# Response to Louth County Council LRD Opinion Report

Proposed Large-Scale Residential Development (LRD) at Old Slane Road, Mell/Tullyallen, Drogheda, Co. Louth

August 2025

**Waterman Moylan Consulting Engineers Limited**

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**Client Name:** Lagan Homes
**Document Reference:** 23-067r.013 Response to Louth County Council LRD Opinion Report
**Project Number:** 23-067

## Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015 and BS EN ISO 14001: 2015)

| Issue | Date | Prepared by | Checked by | Approved by |
|---|---|---|---|---|
| 1 | 25 August 2025 | Kevin Muhia & Fernando De Maio | Stephen Dent-Neville | Mark Deignan |

**Comments**

## Disclaimer

This report has been prepared by Waterman Moylan, with all reasonable skill, care and diligence within the terms of the Contract with the Client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the Client.

We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above.

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# 1. Introduction

## 1.1 Context

This report has been prepared by Waterman Moylan as part of the documentation in support of a Large Residential Development (LRD) planning application for a proposed residential development located off the Old Slane Road, east of Drogheda, in Mell/Tullyallen, Drogheda, Co. Louth.

As part of the LRD planning process, a Stage 2 pre-application consultation meeting was held between the Applicant, the design team, and Louth County Council on the 4th of June 2025. Louth County Council (LCC) subsequently prepared a Planning Report on the Recommended Opinion for the LRD, dated the 27th of June 2025. Comments received both at the LRD meeting and as set out in the LRD Opinion have been taken on board in the final design of the development. This report addresses the engineering comments received, and sets out the measures taken to address the issues raised by LCC.

## 1.2 Planning Application Details

| | |
|---|---|
| Local Authority: | Louth County Council |
| Planning Reference: | LRD025 |
| Stage 2 Meeting Date: | 4 June 2025 |
| Applicant: | Lagan Homes |
| Site Location: | Mell/Tullyallen, Drogheda, Co. Louth |

## 1.3 Format of the Report

Sections 2 and 3 of this report address the engineering items included in Louth County Council's LRD Opinion: Section 2 addresses Traffic and Transportation items, and Section 3 addresses Water/Drainage items. For clarity, the items raised by Louth County Council are set out in bold italics, with the Applicant's response provided below each item.

# 2. Response to Traffic & Transportation Items

## 2.1 Item No. 3 (a)

***The prospective applicant is advised to consider and design/implement the development in accordance with the submitted drawings and accompanying Engineering Reports received on the 8th of May 2025.***

**Response:**

Noted. The proposed design has been modified to take on board the Local Authority's comments received in the Stage 2 LRD Opinion report.

## 2.2 Item No. 3 (b)

***The prospective applicant is advised that an integral part of this development is connectivity with regards to pedestrian and cycle permeability along Slane Rd and adjoining lands/ destination of choices to the north and east of this subject development. In this regard the applicant (and associated with previous granted planning application Ref 2460266), is advised to ensure the following:***

**(i)** ***That the footpath linkage along the Slane Rd (as agreed with Louth County Council, Physical Development Department), as per Planning Ref 21/1283 (ABP-311678-21) compliance is implemented in advance of this application (development) commencing.***

**Response:**

Noted. The footpath, associated gullies, and drainage details along the Old Slane Road, required under the Phase 2 grant, planning reference 2460266, have been completed. Public lighting and signage along the Old Slane Road, as permitted under the Phase 2 grant, will be completed prior to commencement of the Phase 3 development.

Please refer to drawing no. OSR-WMC-ZZ-GF-DR-C-SK02, included in Appendix A, which shows the pedestrian connectivity to the east of the site, including the extent of new footway being constructed by the Applicant.

***(ii)*** ***The provision of a continuous footpath/ cycle path along the northern boundary of the site (i.e. R168 south side only) towards the Hill of Rath Roundabout to tie in with a future Active Travel Scheme at this roundabout. The cost of this is to be borne by the applicant. This is required to support the retrospective provision of walking and cycling infrastructure in existing settlements, where feasible, to achieve growth in sustainable mobility and strengthen and improve the walking and cycling. The provision of the footpath(s) and cycle path(s) shall comply with the widths outlined in section 2.6 of "The Cycle Design Manual; footpath width 1.8m, cycle path width 3m (2-way) and buffer zone of 1m i.e. 5.8m. The new/ revised drawing(s) shall also clearly outline the provision of the correct tactile arrangement at all transitions and junctions.***

**Response:**

To support the retrospective provision of walking and cycling infrastructure in existing settlements, Phase 2 of the development (planning reference 2460266) includes a sterile section of land on the boundary adjacent to the R168, to accommodate future provision of a footpath and cycle path. This sterile section of land achieves or exceeds the 5.8m requirement along the entire site boundary. All buildings, roads, and boundary fences and walls associated with Phase 2 of the development are

set clear of this sterile land for the future provision of cycle and walking infrastructure. Refer to the accompanying drawing no. OSR-WMC-ZZ-GF-DR-C- SK02, included in Appendix A, which shows this sterile section of land.

Furthermore, a new 3m wide shared pedestrian and cycle connection is being provided as part of the permitted Phase 2 development, providing an active travel connection between the subject site and the M1 Retail Park to the east – refer to drawing no. OSR-WMC-ZZ-GF-DR-C-SK02 for the extent of new footway being constructed by the Applicant.

