0.2861	0.0000	OK
15 minute summer	9	11	34.462	0.112	20.9	0.2484	0.0000	OK
15 minute summer	10	12	33.861	0.268	124.1	0.5935	0.0000	OK
30 minute summer	11	20	35.085	0.073	10.8	0.3607	0.0000	OK
600 minute summer	12	480	33.431	0.581	11.9	63.8211	0.0000	SURCHARGED
600 minute summer	13	480	33.431	0.631	26.4	1.0656	0.0000	SURCHARGED
600 minute summer	14	495	33.431	0.717	16.3	1.0602	0.0000	SURCHARGED
600 minute summer	15	495	33.431	0.931	16.7	103.8396	0.0000	SURCHARGED
15 minute summer	16	10	38.197	0.110	39.2	0.3699	0.0000	OK
15 minute summer	17	10	36.852	0.151	73.6	0.4193	0.0000	OK
15 minute summer	18	11	36.142	0.203	87.6	0.3938	0.0000	OK
15 minute summer	19	11	36.193	0.077	13.3	0.1490	0.0000	OK
15 minute summer	20	12	35.647	0.140	35.5	0.2929	0.0000	OK
15 minute summer	21	11	35.599	0.598	159.8	1.5333	0.0000	SURCHARGED
15 minute summer	22	11	35.123	0.124	23.3	0.3139	0.0000	OK
15 minute summer	23	10	36.026	0.064	14.7	0.1295	0.0000	OK
15 minute summer	24	11	34.811	0.188	59.6	0.4523	0.0000	OK
15 minute summer	25	11	34.392	0.340	234.6	0.9869	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	13.5	0.886	0.201	0.6427	
15 minute summer	2	1.001	3	39.1	1.391	0.531	1.5617	
15 minute summer	3	1.002	4	54.1	1.492	1.041	1.8500	
15 minute summer	4	1.003	10	77.6	1.686	0.698	2.7894	
15 minute summer	5	2.000	6	9.5	0.251	0.036	1.5957	
30 minute summer	6	2.001	7	7.5	0.145	0.028	0.8104	
30 minute summer	7	2.002	8	12.0	0.280	0.047	1.4982	
30 minute summer	8	2.003	10	13.9	0.640	0.717	0.1325	
15 minute summer	9	3.000	10	20.3	1.048	0.482	0.8863	
15 minute summer	10	1.004	13	122.5	1.499	0.823	5.0850	
30 minute summer	11	4.000	12	8.6	0.355	0.020	1.4378	
600 minute summer	12	4.001	13	-9.9	-0.298	-0.146	0.6836	
600 minute summer	13	1.005	14	16.1	0.759	0.080	0.9490	
600 minute summer	14	1.006	15	16.1	0.673	0.114	0.9554	
600 minute summer	15	1.007	28	4.7	0.603	0.060	0.0955	
15 minute summer	16	5.000	17	38.3	2.020	0.464	0.9959	
15 minute summer	17	5.001	18	72.8	1.696	0.507	1.9597	
15 minute summer	18	5.002	21	87.5	1.920	0.609	0.3509	
15 minute summer	19	6.000	20	12.9	1.086	0.248	0.6351	
15 minute summer	20	6.001	21	34.8	0.691	0.313	2.5926	
15 minute summer	21	5.003	25	146.5	2.100	1.134	3.7614	
15 minute summer	22	7.000	24	22.6	1.030	0.569	1.1233	
15 minute summer	23	8.000	24	14.3	1.554	0.173	0.4439	
15 minute summer	24	7.001	25	59.3	1.315	0.682	2.5352	
15 minute summer	25	5.004	26	233.8	1.969	1.061	1.2479	

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	26	11	34.257	0.227	245.0	0.4970	0.0000	OK
15 minute summer	27	12	33.501	0.246	255.7	0.5521	0.0000	OK
15 minute summer	28	12	32.659	0.445	259.8	0.8190	0.0000	OK
15 minute summer	29	10	33.687	0.037	4.0	0.0485	0.0000	OK
15 minute summer	30	10	33.407	0.080	18.1	0.1432	0.0000	OK
15 minute summer	31	12	32.575	0.409	289.5	0.9425	0.0000	OK
15 minute summer	32	12	32.379	0.362	293.3	0.6807	0.0000	OK
15 minute summer	33	12	32.168	0.274	296.6	0.5266	0.0000	OK
15 minute summer	34	11	34.737	0.039	5.3	0.1270	0.0000	OK
15 minute summer	35	12	33.552	0.054	9.9	0.1599	0.0000	OK
15 minute summer	36	12	31.809	0.109	8.8	0.1928	0.0000	OK
15 minute summer	37	10	32.231	0.079	16.1	0.1655	0.0000	OK
15 minute summer	38	11	31.786	0.086	16.3	0.0988	0.0000	OK
15 minute summer	39	12	31.597	0.397	326.2	0.8528	0.0000	OK
15 minute summer	45	10	36.733	0.033	4.5	0.0452	0.0000	OK
15 minute summer	46	11	36.014	0.134	34.4	0.3383	0.0000	OK
15 minute summer	48	12	35.199	0.133	12.8	0.2528	0.0000	OK
15 minute summer	49	11	35.175	0.358	68.2	0.7977	0.0000	SURCHARGED
15 minute summer	50	11	34.869	0.284	73.9	0.4645	0.0000	OK
15 minute summer	51	11	34.823	0.272	80.4	0.3883	0.0000	OK
960 minute summer	52	690	34.726	0.726	12.0	101.9168	0.0000	SURCHARGED
30 minute summer	53	18	33.985	0.050	8.9	0.0717	0.0000	OK
15 minute summer	54	10	34.854	0.055	15.0	0.1116	0.0000	OK
15 minute summer	55	10	33.005	0.125	43.4	0.2189	0.0000	OK
960 minute summer	56	720	32.556	0.408	10.6	1.0377	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	26	5.005	27	243.3	2.582	0.354	3.6554	
15 minute summer	27	5.006	28	255.5	2.784	0.372	2.2413	
15 minute summer	28	1.008	31	260.8	1.386	0.762	1.7855	
15 minute summer	29	9.000	30	3.9	0.481	0.059	0.1643	
15 minute summer	30	9.001	31	17.8	1.439	0.257	0.3026	
15 minute summer	31	1.009	32	290.9	1.712	0.851	5.0585	
15 minute summer	32	1.010	33	293.7	2.148	0.743	2.5059	
15 minute summer	33	1.011	39	296.0	2.497	0.472	4.3814	
15 minute summer	34	10.000	35	5.1	0.349	0.007	0.7239	
15 minute summer	35	10.001	36	8.8	0.478	0.014	0.5108	
15 minute summer	36	10.002	39	8.7	0.564	0.408	0.1296	
15 minute summer	37	11.000	38	16.0	1.216	0.259	0.4239	
15 minute summer	38	11.001	39	16.2	1.188	0.287	0.2435	
15 minute summer	39	1.012	40	325.5	2.049	0.671	1.1126	
15 minute summer	45	13.000	46	4.5	0.362	0.047	0.3454	
15 minute summer	46	13.001	49	33.3	1.382	0.642	1.4908	
15 minute summer	48	14.000	49	12.2	0.415	0.307	1.3538	
15 minute summer	49	13.002	50	64.5	1.622	1.240	0.6152	
15 minute summer	50	13.003	51	73.9	1.095	0.665	0.2303	
15 minute summer	51	13.004	52	80.3	1.295	1.025	1.3275	
960 minute summer	52	13.005	53	2.2	0.758	0.014	0.0107	
30 minute summer	53	13.006	55	8.8	1.189	0.056	0.1117	
15 minute summer	54	15.000	55	14.8	2.004	0.126	0.2720	
15 minute summer	55	13.007	56	43.1	1.576	0.347	1.4491	
960 minute summer	56	13.008	57	10.0	0.598	0.079	3.4369	

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	57	720	32.556	0.533	11.3	0.9774	0.0000	SURCHARGED
15 minute summer	58	10	35.699	0.049	6.8	0.0719	0.0000	OK