Note that provision of a continuous footpath/cycle path along the northern boundary of the site, extending as far as the Hill of Rath Roundabout, is not within the Applicant's remit, as much of this route is in 3rd party lands. However, the permitted 3m wide active travel connection to the M1 Retail Park ensures that pedestrians and cyclists can safely travel east from the development along the desire line, and pedestrian facilities through the retail park ensure pedestrians and cyclists can continue east to the R168 Trinity Street.

***(iii) Explore the provision of pedestrian links with the lands to east of the subject site.***

**Response:**

As noted above, a new pedestrian link is proposed as part of the permitted Phase 2 development, providing a new connection between the site and the M1 Retail Park – refer to drawing no. OSR-WMC-ZZ-GF-DR-C-SK02, included in Appendix A, for the extent of new footway being constructed by the Applicant. From here, there is continued pedestrian connectivity through the M1 Retail Park to Trinity Street to the east.

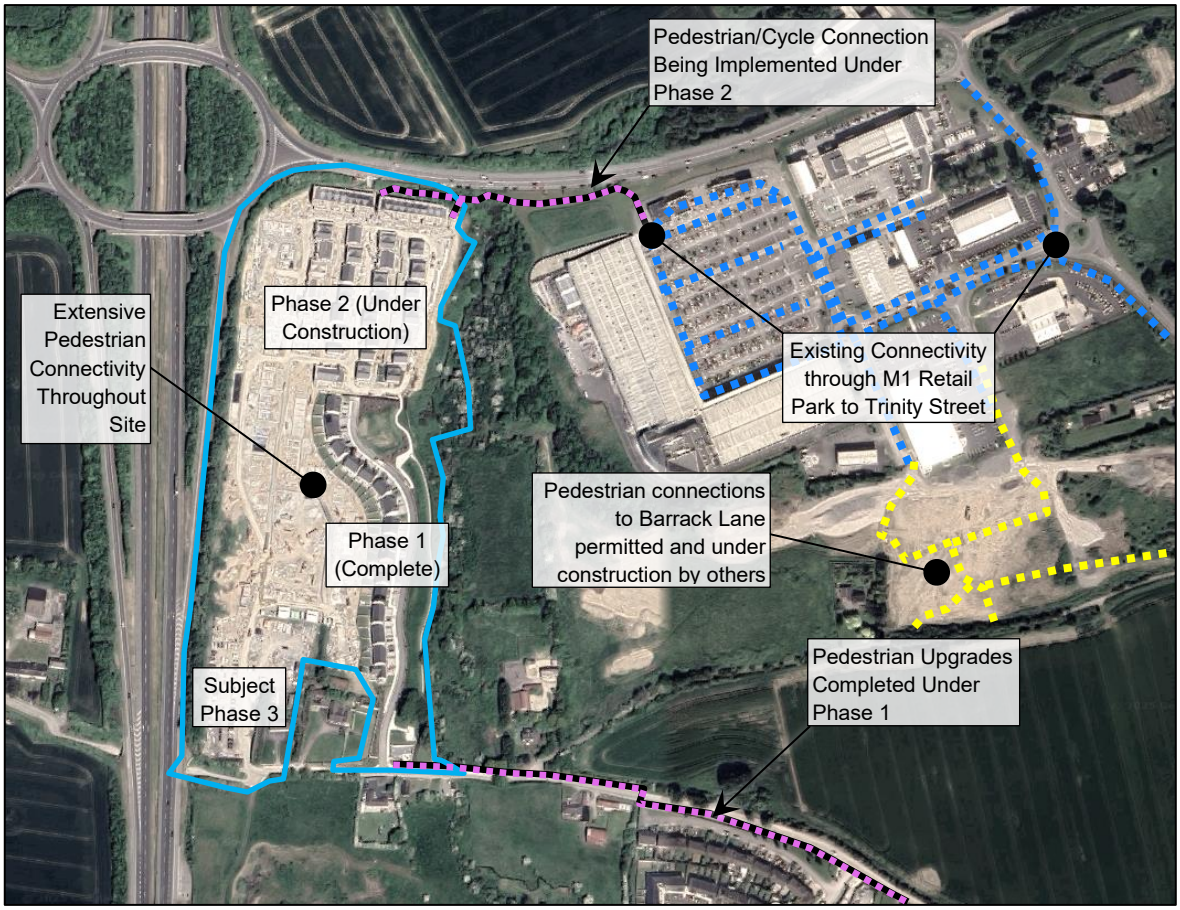


***Figure 1** | Pedestrian Links to the East*

Upgraded pedestrian facilities, including new footpaths and pedestrian crossings, have been provided along Old Slane Road as part of the permitted development, substantially completed under Phase 1. These upgrades ensure that there are pedestrian links with the lands to the east of the subject site from both the north and the south of the site. As noted above, the permitted public lighting and signage will be completed along Old Slane Road prior to commencement of Phase 3.