15 minute summer	59	10	35.070	0.088	31.4	0.2058	0.0000	OK
15 minute summer	61	11	33.349	0.111	41.4	0.2005	0.0000	OK
960 minute summer	62	720	32.556	0.756	12.7	145.4065	0.0000	SURCHARGED
960 minute summer	63	720	32.556	0.766	16.7	1.4707	0.0000	SURCHARGED
15 minute summer	150	10	30.851	0.051	8.4	0.0799	0.0000	OK
15 minute summer	151	10	29.390	0.090	20.4	0.1456	0.0000	OK
15 minute summer	152	10	29.198	0.105	24.1	0.1348	0.0000	OK
60 minute summer	146	44	29.162	0.462	25.5	11.4088	0.0000	SURCHARGED
60 minute summer	148	47	29.166	0.517	24.9	0.9222	0.0000	SURCHARGED
15 minute summer	286	1	29.700	0.000	0.0	0.0000	0.0000	OK
15 minute summer	147	10	29.389	0.031	2.8	0.0394	0.0000	OK
60 minute summer	149	47	29.170	0.617	13.8	0.7722	0.0000	SURCHARGED
60 minute summer	153	47	29.163	1.031	19.6	3.6358	0.0000	SURCHARGED
15 minute summer	193	10	32.646	0.118	38.2	1.2403	0.0000	OK
15 minute summer	194	11	32.299	0.111	58.2	0.6569	0.0000	OK
15 minute summer	195	12	30.989	0.105	63.1	0.2006	0.0000	OK
1440 minute winter	285	1410	28.165	1.115	9.0	204.1276	0.0000	SURCHARGED
1440 minute winter	196	1410	28.165	1.145	9.1	1.7332	0.0000	SURCHARGED
15 minute summer	141	10	31.041	0.041	5.8	0.0601	0.0000	OK
15 minute summer	142	10	30.496	0.096	34.0	0.2414	0.0000	OK
15 minute summer	143	11	29.835	0.185	38.8	0.2461	0.0000	OK
15 minute summer	144	11	29.756	0.156	42.7	0.2042	0.0000	OK
15 minute summer	145	11	28.917	0.117	51.4	0.1706	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	57	13.009	63	10.6	0.566	0.084	2.3156	
15 minute summer	58	16.000	59	6.7	0.653	0.107	0.4843	
15 minute summer	59	16.001	61	30.8	1.827	0.323	0.8844	
15 minute summer	61	16.002	63	41.1	2.278	0.393	0.1526	
960 minute summer	62	17.000	63	-11.9	-0.254	-0.095	1.0472	
960 minute summer	63	13.010	64	4.6	0.468	0.026	0.0895	
15 minute summer	150	46.000_1	151	8.2	1.224	0.111	0.2900	
15 minute summer	151	46.001_1	152	20.3	1.235	0.301	0.2033	
15 minute summer	152	46.002_1	153	23.9	1.439	0.356	0.1166	
60 minute summer	146	47.000_1	148	-24.1	-0.751	-0.658	0.4046	
60 minute summer	148	47.001	149	-13.0	0.695	-0.356	0.7640	
15 minute summer	286	48.000_1	147	0.0	0.000	0.000	0.0277	
15 minute summer	147	48.001	149	2.8	0.873	0.037	0.0266	
60 minute summer	149	47.002	153	-9.3	0.814	-0.175	0.7420	
60 minute summer	153	46.003	155	8.6	0.668	0.038	0.0930	
15 minute summer	193	55.000_1	194	37.7	0.494	0.088	2.9331	
15 minute summer	194	55.001	195	56.5	0.828	0.078	3.5243	
15 minute summer	195	55.002	196	62.1	0.952	0.069	0.5690	
1440 minute winter	285	56.000	196	-9.0	-0.226	-0.029	1.5872	
1440 minute winter	196	55.003	198	-4.5	0.130	-0.033	0.7792	
15 minute summer	141	57.000	142	5.7	1.179	0.070	0.0710	
15 minute summer	142	57.001	143	33.8	1.325	0.385	0.6742	
15 minute summer	143	57.002	144	38.0	1.188	0.892	0.2377	
15 minute summer	144	57.003	145	42.9	1.521	0.757	0.6819	
15 minute summer	145	57.004	197	51.5	1.754	0.440	0.2249	

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	197	11	28.629	0.208	51.5	0.2350	0.0000	OK
1440 minute winter	198	1410	28.165	1.165	4.7	2.0908	0.0000	SURCHARGED
1440 minute winter	199	1410	28.165	1.181	4.3	2.3250	0.0000	SURCHARGED
1440 minute winter	200	1410	28.165	1.300	4.4	3.5393	0.0000	SURCHARGED
1440 minute winter	201	1380	28.123	1.365	4.7	2.8584	0.0000	SURCHARGED
15 minute summer	202	10	28.476	0.076	17.1	0.1462	0.0000	OK
1440 minute winter	203	1380	28.123	1.440	5.4	3.0571	0.0000	SURCHARGED
1440 minute winter	204	1380	28.123	1.559	5.4	3.4719	0.0000	SURCHARGED
15 minute summer	205	10	29.504	0.060	10.2	0.1046	0.0000	OK
15 minute summer	206	11	28.978	0.104	15.4	0.1517	0.0000	OK
15 minute summer	207	11	28.914	0.134	26.2	0.2794	0.0000	OK
15 minute summer	208	11	28.591	0.102	36.1	0.2082	0.0000	OK
15 minute summer	209	11	28.163	0.182	43.1	0.2814	0.0000	OK
1440 minute winter	210	1380	28.123	0.245	3.2	0.3006	0.0000	SURCHARGED
1440 minute winter	211	1380	28.123	1.754	7.6	3.4010	0.0000	SURCHARGED
1440 minute winter	212	1380	28.123	1.789	7.9	203.2318	0.0000	SURCHARGED
1440 minute winter	212_OUT	1380	26.237	0.037	2.2	0.0000	0.0000	OK
15 minute summer	231	10	28.086	0.080	10.8	0.1433	0.0000	OK
15 minute summer	232	11	28.030	0.113	20.7	0.1879	0.0000	OK
15 minute summer	233	11	27.908	0.164	27.9	0.2401	0.0000	OK
15 minute summer	234	11	27.856	0.172	37.6	0.2662	0.0000	OK
15 minute summer	235	11	27.624	0.109	44.2	0.1652	0.0000	OK
15 minute summer	236	10	28.202	0.052	11.4	0.0945	0.0000	OK
15 minute summer	237	11	26.179	0.179	73.0	0.3268	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	197	57.005	198	50.8	1.432	0.978	0.6535	
1440 minute winter	198	55.004	199	3.9	0.218	0.037	1.0439	
1440 minute winter	199	55.005	200	4.1	0.109	0.038	7.7286	
1440 minute winter	200	55.006	201	4.2	0.279	0.039	2.0854	
1440 minute winter	201	55.007	203	4.3	0.195	0.028	6.3538	
15 minute summer	202	58.000	203	16.9	1.479	0.229	0.2684	
1440 minute winter	203	55.008	204	4.7	0.192	0.030	10.0463	
1440 minute winter	204	55.009	211	4.4	0.218	0.029	10.1305	
15 minute summer	205	59.000	206	10.0	0.788	0.156	0.4850	
15 minute summer	206	59.001	207	15.2	0.713	0.415	0.4001	
15 minute summer	207	59.002	208	26.3	1.246	0.623	0.9263	
15 minute summer	208	59.003	209	36.1	1.373	0.429	0.5073	
15 minute summer	209	59.004	210	42.9	1.278	0.824	0.3450	
1440 minute winter	210	59.005	211	3.2	0.724	0.062	0.8586	
1440 minute winter	211	55.010	212	7.5	0.224	0.036	3.7011	
1440 minute winter	212	55.011	212_OUT	2.1	0.279	0.144	0.1840	182.2
15 minute summer	231	64.000	232	10.7	0.657	0.268	0.2453	
15 minute summer	232	64.001	233	20.3	0.807	0.510	0.7451	
15 minute summer	233	64.002	234	27.8	0.874	0.698	0.3229	
15 minute summer	234	64.003	235	37.7	1.446	0.891	0.6549	
15 minute summer	235	64.004	237	44.2	2.425	0.424	0.3383	
15 minute summer	236	65.000	237	11.2	1.622	0.115	0.2578	
15 minute summer	237	64.005	245	71.9	1.843	0.747	1.6271	

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	239	10	26.054	0.054	7.5	0.0780	0.0000	OK
15 minute summer	240	11	25.796	0.108	11.1	0.1377	0.0000	OK
15 minute summer	241	10	26.384	0.069	7.8	0.1099	0.0000	OK
360 minute winter	242	296	25.796	0.125	3.2	0.1416	0.0000	OK
360 minute winter	243	296	25.796	0.141	3.3	0.1611	0.0000	OK
360 minute winter	244	296	25.796	1.196	15.4	93.3568	0.0000	SURCHARGED
360 minute winter	245	296	25.796	1.296	15.9	2.1765	0.0000	SURCHARGED
360 minute winter	245_OUT	296	23.194	0.024	3.6	0.0000	0.0000	OK
15 minute summer	259	11	27.399	0.099	15.3	0.2014	0.0000	OK
15 minute summer	261	10	28.291	0.076	16.0	0.1934	0.0000	OK
15 minute summer	262	12	27.319	0.295	49.6	0.6724	0.0000	SURCHARGED
30 minute summer	263	21	28.242	0.065	6.7	0.2439	0.0000	OK
15 minute summer	264	11	26.935	0.135	13.6	0.3386	0.0000	OK
1440 minute winter	265	1110	26.698	0.958	5.2	98.3700	0.0000	SURCHARGED
1440 minute winter	266	1110	26.698	1.198	3.9	1.4810	0.0000	SURCHARGED
1440 minute winter	266_OUT	1110	25.020	0.018	1.3	0.0000	0.0000	OK
15 minute summer	267	10	27.781	0.055	12.6	0.1037	0.0000	OK
15 minute summer	268	10	27.184	0.102	17.2	0.1420	0.0000	OK
15 minute summer	270	10	27.080	0.140	35.1	0.2973	0.0000	OK
15 minute summer	271	11	26.782	0.146	36.4	0.1800	0.0000	OK
600 minute winter	272	555	25.030	1.030	4.3	46.8214	0.0000	SURCHARGED
600 minute winter	273	555	25.030	1.130	4.9	1.3518	0.0000	SURCHARGED
600 minute winter	273_OUT	555	21.408	0.010	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	239	66.000	240	7.4	0.594	0.127	0.3234	
15 minute summer	240	66.001	242	10.9	0.563	0.268	0.0532	
15 minute summer	241	67.000	242	7.6	0.764	0.191	0.1898	
360 minute winter	242	66.002	243	3.2	0.686	0.079	0.0650	
360 minute winter	243	66.003	244	3.3	0.884	0.047	0.3894	
360 minute winter	244	66.004	245	-12.1	-0.304	-0.278	0.5653	
360 minute winter	245	64.006	245_OUT	3.6	1.574	0.024	0.0361	134.7
15 minute summer	259	73.000	262	14.8	0.541	0.405	1.5625	
15 minute summer	261	74.000	262	15.6	1.338	0.241	0.5416	
15 minute summer	262	73.001	265	43.9	1.133	1.200	1.9657	
30 minute summer	263	75.000	264	3.8	0.226	0.012	1.3164	
15 minute summer	264	75.001	265	13.6	0.664	0.698	0.0600	
1440 minute winter	265	73.002	266	3.8	0.472	0.035	0.2972	
1440 minute winter	266	73.003	266_OUT	1.3	0.900	0.013	0.0181	116.3
15 minute summer	267	76.000	268	12.5	1.023	0.131	0.2405	
15 minute summer	268	76.001	270	16.9	0.779	0.422	0.5173	
15 minute summer	270	76.002	271	34.7	1.307	0.667	0.8075	
15 minute summer	271	76.003	273	36.6	1.446	0.629	0.2364	
600 minute winter	272	77.000	273	-4.0	-0.102	-0.038	0.0954	
600 minute winter	273	76.004	273_OUT	0.9	1.474	0.004	0.0069	44.1

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	36.713	0.085	20.7	0.1653	0.0000	OK
15 minute summer	2	12	36.160	0.231	60.8	0.6285	0.0000	SURCHARGED
15 minute summer	3	11	35.657	0.774	84.3	1.7270	0.0000	SURCHARGED
15 minute summer	4	11	34.570	0.253	109.9	0.6554	0.0000	OK
15 minute summer	5	11	35.430	0.107	13.9	0.4611	0.0000	OK
30 minute summer	6	20	35.279	0.093	13.6	0.1646	0.0000	OK
30 minute summer	7	21	35.267	0.132	22.8	0.5385	0.0000	OK
30 minute summer	8	20	34.138	0.338	23.0	0.6664	0.0000	SURCHARGED
15 minute summer	9	11	34.497	0.147	31.7	0.3251	0.0000	OK
15 minute summer	10	12	34.047	0.454	178.2	1.0055	0.0000	SURCHARGED
30 minute summer	11	19	35.099	0.087	16.5	0.4315	0.0000	OK
720 minute winter	12	660	33.895	1.045	10.4	114.8328	0.0000	SURCHARGED
720 minute winter	13	660	33.895	1.095	23.8	1.8498	0.0000	SURCHARGED
720 minute winter	14	660	33.895	1.181	15.0	1.7469	0.0000	SURCHARGED
720 minute winter	15	660	33.895	1.395	15.5	161.7495	0.0000	SURCHARGED
15 minute summer	16	10	38.231	0.144	59.5	0.4840	0.0000	OK
15 minute summer	17	11	36.915	0.214	111.7	0.5956	0.0000	OK
15 minute summer	18	12	36.565	0.626	133.0	1.2161	0.0000	SURCHARGED
15 minute summer	19	12	36.609	0.493	20.2	0.9522	0.0000	SURCHARGED
15 minute summer	20	12	36.541	1.034	54.6	2.1664	0.0000	SURCHARGED
15 minute summer	21	12	36.426	1.425	205.0	3.6577	0.0000	SURCHARGED
15 minute summer	22	10	35.167	0.168	35.4	0.4248	0.0000	OK
15 minute summer	23	10	36.041	0.079	22.3	0.1595	0.0000	OK
15 minute summer	24	11	34.887	0.264	92.2	0.6369	0.0000	OK
15 minute summer	25	11	34.467	0.415	323.3	1.2039	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	20.5	0.970	0.304	1.0854	
15 minute summer	2	1.001	3	55.6	1.473	0.754	2.0793	
15 minute summer	3	1.002	4	73.3	1.844	1.411	1.9275	
15 minute summer	4	1.003	10	108.4	1.738	0.976	3.9621	
15 minute summer	5	2.000	6	14.8	0.281	0.056	2.2380	
30 minute summer	6	2.001	7	11.5	0.155	0.044	1.1621	
30 minute summer	7	2.002	8	19.5	0.321	0.077	2.1178	
30 minute summer	8	2.003	10	24.5	0.691	1.262	0.2255	
15 minute summer	9	3.000	10	30.9	1.151	0.732	1.2254	
15 minute summer	10	1.004	13	172.6	1.589	1.160	6.4156	
30 minute summer	11	4.000	12	13.8	0.402	0.032	2.0168	
720 minute winter	12	4.001	13	-8.7	-0.209	-0.127	0.6836	
720 minute winter	13	1.005	14	14.8	0.738	0.074	0.9490	
720 minute winter	14	1.006	15	14.9	0.666	0.105	0.9554	
720 minute winter	15	1.007	28	4.7	0.603	0.060	0.0955	
15 minute summer	16	5.000	17	58.2	2.216	0.705	1.3776	