Extensive north–south pedestrian connectivity is provided throughout the site, with footpaths, tactile paving, and shared surface homezones ensuring that pedestrians can navigate along desire lines throughout the development, including to the new footpath connection to the north along the N51/R168, connecting to the M1 Retail Park, and to the upgraded footpaths to the south of the development along Old Slane Road. This network of footpaths is shown on the accompanying drawing no. OSR-WMC-ZZ-GF-DR-C-SK02, included in Appendix A.

## 2.3 Item No. 3 (c)

***The prospective applicant shall have full regard to the contents of correspondence received from Transport Infrastructure Ireland (TII) dated 9th May 2025 on foot of Planning Compliance 2460266 which requires compliance with the procedural and technical requirements of TII publications and the Roads Acts and highlights that development within the motorway is not permissible.***

**Response:**

Noted. A Vehicle Restraint System (VRS) Assessment has been undertaken by Bruton Consulting Engineers for the proposed Phase 3 development. Bruton Consulting Engineers are TII Approved VRS Independent Chartered Engineers. The assessment is based on the methodology outlined in TII Publication DN-REQ-03079 Design of Road Restraint Systems for Constrained Locations and existing structures, dated May 2024. It is not proposed to introduce any new physical infrastructure on the public road (including PPP road) side of the timber post and rail fence. The assessment is included in full in Appendix B.

The Phase 2 development immediately borders the M1 slip road section to the west, which has a speed limit of 80km/hr. This requires a minimum clear zone width (i.e. the distance an errant vehicle travels off the carriageway before coming to a stop) of 6.1m as outlined in Table 3.1 of the TII Publication DN-GEO-03036 Cross Sections and Headroom, dated May 2023. The Clear Zone on this section comprises of the 2.5m hard shoulder, between 3m and 4m verge before the embankment slope, and a flat 1m section at the fence line which will include the base of the new boundary fencing posts and panels. This equates to a Clear Zone of minimum 6.5m which exceeds the 6.1 m required for a design speed of 80km/hr. As such, the 80km/hr section of the M1 slip road does not require a Vehicle Restraint System. Additionally, for the section of the M1 slip road with a speed limit of 120km/hr, The fence line is 11.8m from the kerb line and the hard strip is 1.2m, giving a total width of 13m, which exceeds the required Clear Zone of 10.0m. As such, this section does not require a Vehicle Restraint System.

Similarly, for the Phase 3 development, a minimum clear zone width of 10.0m is required, as defined in TII Publication DN-GEO-03036 Cross Sections and Headroom, dated May 2023. The fence line is 11.8m from the kerb line and the hard strip is 1.2m, giving a total width of 13m, which exceeds the minimum required Clear Zone of 10.0m. As such, this section does not require a Vehicle Restraint System either.

Please refer to Bruton Consulting Engineers' assessment, included in Appendix B.

## 2.4 Item No. 3 (d)

***The prospective applicant has proposed the provision of a new roundabout at the end of the Old Slane Road, as requested in order to future proof the provision of public transport provision along the Old Slane Road. The applicant shall ensure that the proposed roundabout is designed in accordance with TII publication DN-GEO-03060 "Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions)" to cater for the type and volume of traffic for the Old Slane Rd. If in order to satisfy this requirement, the applicant shall be requested to submit a formal legal agreement together with a map showing the extent of the lands so affected outside the site boundary together with an undertaking from the 3rd party's solicitor that the agreement will be entered as a burden against the title of the land.***

**Response:**

During pre-planning meetings, LCC requested that the proposed development incorporate a roundabout at the entrance, rather than a T-junction as originally proposed, in order to facilitate the possible future provision of a bus route, which would terminate here (since a bus would be unable to continue beneath the M1 underpass due to the restricted head height).

The TII Publication DN-GEO-03060 includes guidance on the geometric design of roundabouts specifically for National Roads. The Old Slane Road, where the roundabout is proposed, is not a National Road. A single lane roundabout for a National Road, as set out in Section 6.6.1 of DN-GEO-03060, has a minimum Inscribed Circle Diameter (ICD) of 28m.

However, Section 4.4.3 of DMURS states that "Large roundabouts are generally not appropriate in urban areas. They require a greater land take and are difficult for pedestrians and cyclists to navigate, particularly where controlled crossings/cycle facilities are not provided, and as such, vehicles have continuous right of way. The use of large roundabouts (i.e. those with radii greater than 7.5m) should be restricted to areas with lower levels of pedestrian activity."

The proposed roundabout on the Old Slane Road will primarily serve residential traffic to the subject development, with low volumes of traffic passing through the underpass beneath the M1. Given the narrow underpass, limited to 1-way traffic, and given that the tunnel has a 2.5m height restriction, there is limited scope for increased traffic demand. The future traffic demand for the proposed roundabout is therefore primarily traffic to the subject development. Traffic modelling carried out as part of the permitted LRD application and based on traffic count survey data taken in 2024 show that in the 2040 scenario with the subject development completed and occupied, the peak-hour has a maximum of 169 vehicles passing beneath the underpass (84 travelling east and 85 travelling west). As such, provision of a large roundabout suitable for National Roads is considered excessive.

On that basis, it is proposed to provide a smaller roundabout than the National Road roundabout described in DN-GEO-03060. The previous TII publication on the Geometric Design of Roundabouts, DN-GEO-03033, notes that roundabouts with an Inscribed Circle Diameter less than 28m should be designed in accordance with the relevant British Standards – the current British Guideline publication is CD 116 "Geometric design of roundabouts". That design standard notes that "Large ICD can lead to excessive vehicle speeds on the circulatory carriageway".