15 minute summer	17	5.001	18	110.5	1.794	0.769	2.8414	
15 minute summer	18	5.002	21	129.6	2.040	0.902	0.5434	
15 minute summer	19	6.000	20	23.8	1.146	0.459	2.1242	
15 minute summer	20	6.001	21	72.2	1.071	0.650	3.5598	
15 minute summer	21	5.003	25	195.4	2.776	1.512	3.7783	
15 minute summer	22	7.000	24	34.9	1.080	0.878	1.7009	
15 minute summer	23	8.000	24	22.1	1.646	0.268	0.8614	
15 minute summer	24	7.001	25	87.4	1.416	1.005	3.4790	
15 minute summer	25	5.004	26	322.9	2.140	1.465	1.5750	

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	26	11	34.309	0.279	340.0	0.6107	0.0000	OK
15 minute summer	27	11	33.561	0.306	358.0	0.6874	0.0000	OK
15 minute summer	28	12	32.895	0.681	356.8	1.2516	0.0000	SURCHARGED
15 minute summer	29	10	33.695	0.045	6.1	0.0596	0.0000	OK
15 minute summer	30	10	33.429	0.102	27.6	0.1820	0.0000	OK
15 minute summer	31	12	32.774	0.608	400.5	1.4013	0.0000	SURCHARGED
15 minute summer	32	12	32.487	0.470	406.0	0.8829	0.0000	OK
15 minute summer	33	12	32.253	0.359	412.6	0.6908	0.0000	OK
15 minute summer	34	11	34.745	0.047	8.1	0.1534	0.0000	OK
15 minute summer	35	12	33.564	0.066	15.1	0.1926	0.0000	OK
15 minute summer	36	12	31.842	0.142	13.8	0.2504	0.0000	OK
15 minute summer	37	10	32.251	0.099	24.4	0.2088	0.0000	OK
15 minute summer	38	10	31.809	0.109	24.7	0.1257	0.0000	OK
15 minute summer	39	12	31.794	0.594	457.6	1.2766	0.0000	SURCHARGED
15 minute summer	45	10	36.741	0.041	6.9	0.0557	0.0000	OK
15 minute summer	46	12	36.153	0.273	52.3	0.6918	0.0000	SURCHARGED
15 minute summer	48	11	35.751	0.685	19.5	1.3038	0.0000	SURCHARGED
15 minute summer	49	12	35.697	0.880	106.0	1.9603	0.0000	SURCHARGED
960 minute winter	50	780	35.127	0.542	10.5	0.8878	0.0000	SURCHARGED
960 minute winter	51	780	35.127	0.576	11.4	0.8219	0.0000	SURCHARGED
960 minute winter	52	780	35.127	1.127	11.7	164.1881	0.0000	SURCHARGED
15 minute summer	53	10	33.995	0.060	13.0	0.0870	0.0000	OK
15 minute summer	54	10	34.866	0.067	22.7	0.1356	0.0000	OK
1440 minute summer	55	1200	33.057	0.177	8.2	0.3110	0.0000	OK
1440 minute summer	56	1200	33.057	0.909	11.1	2.3124	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	26	5.005	27	339.2	2.744	0.494	4.7953	
15 minute summer	27	5.006	28	353.6	2.988	0.515	2.9049	
15 minute summer	28	1.008	31	357.0	1.653	1.044	2.0530	
15 minute summer	29	9.000	30	6.0	0.533	0.090	0.2252	
15 minute summer	30	9.001	31	27.1	1.602	0.391	0.4142	
15 minute summer	31	1.009	32	402.3	1.864	1.176	6.2591	
15 minute summer	32	1.010	33	408.2	2.236	1.032	3.3199	
15 minute summer	33	1.011	39	414.4	2.503	0.661	6.6637	
15 minute summer	34	10.000	35	7.8	0.381	0.011	1.0054	
15 minute summer	35	10.001	36	13.8	0.532	0.021	0.7176	
15 minute summer	36	10.002	39	13.3	0.596	0.629	0.2638	
15 minute summer	37	11.000	38	24.2	1.377	0.392	0.5816	
15 minute summer	38	11.001	39	25.2	1.266	0.446	0.4844	
15 minute summer	39	1.012	40	457.6	2.125	0.944	1.4533	
15 minute summer	45	13.000	46	6.8	0.389	0.072	0.5413	
15 minute summer	46	13.001	49	51.0	1.418	0.980	2.4573	
15 minute summer	48	14.000	49	18.0	0.483	0.452	1.6785	
15 minute summer	49	13.002	50	90.2	2.268	1.736	0.6256	
960 minute winter	50	13.003	51	10.5	0.761	0.094	0.2383	
960 minute winter	51	13.004	52	11.4	0.768	0.145	1.5218	
960 minute winter	52	13.005	53	2.3	0.765	0.015	0.0104	
15 minute summer	53	13.006	55	12.9	1.322	0.082	0.1466	
15 minute summer	54	15.000	55	22.5	2.032	0.193	0.4158	
1440 minute summer	55	13.007	56	8.2	0.933	0.066	2.9885	
1440 minute summer	56	13.008	57	10.5	0.560	0.083	3.4369	

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	57	1200	33.057	1.034	11.9	1.8965	0.0000	SURCHARGED
15 minute summer	58	10	35.711	0.061	10.3	0.0887	0.0000	OK
15 minute summer	59	10	35.093	0.111	47.7	0.2605	0.0000	OK
15 minute summer	61	11	33.386	0.148	63.0	0.2668	0.0000	OK
1440 minute summer	62	1200	33.056	1.256	15.1	255.6764	0.0000	SURCHARGED
1440 minute summer	63	1200	33.056	1.266	18.6	2.4328	0.0000	SURCHARGED
15 minute summer	150	10	30.863	0.063	12.8	0.0996	0.0000	OK
120 minute summer	151	86	29.576	0.276	15.7	0.4475	0.0000	SURCHARGED
120 minute summer	152	86	29.575	0.482	18.8	0.6211	0.0000	SURCHARGED
120 minute summer	146	86	29.577	0.877	23.6	23.2419	0.0000	SURCHARGED
120 minute summer	148	86	29.577	0.928	23.4	1.6561	0.0000	SURCHARGED
15 minute summer	286	1	29.700	0.000	0.0	0.0000	0.0000	OK
120 minute summer	147	86	29.576	0.218	2.1	0.2792	0.0000	OK
120 minute summer	149	86	29.576	1.023	12.2	1.2798	0.0000	SURCHARGED
120 minute summer	153	86	29.575	1.443	19.5	5.0854	0.0000	SURCHARGED
15 minute summer	193	10	32.667	0.139	57.9	1.4633	0.0000	OK
15 minute summer	194	11	32.320	0.132	88.5	0.7808	0.0000	OK
15 minute summer	195	11	31.009	0.125	97.2	0.2385	0.0000	OK
1440 minute winter	285	1410	28.869	1.819	13.7	348.4637	0.0000	SURCHARGED
1440 minute winter	196	1410	28.869	1.849	13.8	2.7999	0.0000	SURCHARGED
15 minute summer	141	10	31.051	0.051	8.9	0.0748	0.0000	OK
15 minute summer	142	11	30.529	0.129	51.8	0.3224	0.0000	OK
15 minute summer	143	11	30.063	0.413	58.2	0.5501	0.0000	SURCHARGED
15 minute summer	144	11	29.920	0.320	63.1	0.4191	0.0000	SURCHARGED
15 minute summer	145	11	29.151	0.351	75.5	0.5098	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	57	13.009	63	11.8	0.530	0.093	2.3156	
15 minute summer	58	16.000	59	10.1	0.727	0.163	0.6577	
15 minute summer	59	16.001	61	46.9	1.986	0.492	1.2321	
15 minute summer	61	16.002	63	62.4	2.480	0.598	0.2127	
1440 minute summer	62	17.000	63	-14.2	-0.271	-0.114	1.0472	
1440 minute summer	63	13.010	64	4.6	0.459	0.026	0.0886	