While there is currently no bus route along this portion of the Old Slane Road, the possible future introduction of a bus route would greatly benefit the proposed scheme, and as such the proposed roundabout has been designed to facilitate this. Swept path analysis has been carried out using a 10.6m long 3-axle bus, confirming that the proposed Inscribed Circle Diameter of 16m is sufficient to confortably allow this bus to perform a 180° manoeuvre without reversing. The design is in accordance with the geometric guidelines set out in Section CD 116.

Please refer to the accompanying drawing no. OSR-WMC-PH3-00-DR-C-SK01, included in Appendix A, which shows a comparison of the proposed 16m diameter roundabout and a 28m diameter roundabout in accordance with DN-GEO-03060.

## 2.5 Item No. 3 (e)

***The prospective applicant is advised that a Road Safety Audit Stage 1 & 2 shall be required upon completion of detailed design and prior to construction of any proposed design changes.***

**Response:**

Noted. A Stage 1 (completion of preliminary design) Road Safety Audit has been completed. This is appended to the accompanying Engineering Assessment Report and is discussed further in that report. All of the recommendations have been taken on board, as set out in the feedback form included within the audit report.

A Stage 2 (completion of detailed design) Road Safety Audit will be completed upon completion of detailed design and prior to construction.

## 2.6 Item No. 3 (f)

***The prospective applicant is advised that all residential turning bays shall be in accordance with section 2 of "Recommendations for Site Development Works for Housing Areas" published by Department of the Environment and Local Government. Of particular concern is the vehicle arrangements for vehicles accessing the shared surface area for the units along the western boundary. The applicant shall be requested to submit revised details outline how vehicles can safely turn within the courtyard without the need to reversing out onto the residential roadway.***

**Response:**

The proposed courtyards along the western section of the site are designed for residential parking/access only, and will only be used by cars. Refuse collection is from the adjacent local through road.

A swept path analysis has been carried out to confirm that there is sufficient space for turning movements of a large family car within the courtyards along the western section of the site without the need to reverse onto the residential roadway.

In recent years, it has been encouraged to minimise the area of large blacktop turning heads that are larger than required, in order to minimise the hardstanding area. In this regard, the design seeks a departure from the Recommendations for Site Development Works for Housing Areas, and refer to the accompanying Swept Path Analysis for a Large Car drawing no. OSR-WMC-PH3-00-DR-C-4131. Note that this strategy for the proposed Phase 3 courtyards matches the strategy for those that are permitted and under construction in Phase 2 under planning reference 2460266.

## 2.7 Item No. 3 (g)

***The prospective applicant is advised that Table 7.7 of the "Guidelines for setting and managing speed limits in Ireland", March 2015, indicates 30 km/h as an appropriate speed limit in a housing estate such as this proposed development. The applicant is advised to submit revised details clearly demonstrating adequate traffic calming provision within the development to achieve an 85th percentile speed of 30 km/h. This can be achieved by means of vertical deflections, but ideally by horizontal alignments.***

**Response:**

Speed reducing measures have been introduced in order to achieve the 85th percentile speed of 30km/h in line with Table 7.6 of the 'Guidelines for setting and managing speed limits in Ireland' (2015). This is considered appropriate for narrow / minor local roads and housing estate roads designed in accordance with DMURS.

The proposed road layout includes shared surface homezones, in accordance with Section 4.3.4 of DMURS. Homezones create a shared space that encourages low vehicular speeds. Road widths of generally 5.5m throughout the development ensure that a strong sense of enclosure is achieved, with road widths of 4.8m at shared surfaces in accordance with Section 4.4.1 of DMURS, and as illustrated in DMURS Figure 4.55. Section 4.3.4 of DMURS states that shared surface streets and junctions are particularly effective at calming traffic, and notes that shared carriageways perform well in terms of safety.

Regular junctions along with raised tables at shared surface homezones will encourage reduced driving speeds. While horizontal deflection is the preferred means of traffic calming, a raised table entry treatment into homezones is considered appropriate: this notifies drivers that they are entering a slow zone, and helps to bring the footpath and road carriageway level while allow pedestrians to continue at grade. The proposed shared surface homezones include an embedded kerb line along the carriageway to indicate an area of pedestrian refuge, in accordance with Section 4.4.8 of DMURS. This is particularly important for visually impaired users who may feel less comfortable on shared surfaces, and also require a kerb line for navigation.

Horizontal curvature has been incorporated in the road design. These curves have been designed in accordance with Section 4.4.6 and Table 4.3 of DMURS, with a minimum centre line curvature of 11m radius, suitable for a 20km/hr design speed.

A combination of parallel and perpendicular car parking spaces are provided along the main internal road. As noted in Section 4.4.9 of DMURS, on-street parking can calm traffic by increasing driver caution, visually narrowing the carriageway and reducing forward visibility.

DMURS notes that speed reducing measures should be included on longer straights where there is more than 70m between junctions. There are no straight lengths of road that exceed this limit. Throughout the development, tight corner radii are proposed in accordance with DMURS, in order to reduce traffic speeds which, in turn, creates a safer urban environment for pedestrians and cyclists, with minimum corner radii of 3m. While the main road layout is designed for 30km/hr, the speed reducing bends, raised table entry into homezones, shared surfaces, frequent junctions, and tight corner radii at junctions promote low speeds.

## 2.8 Item No. 3 (h)

***The prospective applicant is advised that roadway widths shall be 5m – 5.5m to be consistent with DMURS including corner radii of 1m – 3m in accordance with section 4.3.3 of DMURS.***

**Response:**

Noted.  Noted. Corner radii throughout the development are 3m, and road widths are 5m-5.5m. Note that homezones have a width of 4.8m in accordance with DMURS Section 4.4.1, which states that the total carriageway width on local streets where a shared surface is provided should not exceed 4.8m.

## 2.9 Item No. 3 (i)

***The prospective applicant is advised of the requirement to provide EV charging points in accordance with Section 13.16.9 of the Louth County Development Plan 2021 – 2027 (as varied).***

**Response:**

Noted. The updated site layout includes EV charging points, in accordance with Section 13.16.9 of the Louth County Development Plan 2021–2027. In communal parking areas, the necessary ducting and wiring to facilitate the installation of electric vehicle charging points shall be provided at a rate of 20%, in accordance with Section 13.8.18 of the County Development Plan.

## 2.10 Item No. 3 (j)

***The prospective applicant is advised to consider the provision of bicycle stands at the site entrance to allow LCC's Bike share scheme operator to allocate same within the development.***

**Response:**

Noted. The updated site layout includes 5 no. public cycle parking spaces at the site entrance, allowing for LCC's bike share scheme operator to allocate same within the development.

# 3. Response to Water/Drainage Items

## 3.1 Item No. 6: Surface Water

***The prospective applicant is advised to reconsider and address any relevant issues in relation to storm water management at the proposed site, such as the need to carry out permeability testing, show how all surface water retained on site as 100 Year Flood Event will be discharged and overflow to the west of the roundabout all the way down to the underpass.***

**Response:**

Noted. The road section from the subject development on approach to the proposed roundabout has been designed with a single camber redirecting the overland flood routing eastwards along the Old Slane Road to the low point on the bridge, where gullies in its parapet facilitate discharge of surface water to the stream which eventually outfalls to the River Boyne. Any overland flood water runoff from the proposed development will drain to the east of the proposed roundabout and will not drain to the existing M1 underpass. Refer to drawing no's. OSR-WMC-ZZ-GF-DR-C-4100 Road Layout and OSR-WMC-ZZ-GF-DR-C-4200 Drainage Layout, and to the accompanying Flood Risk Assessment.

The proposed attenuation has been designed to cater for the 1-in-100-year storm, accounting for a 20% increase in flows due to climate change.

Site Investigations have been carried out at the site by Ground Investigations Ireland, with trial pits and soakaway testing carried out throughout Phase 2.

The soakaway tests carried out close to the subject Phase 3 site, SK02 and SK04, revealed infiltration rates of $5.308 \times 10^{-5}$ m/s and $1.308 \times 10^{-4}$ m/s, respectively. These rates suggest good permeability suitable for SuDS devices and attenuation systems that encourage infiltration into the soil. Note that for the soakaway tests carried out at the north of the Phase 2 lands, further from the subject Phase 3, the water level dropped too slowly to allow calculation of the soil infiltration rate.

The full Site Investigation report is included in Appendix C.

## 3.2 Item No. 7: Uisce Éireann

***The prospective applicant is advised to submit a revised Confirmation of Feasibility (CoF).***

**Response:**

An updated Confirmation of Feasibility (CoF) letter has been issued by Uisce Éireann under reference number CDS25002896, dated the 3rd of July 2025. This updated letter confirms that a water supply connection is feasible subject to upgrades, and that a wastewater drainage connection is feasible without infrastructure upgrade by Uisce Éireann. The letter notes that the Applicant is to engage with Uisce Éireann at Connection Application stage in relation to the sizing of the Existing Wastewater Pumping Station, to cater for additional units and to ensure the storage requirements are met for the additional flows.

The required water supply network upgrades are as follows:

- A Pressure Release Valve (PRV) is to be installed and commissioned along Marlay's Lane.
- Approximately 50m of new 450mm ID watermain and a Flow Control Valve is to be laid.

The Confirmation of Feasibility letter is included in Appendix A of the accompanying Engineering Assessment Report.

## 3.3 Item No. 8: Public Open Space

***The prospective applicant is advised to make reference to the useability/safety of public open spaces within the development in a revised Planning Statement having regard to the attenuation areas /basins proposed in public open space areas.***

**Response:**

Please refer to the response from the Landscape Architect, NMP, regarding the useability and safety of the public open spaces, and refer to the updated Planning Statement which addresses the same.

Note that the attenuation basins are designed as dry detention basins, and will only hold water during extreme rainfall events, as illustrated in the accompanying Engineering Assessment Report (EAR) and the hydraulic modelling report appended to the EAR.