15 minute summer	150	46.000_1	151	12.5	1.379	0.169	0.3939	
120 minute summer	151	46.001_1	152	15.8	1.143	0.235	0.4928	
120 minute summer	152	46.002_1	153	17.9	1.310	0.266	0.2784	
120 minute summer	146	47.000_1	148	-22.2	-0.558	-0.607	0.4046	
120 minute summer	148	47.001	149	-11.1	0.634	-0.304	0.7640	
15 minute summer	286	48.000_1	147	0.0	0.000	0.000	0.0379	
120 minute summer	147	48.001	149	2.1	0.806	0.028	0.3331	
120 minute summer	149	47.002	153	7.7	0.790	0.145	0.7420	
120 minute summer	153	46.003	155	8.6	0.668	0.038	0.0930	
15 minute summer	193	55.000_1	194	57.0	0.549	0.133	4.0014	
15 minute summer	194	55.001	195	87.2	0.917	0.120	4.9057	
15 minute summer	195	55.002	196	94.6	1.056	0.105	0.7815	
1440 minute winter	285	56.000	196	-13.7	-0.225	-0.044	1.5872	
1440 minute winter	196	55.003	198	-7.0	0.138	-0.050	0.7792	
15 minute summer	141	57.000	142	8.8	1.329	0.107	0.0964	
15 minute summer	142	57.001	143	50.7	1.432	0.577	0.8364	
15 minute summer	143	57.002	144	56.3	1.417	1.321	0.2941	
15 minute summer	144	57.003	145	62.6	1.596	1.105	0.9363	
15 minute summer	145	57.004	197	74.1	1.863	0.634	0.3017	

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	197	12	28.905	0.484	74.1	0.5477	0.0000	SURCHARGED
1440 minute winter	198	1410	28.869	1.869	7.1	3.3555	0.0000	SURCHARGED
1440 minute winter	199	1410	28.869	1.885	4.0	3.7123	0.0000	SURCHARGED
1440 minute winter	200	1410	28.869	2.004	4.1	5.4578	0.0000	SURCHARGED
1440 minute winter	201	1410	28.824	2.066	4.2	4.3271	0.0000	SURCHARGED
1440 minute winter	202	1410	28.824	0.424	1.6	0.8200	0.0000	SURCHARGED
1440 minute winter	203	1410	28.824	2.141	4.9	4.5462	0.0000	SURCHARGED
1440 minute winter	204	1410	28.824	2.260	5.5	5.0339	0.0000	SURCHARGED
15 minute summer	205	10	29.518	0.074	15.5	0.1299	0.0000	OK
15 minute summer	206	11	29.015	0.141	23.4	0.2055	0.0000	OK
15 minute summer	207	11	28.961	0.181	39.8	0.3763	0.0000	OK
1440 minute winter	208	1410	28.824	0.335	3.6	0.6826	0.0000	SURCHARGED
1440 minute winter	209	1410	28.824	0.843	4.3	1.3022	0.0000	SURCHARGED
1440 minute winter	210	1410	28.824	0.946	4.5	1.1622	0.0000	SURCHARGED
1440 minute winter	211	1410	28.824	2.455	10.6	4.7610	0.0000	SURCHARGED
1440 minute winter	212	1410	28.824	2.490	10.9	298.6701	0.0000	SURCHARGED
1440 minute winter	212_OUT	1410	26.240	0.040	2.5	0.0000	0.0000	OK
15 minute summer	231	12	28.157	0.151	16.4	0.2691	0.0000	OK
15 minute summer	232	12	28.145	0.228	31.6	0.3807	0.0000	SURCHARGED
15 minute summer	233	11	28.055	0.311	38.7	0.4562	0.0000	SURCHARGED
15 minute summer	234	11	27.983	0.299	50.9	0.4629	0.0000	SURCHARGED
30 minute summer	235	20	27.673	0.158	58.9	0.2385	0.0000	OK
15 minute summer	236	10	28.215	0.065	17.3	0.1167	0.0000	OK
30 minute summer	237	20	27.400	1.400	99.7	2.5502	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	197	57.005	198	74.1	1.863	1.425	0.6963	
1440 minute winter	198	55.004	199	3.7	0.215	0.034	1.0439	
1440 minute winter	199	55.005	200	3.8	0.111	0.035	7.7286	
1440 minute winter	200	55.006	201	3.8	0.274	0.036	2.0854	
1440 minute winter	201	55.007	203	3.9	0.196	0.026	6.3538	
1440 minute winter	202	58.000	203	1.6	0.754	0.022	0.9358	
1440 minute winter	203	55.008	204	4.3	0.209	0.028	10.0463	
1440 minute winter	204	55.009	211	5.4	0.241	0.035	10.1305	
15 minute summer	205	59.000	206	15.3	0.856	0.237	0.6912	
15 minute summer	206	59.001	207	23.0	0.757	0.627	0.5667	
15 minute summer	207	59.002	208	39.7	1.293	0.940	1.4148	
1440 minute winter	208	59.003	209	3.6	0.828	0.043	0.7758	
1440 minute winter	209	59.004	210	4.3	0.766	0.083	0.4092	
1440 minute winter	210	59.005	211	4.5	0.776	0.086	0.8586	
1440 minute winter	211	55.010	212	10.3	0.239	0.049	3.7011	
1440 minute winter	212	55.011	212_OUT	2.5	0.293	0.168	0.2044	208.5
15 minute summer	231	64.000	232	16.4	0.701	0.413	0.5126	
15 minute summer	232	64.001	233	28.5	0.854	0.716	1.1653	
15 minute summer	233	64.002	234	37.0	0.930	0.929	0.4040	
15 minute summer	234	64.003	235	50.7	1.535	1.197	0.8656	
30 minute summer	235	64.004	237	56.8	2.483	0.544	0.6440	
15 minute summer	236	65.000	237	17.6	1.771	0.182	0.9113	
30 minute summer	237	64.005	245	85.6	2.152	0.889	1.7552	

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 99.92%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	239	392	26.465	0.465	1.5	0.6726	0.0000	SURCHARGED
480 minute winter	240	392	26.464	0.776	2.3	0.9908	0.0000	SURCHARGED
480 minute winter	241	392	26.464	0.149	1.6	0.2389	0.0000	OK
480 minute winter	242	392	26.464	0.793	3.9	0.9022	0.0000	SURCHARGED
480 minute winter	243	392	26.464	0.809	4.0	0.9277	0.0000	SURCHARGED
480 minute winter	244	392	26.464	1.864	19.2	155.4477	0.0000	SURCHARGED
480 minute winter	245	392	26.464	1.964	19.5	3.3002	0.0000	SURCHARGED
480 minute winter	245_OUT	392	23.196	0.026	4.3	0.0000	0.0000	OK
15 minute summer	259	12	27.753	0.453	23.2	0.9239	0.0000	SURCHARGED
15 minute summer	261	10	28.311	0.096	24.3	0.2442	0.0000	OK
15 minute summer	262	12	27.682	0.658	72.2	1.5021	0.0000	SURCHARGED
30 minute summer	263	21	28.257	0.080	10.2	0.2976	0.0000	OK
1440 minute winter	264	1140	27.192	0.392	1.8	0.9849	0.0000	SURCHARGED
1440 minute winter	265	1140	27.192	1.452	7.4	161.8232	0.0000	SURCHARGED
1440 minute winter	266	1140	27.192	1.692	3.6	2.0910	0.0000	SURCHARGED
1440 minute winter	266_OUT	1140	25.021	0.019	1.5	0.0000	0.0000	OK
15 minute summer	267	10	27.794	0.068	19.1	0.1281	0.0000	OK
15 minute summer	268	10	27.215	0.133	26.1	0.1858	0.0000	OK
15 minute summer	270	11	27.147	0.207	53.1	0.4396	0.0000	OK
15 minute summer	271	11	26.841	0.205	54.8	0.2530	0.0000	OK