The hydraulic modelling reveals that the attenuation basin located in the open space at the north of the subject development will fill up to depths of 0.178m for the 1-in-1 year event, 0.301m for the 1-in-5-year event, 0.501m for the 1-in-30-year event, and 0.904m of the 1-in-100-year event, including for a 20% increase in rainfall to account for climate change.

The attenuation basin located in the public open space at the south-eastern corner of the subject development will fill up to depths of 0.104m for the 1-in-1-year event, 0.212m for the 1-in-5-year event, 0.377m for the 1-in-30-year event and 0.699m for the 1-in-100-year event, including for a 20% increase in rainfall to account for climate change.

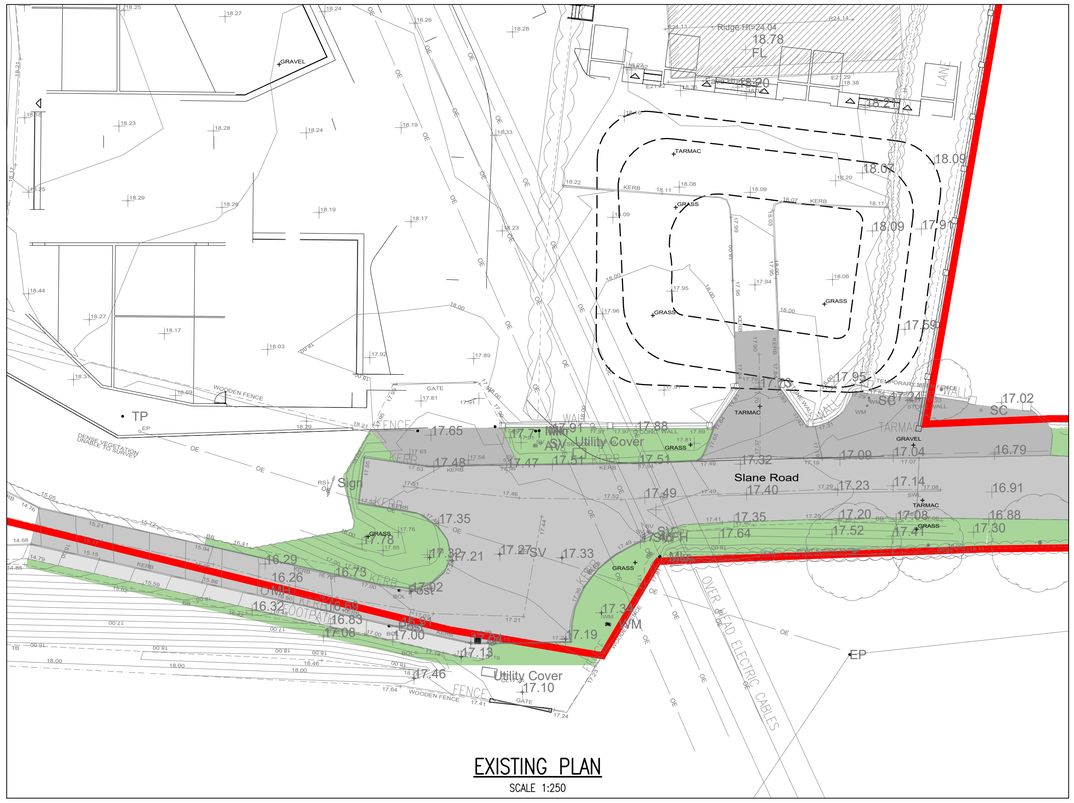
The detention basins will generally be dry, and are designed with maximum side slopes of 1 in 4, ensuring they are usable as public open spaces. They are designed to be free draining, to ensure the spaces become usable again once storm waters have drained following extreme storm events.

Please refer to Appendix B of the accompanying Engineering Assessment Report for the full hydraulic modelling report.

# Appendices

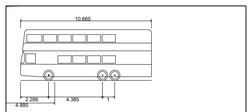
## A. Sketches

- OSR-WMC-PH3-00-DR-C-SK01: Proposed Roundabout Comparison
- OSR-WMC-PH3-00-DR-C-SK02: Off Site Cycle-Pedestrian Connectivity



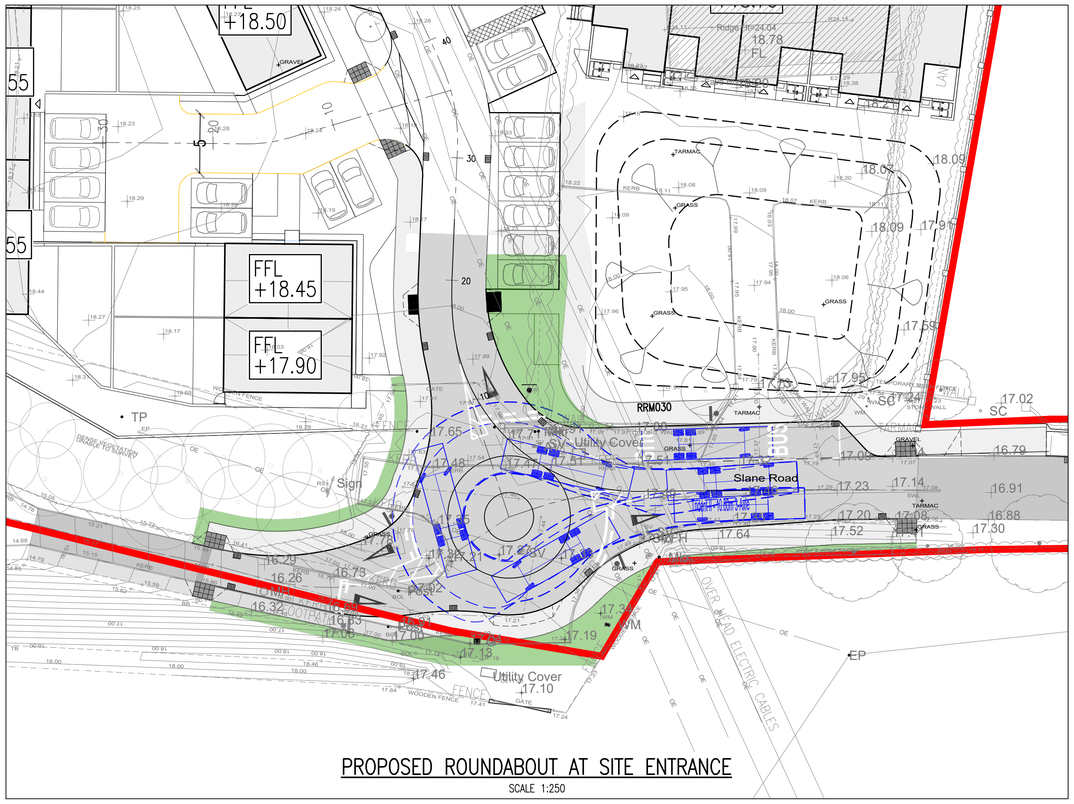

EXISTING PLAN

SCALE 1:250



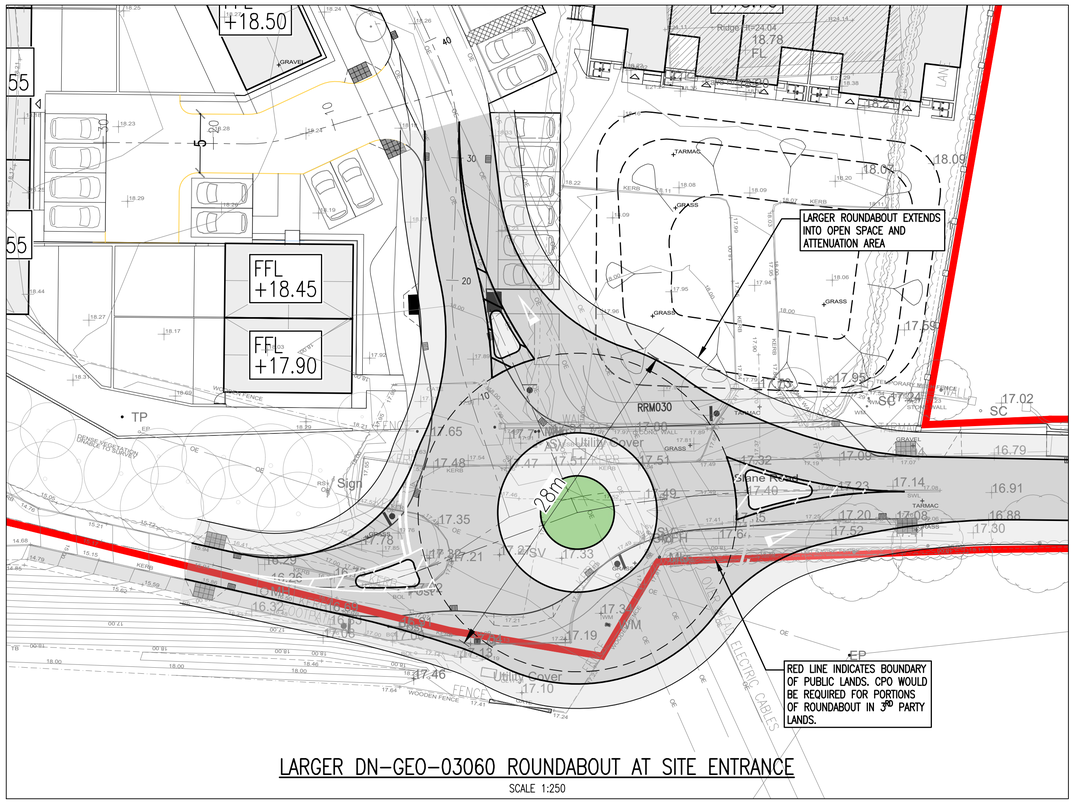
Trident II - 10.60m 3-Axle

| | |
|---|---|
| Overall Length | 10.665m |
| Overall Width | 2.496m |
| Overall Body Height | 4.140m |
| Min Body Ground Clearance | 0.311m |
| Track Width | 2.363m |
| Lock-to-lock time | 4.00s |
| Curb to Curb Turning Radius | 7.725m |




PROPOSED ROUNDABOUT AT SITE ENTRANCE

SCALE 1:250




LARGER DN–GEO–03060 ROUNDABOUT AT SITE ENTRANCE

SCALE 1:250

1:250 0 5m 10m 15m 20m 25m

1:1 0 10 20 30 40 50 60 70 80 90 100

This drawing should not be scaled. Dimensions to be verified on site.
Any discrepancies should be referred to the Engineer prior to work being put in hand.