960 minute winter	272	765	25.554	1.554	4.4	78.6600	0.0000	SURCHARGED
960 minute winter	273	765	25.554	1.654	5.1	1.9783	0.0000	SURCHARGED
960 minute winter	273_OUT	765	21.409	0.011	1.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	239	66.000	240	1.5	0.413	0.026	0.9915	
480 minute winter	240	66.001	242	2.3	0.404	0.056	0.1090	
480 minute winter	241	67.000	242	1.6	0.490	0.040	0.6440	
480 minute winter	242	66.002	243	3.9	0.743	0.097	0.1063	
480 minute winter	243	66.003	244	4.0	0.913	0.058	0.4703	
480 minute winter	244	66.004	245	-15.2	-0.382	-0.349	0.5653	
480 minute winter	245	64.006	245_OUT	4.3	1.667	0.029	0.0414	183.5
15 minute summer	259	73.000	262	20.1	0.582	0.550	2.1991	
15 minute summer	261	74.000	262	24.3	1.489	0.374	1.1444	
15 minute summer	262	73.001	265	60.1	1.513	1.641	2.0767	
30 minute summer	263	75.000	264	6.3	0.257	0.019	1.8949	
1440 minute winter	264	75.001	265	1.8	0.354	0.093	0.1168	
1440 minute winter	265	73.002	266	3.5	0.482	0.032	0.2972	
1440 minute winter	266	73.003	266_OUT	1.5	0.946	0.015	0.0202	135.8
15 minute summer	267	76.000	268	19.0	1.118	0.199	0.3335	
15 minute summer	268	76.001	270	25.5	0.813	0.639	0.7466	
15 minute summer	270	76.002	271	52.2	1.382	1.004	1.1583	
15 minute summer	271	76.003	273	54.7	1.546	0.940	0.3289	
960 minute winter	272	77.000	273	-4.1	-0.104	-0.039	0.0954	
960 minute winter	273	76.004	273_OUT	1.1	1.546	0.004	0.0078	69.4

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1	20	36.936	0.308	25.5	0.6019	0.0000	SURCHARGED
30 minute summer	2	20	36.874	0.945	75.2	2.5689	0.0000	SURCHARGED
15 minute summer	3	12	36.308	1.425	96.0	3.1807	0.0000	FLOOD RISK
15 minute summer	4	12	35.050	0.733	124.0	1.8970	0.0000	SURCHARGED
15 minute summer	5	10	35.440	0.117	18.0	0.5032	0.0000	OK
30 minute summer	6	20	35.294	0.108	17.8	0.1902	0.0000	OK
30 minute summer	7	20	35.282	0.147	30.6	0.6001	0.0000	OK
30 minute summer	8	20	34.446	0.646	31.1	1.2715	0.0000	SURCHARGED
15 minute summer	9	11	34.531	0.181	41.0	0.4019	0.0000	OK
720 minute winter	10	675	34.280	0.687	28.5	1.5220	0.0000	SURCHARGED
30 minute summer	11	19	35.109	0.097	21.5	0.4824	0.0000	OK
720 minute winter	12	675	34.280	1.430	13.1	157.1192	0.0000	SURCHARGED
720 minute winter	13	675	34.280	1.480	29.9	2.4999	0.0000	SURCHARGED
720 minute winter	14	675	34.280	1.566	18.3	2.3161	0.0000	SURCHARGED
720 minute winter	15	675	34.280	1.780	18.8	212.8427	0.0000	SURCHARGED
15 minute summer	16	12	38.579	0.492	77.0	1.6502	0.0000	SURCHARGED
15 minute summer	17	12	37.898	1.197	142.6	3.3258	0.0000	SURCHARGED
15 minute summer	18	12	37.399	1.460	154.2	2.8347	0.0000	FLOOD RISK
30 minute summer	19	20	37.408	1.292	33.9	2.4953	0.0000	FLOOD RISK
15 minute summer	20	12	37.330	1.823	101.1	3.8202	0.0000	FLOOD RISK
15 minute summer	21	12	37.209	2.208	239.3	5.6667	0.0000	FLOOD RISK
15 minute summer	22	11	35.411	0.412	45.8	1.0440	0.0000	SURCHARGED
15 minute summer	23	10	36.053	0.091	28.9	0.1832	0.0000	OK
15 minute summer	24	12	35.058	0.435	112.2	1.0489	0.0000	SURCHARGED
15 minute summer	25	11	34.525	0.473	387.8	1.3712	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1	1.000	2	25.5	0.970	0.379	1.6684	
30 minute summer	2	1.001	3	57.7	1.517	0.783	2.0793	
15 minute summer	3	1.002	4	79.2	1.992	1.524	1.9536	
15 minute summer	4	1.003	10	118.2	1.730	1.064	4.2622	
15 minute summer	5	2.000	6	19.3	0.298	0.073	2.7403	
30 minute summer	6	2.001	7	14.9	0.160	0.057	1.4571	
30 minute summer	7	2.002	8	26.2	0.348	0.103	2.6155	
30 minute summer	8	2.003	10	32.6	0.820	1.676	0.2255	
15 minute summer	9	3.000	10	39.9	1.192	0.946	1.5639	
720 minute winter	10	1.004	13	28.5	1.012	0.192	6.8626	
30 minute summer	11	4.000	12	18.5	0.434	0.043	2.4971	
720 minute winter	12	4.001	13	-10.8	-0.216	-0.158	0.6836	
720 minute winter	13	1.005	14	18.0	0.727	0.090	0.9490	
720 minute winter	14	1.006	15	18.1	0.634	0.128	0.9554	
720 minute winter	15	1.007	28	5.1	0.620	0.066	0.1021	
15 minute summer	16	5.000	17	73.5	2.259	0.891	2.0864	
15 minute summer	17	5.001	18	126.5	1.848	0.880	3.2201	
15 minute summer	18	5.002	21	140.4	2.028	0.977	0.5434	
30 minute summer	19	6.000	20	21.2	1.110	0.407	2.1242	
15 minute summer	20	6.001	21	57.8	0.956	0.520	3.5598	
15 minute summer	21	5.003	25	233.2	3.311	1.804	3.7783	
15 minute summer	22	7.000	24	40.4	1.095	1.016	2.0321	
15 minute summer	23	8.000	24	28.6	1.654	0.347	1.3120	
15 minute summer	24	7.001	25	106.4	1.523	1.223	3.7554	
15 minute summer	25	5.004	26	388.7	2.240	1.763	1.7892	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	26	11	34.346	0.316	407.9	0.6911	0.0000	OK
30 minute summer	27	21	33.643	0.388	428.4	0.8712	0.0000	OK
30 minute summer	28	21	33.454	1.240	428.4	2.2806	0.0000	SURCHARGED
15 minute summer	29	10	33.701	0.051	7.8	0.0674	0.0000	OK
15 minute summer	30	10	33.447	0.120	35.6	0.2127	0.0000	OK
30 minute summer	31	21	33.309	1.143	477.9	2.6347	0.0000	SURCHARGED
30 minute summer	32	21	32.976	0.959	479.4	1.8023	0.0000	SURCHARGED
30 minute summer	33	21	32.727	0.833	482.7	1.6042	0.0000	SURCHARGED
15 minute summer	34	11	34.751	0.053	10.5	0.1720	0.0000	OK
15 minute summer	35	12	33.571	0.073	19.6	0.2151	0.0000	OK
30 minute summer	36	21	32.391	0.691	18.0	1.2210	0.0000	SURCHARGED
30 minute summer	37	21	32.404	0.252	30.1	0.5290	0.0000	SURCHARGED
30 minute summer	38	21	32.355	0.655	30.9	0.7535	0.0000	SURCHARGED
30 minute summer	39	21	32.329	1.129	507.8	2.4272	0.0000	SURCHARGED
15 minute summer	45	12	36.840	0.140	8.9	0.1915	0.0000	OK
30 minute summer	46	20	36.795	0.915	64.5	2.3174	0.0000	SURCHARGED
15 minute summer	48	12	36.270	1.204	25.2	2.2911	0.0000	FLOOD RISK
15 minute summer	49	12	36.187	1.370	112.0	3.0514	0.0000	SURCHARGED
720 minute winter	50	690	35.438	0.853	16.4	1.3967	0.0000	SURCHARGED
720 minute winter	51	690	35.438	0.887	17.3	1.2653	0.0000	SURCHARGED
720 minute winter	52	690	35.438	1.438	17.5	215.2646	0.0000	SURCHARGED
15 minute summer	53	10	34.003	0.068	16.5	0.0984	0.0000	OK
15 minute summer	54	10	34.875	0.076	29.4	0.1552	0.0000	OK
1440 minute winter	55	1350	33.394	0.514	7.1	0.9040	0.0000	SURCHARGED
1440 minute winter	56	1350	33.394	1.246	9.6	3.1703	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	26	5.005	27	408.7	2.780	0.595	5.7939	
30 minute summer	27	5.006	28	424.4	2.979	0.618	4.7279	
30 minute summer	28	1.008	31	417.1	1.931	1.220	2.0530	
15 minute summer	29	9.000	30	7.7	0.564	0.115	0.2733	
15 minute summer	30	9.001	31	35.5	1.701	0.512	0.6986	
30 minute summer	31	1.009	32	474.1	2.195	1.386	6.4397	
30 minute summer	32	1.010	33	476.3	2.228	1.205	3.9713	
30 minute summer	33	1.011	39	457.4	2.500	0.730	7.7878	
15 minute summer	34	10.000	35	10.1	0.406	0.014	1.2322	
15 minute summer	35	10.001	36	18.0	0.568	0.028	0.8808	
30 minute summer	36	10.002	39	17.8	0.588	0.841	0.3346	
30 minute summer	37	11.000	38	30.2	1.448	0.491	1.2843	
30 minute summer	38	11.001	39	29.9	1.222	0.529	0.6722	
30 minute summer	39	1.012	40	502.7	2.327	1.037	1.5107	
15 minute summer	45	13.000	46	10.9	0.405	0.114	0.8078	
30 minute summer	46	13.001	49	52.2	1.386	1.004	2.4573	
15 minute summer	48	14.000	49	25.0	0.648	0.629	1.6785	
15 minute summer	49	13.002	50	108.8	2.735	2.093	0.6256	
720 minute winter	50	13.003	51	16.0	0.825	0.144	0.2383	
720 minute winter	51	13.004	52	17.1	0.836	0.218	1.5218	
720 minute winter	52	13.005	53	2.6	0.789	0.016	0.0112	
15 minute summer	53	13.006	55	16.3	1.410	0.103	0.1741	
15 minute summer	54	15.000	55	29.2	2.086	0.250	0.5650	
1440 minute winter	55	13.007	56	7.1	0.896	0.057	3.7038	
1440 minute winter	56	13.008	57	9.3	0.562	0.074	3.4369	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	57	1350	33.394	1.371	10.5	2.5150	0.0000	SURCHARGED
15 minute summer	58	10	35.720	0.070	13.3	0.1013	0.0000	OK
15 minute summer	59	10	35.112	0.130	61.7	0.3047	0.0000	OK
15 minute summer	61	11	33.422	0.184	81.5	0.3309	0.0000	OK
1440 minute winter	62	1350	33.393	1.593	12.9	336.1014	0.0000	SURCHARGED
1440 minute winter	63	1350	33.393	1.603	16.0	3.0802	0.0000	SURCHARGED
15 minute summer	150	10	30.873	0.073	16.6	0.1143	0.0000	OK
120 minute summer	151	88	29.930	0.630	20.3	1.0222	0.0000	SURCHARGED
120 minute summer	152	88	29.929	0.836	23.9	1.0768	0.0000	SURCHARGED
120 minute summer	146	90	29.931	1.231	29.9	34.5476	0.0000	SURCHARGED
120 minute summer	148	90	29.931	1.282	30.4	2.2876	0.0000	SURCHARGED
120 minute summer	286	88	29.930	0.230	1.7	0.2597	0.0000	SURCHARGED
120 minute summer	147	88	29.930	0.572	3.7	0.7322	0.0000	SURCHARGED
120 minute summer	149	88	29.930	1.377	17.5	1.7221	0.0000	SURCHARGED
120 minute summer	153	88	29.928	1.796	23.4	6.3318	0.0000	SURCHARGED
15 minute summer	193	10	32.681	0.153	74.9	1.6190	0.0000	OK
15 minute summer	194	11	32.334	0.146	115.0	0.8667	0.0000	OK
15 minute summer	195	11	31.023	0.139	126.5	0.2664	0.0000	OK
1440 minute winter	285	1410	29.354	2.304	16.8	454.5340	0.0000	SURCHARGED
1440 minute winter	196	1410	29.354	2.334	16.9	3.5330	0.0000	SURCHARGED
15 minute summer	141	10	31.059	0.059	11.5	0.0856	0.0000	OK
15 minute summer	142	11	30.774	0.374	67.0	0.9376	0.0000	SURCHARGED
15 minute summer	143	11	30.348	0.698	69.1	0.9306	0.0000	SURCHARGED
15 minute summer	144	11	30.140	0.540	76.9	0.7062	0.0000	SURCHARGED
15 minute summer	145	12	29.516	0.716	92.8	1.0399	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	57	13.009	63	10.4	0.541	0.082	2.3156	
15 minute summer	58	16.000	59	13.1	0.773	0.210	0.7973	
15 minute summer	59	16.001	61	60.7	2.063	0.637	1.5233	
15 minute summer	61	16.002	63	80.8	2.577	0.773	0.2635	
1440 minute winter	62	17.000	63	-12.1	-0.281	-0.097	1.0472	
1440 minute winter	63	13.010	64	4.8	0.474	0.027	0.0882	
15 minute summer	150	46.000_1	151	16.2	1.480	0.220	0.4765	
120 minute summer	151	46.001_1	152	20.0	1.168	0.298	0.4928	
120 minute summer	152	46.002_1	153	21.3	1.294	0.316	0.2784	
120 minute summer	146	47.000_1	148	-28.1	-0.706	-0.767	0.4046	
120 minute summer	148	47.001	149	-14.5	0.626	-0.397	0.7640	
120 minute summer	286	48.000_1	147	-1.7	-0.070	-0.023	0.6791	
120 minute summer	147	48.001	149	2.8	0.842	0.037	0.3348	
120 minute summer	149	47.002	153	-11.7	0.778	-0.220	0.7420	
120 minute summer	153	46.003	155	8.6	0.668	0.038	0.0930	
15 minute summer	193	55.000_1	194	73.6	0.586	0.172	4.8446	
15 minute summer	194	55.001	195	113.6	0.977	0.157	5.9959	
15 minute summer	195	55.002	196	124.0	1.128	0.138	0.9595	
1440 minute winter	285	56.000	196	-16.8	-0.210	-0.054	1.5872	
1440 minute winter	196	55.003	198	-8.6	0.141	-0.062	0.7792	
15 minute summer	141	57.000	142	11.4	1.425	0.138	0.2407	
15 minute summer	142	57.001	143	59.8	1.578	0.681	1.0523	
15 minute summer	143	57.002	144	68.1	1.712	1.597	0.2941	
15 minute summer	144	57.003	145	76.2	1.915	1.344	0.9507	
15 minute summer	145	57.004	197	90.9	2.285	0.778	0.3017	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	197	1410	29.354	0.933	6.4	1.0548	0.0000	SURCHARGED
1440 minute winter	198	1410	29.354	2.354	8.7	4.2246	0.0000	SURCHARGED
1440 minute winter	199	1410	29.354	2.370	3.8	4.6656	0.0000	SURCHARGED
1440 minute winter	200	1410	29.354	2.489	4.0	6.7763	0.0000	SURCHARGED
1440 minute winter	201	1410	29.307	2.549	4.1	5.3374	0.0000	SURCHARGED
1440 minute winter	202	1410	29.307	0.907	2.0	1.7521	0.0000	SURCHARGED
1440 minute winter	203	1410	29.307	2.624	4.8	5.5705	0.0000	SURCHARGED
1440 minute winter	204	1410	29.307	2.743	7.0	6.1084	0.0000	SURCHARGED
15 minute summer	205	10	29.529	0.085	20.1	0.1491	0.0000	OK
1440 minute winter	206	1410	29.307	0.433	1.8	0.6320	0.0000	SURCHARGED
1440 minute winter	207	1410	29.307	0.527	3.2	1.0970	0.0000	SURCHARGED
1440 minute winter	208	1410	29.307	0.818	4.4	1.6644	0.0000	FLOOD RISK
1440 minute winter	209	1410	29.307	1.326	5.3	2.0472	0.0000	FLOOD RISK
1440 minute winter	210	1410	29.307	1.429	5.3	1.7547	0.0000	FLOOD RISK
1440 minute winter	211	1410	29.307	2.938	12.8	5.6965	0.0000	SURCHARGED
1440 minute winter	212	1410	29.307	2.973	13.4	369.4753	0.0000	SURCHARGED
1440 minute winter	212_OUT	1410	26.241	0.041	2.8	0.0000	0.0000	OK
30 minute summer	231	20	28.723	0.717	20.2	1.2779	0.0000	SURCHARGED
30 minute summer	232	20	28.710	0.793	34.7	1.3231	0.0000	SURCHARGED
30 minute summer	233	20	28.630	0.886	42.1	1.2982	0.0000	SURCHARGED
30 minute summer	234	20	28.567	0.883	56.6	1.3658	0.0000	SURCHARGED
30 minute summer	235	20	28.322	0.807	67.1	1.2208	0.0000	SURCHARGED
15 minute summer	236	10	28.223	0.073	22.4	0.1316	0.0000	OK
30 minute summer	237	20	28.061	2.061	115.9	3.7534	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	197	57.005	198	6.4	0.878	0.123	0.7053	
1440 minute winter	198	55.004	199	3.5	0.218	0.033	1.0439	
1440 minute winter	199	55.005	200	3.8	0.105	0.036	7.7286	
1440 minute winter	200	55.006	201	3.6	0.273	0.034	2.0854	
1440 minute winter	201	55.007	203	3.7	0.203	0.024	6.3538	
1440 minute winter	202	58.000	203	2.0	0.781	0.027	0.9358	
1440 minute winter	203	55.008	204	4.5	0.219	0.029	10.0463	
1440 minute winter	204	55.009	211	6.8	0.247	0.044	10.1305	
15 minute summer	205	59.000	206	19.9	0.895	0.308	0.9857	
1440 minute winter	206	59.001	207	1.8	0.412	0.049	0.7473	
1440 minute winter	207	59.002	208	3.2	0.696	0.076	1.7444	
1440 minute winter	208	59.003	209	4.4	0.875	0.052	0.7758	
1440 minute winter	209	59.004	210	5.1	0.790	0.098	0.4092	
1440 minute winter	210	59.005	211	5.2	0.803	0.100	0.8586	
1440 minute winter	211	55.010	212	12.7	0.247	0.060	3.7011	
1440 minute winter	212	55.011	212_OUT	2.7	0.301	0.183	0.2163	224.2
30 minute summer	231	64.000	232	17.6	0.706	0.442	0.5990	
30 minute summer	232	64.001	233	27.9	0.844	0.701	1.1653	
30 minute summer	233	64.002	234	37.4	0.941	0.939	0.4040	
30 minute summer	234	64.003	235	54.4	1.434	1.285	1.0080	
30 minute summer	235	64.004	237	60.7	2.440	0.581	0.7372	
15 minute summer	236	65.000	237	22.2	1.753	0.229	0.9502	
30 minute summer	237	64.005	245	93.9	2.362	0.976	1.7552	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	239	448	27.122	1.122	2.0	1.6251	0.0000	SURCHARGED
480 minute winter	240	448	27.122	1.434	3.0	1.8301	0.0000	SURCHARGED
480 minute winter	241	448	27.122	0.807	2.0	1.2900	0.0000	SURCHARGED
480 minute winter	242	448	27.122	1.451	4.4	1.6501	0.0000	SURCHARGED
480 minute winter	243	448	27.122	1.467	4.5	1.6815	0.0000	SURCHARGED
480 minute winter	244	448	27.122	2.522	23.3	209.4013	0.0000	SURCHARGED
480 minute winter	245	448	27.122	2.622	24.2	4.4052	0.0000	SURCHARGED
480 minute winter	245_OUT	448	23.198	0.028	5.0	0.0000	0.0000	OK
15 minute summer	259	12	28.283	0.983	30.0	2.0049	0.0000	SURCHARGED
15 minute summer	261	10	28.325	0.109	31.5	0.2782	0.0000	OK
15 minute summer	262	12	28.169	1.145	93.2	2.6136	0.0000	SURCHARGED
30 minute summer	263	20	28.267	0.090	13.3	0.3368	0.0000	OK
1440 minute summer	264	1170	27.913	1.113	3.4	2.7987	0.0000	FLOOD RISK
1440 minute summer	265	1170	27.913	2.173	13.6	203.5876	0.0000	FLOOD RISK
1440 minute summer	266	1170	27.913	2.413	3.0	2.9827	0.0000	FLOOD RISK
1440 minute summer	266_OUT	1170	25.023	0.021	1.8	0.0000	0.0000	OK
15 minute summer	267	10	27.804	0.078	24.7	0.1465	0.0000	OK
15 minute summer	268	12	27.522	0.440	33.7	0.6141	0.0000	SURCHARGED
15 minute summer	270	11	27.427	0.487	63.2	1.0354	0.0000	SURCHARGED
15 minute summer	271	12	26.934	0.298	63.8	0.3674	0.0000	SURCHARGED
1440 minute winter	272	1110	25.941	1.941	4.2	105.6215	0.0000	SURCHARGED
1440 minute winter	273	1110	25.941	2.041	4.9	2.4405	0.0000	SURCHARGED
1440 minute winter	273_OUT	1110	21.409	0.011	1.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	239	66.000	240	2.0	0.426	0.034	0.9915	
480 minute winter	240	66.001	242	2.6	0.415	0.063	0.1090	
480 minute winter	241	67.000	242	2.0	0.524	0.050	0.7558	
480 minute winter	242	66.002	243	4.4	0.768	0.109	0.1063	
480 minute winter	243	66.003	244	4.5	0.919	0.065	0.4703	
480 minute winter	244	66.004	245	-19.4	-0.489	-0.447	0.5653	
480 minute winter	245	64.006	245_OUT	5.0	1.736	0.033	0.0456	205.1
15 minute summer	259	73.000	262	23.7	0.597	0.649	2.1991	
15 minute summer	261	74.000	262	31.3	1.534	0.483	1.3697	
15 minute summer	262	73.001	265	74.9	1.884	2.046	2.1164	
30 minute summer	263	75.000	264	8.6	0.279	0.027	2.3845	
1440 minute summer	264	75.001	265	3.3	0.429	0.171	0.1168	
1440 minute summer	265	73.002	266	2.9	0.488	0.026	0.2972	
1440 minute summer	266	73.003	266_OUT	1.8	0.993	0.017	0.0227	149.7
15 minute summer	267	76.000	268	24.6	1.162	0.258	0.5014	
15 minute summer	268	76.001	270	30.2	0.803	0.756	0.9499	
15 minute summer	270	76.002	271	60.7	1.525	1.167	1.2091	
15 minute summer	271	76.003	273	63.8	1.606	1.097	0.3628	
1440 minute winter	272	77.000	273	-3.9	-0.097	-0.036	0.0954	
1440 minute winter	273	76.004	273_OUT	1.2	1.588	0.005	0.0083	100.7

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