Block S East Point Business Park Dublin D03 H3F4 Ireland t +353 1 664 8900

NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

| Rev | Date | Description | By | Chk |
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| | | | | |

Amendments

Project

PROPOSED RESIDENTAIL DEVELOPMENT AT OLD SLANE ROAD, DROGHEDA CO.LOUTH

Title

PHASE 3
PROPOSED ROUNDABOUT COMPARISON

Client

LAGAN HOMES TULLYALLEN LTD.

BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

Status

PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| NS | MD | 23-067 |
| Drawn By | Date | Scales @ A1 |
| NS | AUGUST 2025 | 1:500 |

Project - Originator - Volume - Level - Type - Role - Number

OSR-WMC-PH3-00-DR-C-SK01

Revision 00

Drawing Location: N:\Projects\23\23-067 Old Slane Road\Drawings\Waterman Moylan\Civil\Autocad Drawings\Phase 3\OSR-WMC-PH3-00-DR-C-SK01 Proposed Roundabout Comparison.dwg
Date: Aug 28, 2025 - 11:18am

NOTES:

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**LEGEND**

- BOUNDARY OF APPLICANT'S OWNERSHIP
- SUBJECT PHASE 3 DEVELOPMENT AREA BOUNDARY
- SHARED SURFACE HOMEZONE WITHIN DEVELOPMENT SITE (PHASES 1–3)
- FOOTPATHS WITHIN DEVELOPMENT SITE (PHASES 1–3)
- 3m WIDE SHARED CYCLE/PEDESTRIAN CONNECTION TO M1 RETAIL PARK
- OFF–SITE PEDESTRIAN FACILITIES PROVIDED BY APPLICANT ON OLD SLANE ROAD
- EXISTING FOOTPATHS
- PERMITTED FOOTPATHS UNDER CONSTRUCTION BY OTHERS
- STERILE CORRIDOR OF LAND WITH NO DEVELOPMENT PROPOSED TO ALLOW FOR IMPLEMENTATION OF FUTURE ACTIVE TRAVEL ROUTE

5.8m STERILE RESERVATION TO ALLOW FOR FUTURE IMPLEMENTATION OF ACTIVE TRAVEL CORRIDOR BY OTHERS

3m SHARED CYCLE/PEDESTRIAN LINK TO ADJACENT RETAIL PARK TO BE CONSTRUCTED UNDER PHASE 2 WORKS

CONNECTION TO THE M1 RETAIL PARK AS PART OF PHASE 2

FOOTPATHS AND SHARED SURFACE HOMEZONES UNDER CONSTRUCTION AS PART OF PHASE 2

EXISTING PEDESTRIAN CONNECTIVITY THROUGHOUT THE RETAIL PARK AND CONNECTING TO TRINITY STREET

FOOTPATHS AND SHARED SURFACE HOMEZONES UNDER CONSTRUCTION AS PART OF PHASE 2

SUBJECT PHASE 3 SITE

PERMITTED DEVELOPMENT UNDER CONSTRUCTION BY OTHERS INCLUDES 3 NO. PEDESTRIAN LINKS TO BARRACK LANE

COMPLETED FOOTPATHS PROVIDING CONNECTIVITY THROUGH PHASE 1

PRIVATE RESIDENCE

CONTINUOUS FOOTPATHS FROM THE SUBJECT SITE PROVIDE CONNECTIVITY TO TRINITY STREET

EXISTING OFFSITE FOOTPATH

FOOTPATHS AND SHARED SURFACE HOMEZONES PROPOSED AS PART OF PHASE 3

OFFSITE FOOTPATH CONSTRUCTED UNDER PHASE 1 WORKS

OFFSITE FOOTPATH CONSTRUCTED UNDER PHASE 1 WORKS

| Rev | Date | Description | By | Chk |
|---|---|---|---|---|
| | | | | |

Amendments

Project

PROPOSED RESIDENTAIL DEVELOPMENT AT OLD SLANE ROAD, DROGHEDA CO.LOUTH

Title

PHASE 3
OFF SITE CYCLE/PEDESTRIAN CONNECTIVITY

Client

LAGAN HOMES TULLYALLEN LTD.

BLOCK S, EASTPOINT BUSINESS PARK, ALFIE BYRNE ROAD, DUBLIN D03 H3F4 IRELAND. Tel: (01) 664 8900
Email: info@waterman-moylan.ie www.waterman-moylan.ie

Status: PLANNING

| Designed By | Approved | Waterman Ref |
|---|---|---|
| NS | MD | 23-067 |
| Drawn By | Date | Scales @ A1 |
| NS | AUGUST 2025 | 1:2000 |

Project - Originator - Volume - Level - Type - Role - Number: OSR-WMC-PH3-00-DR-C-SK02

Revision: 00

1:2000 0 20m 40m 60m 80m 100m 120m 140m 160m 180m 200m
1:1 0 10 20 30 40 50 60 70 80 90 100

Drawing Location: N:\Projects\23\23-067 Old Slane Road\Drawings\Waterman Moylan\Civil\Autocad Drawings\Phase 3\OSR-WMC-PH3-00-DR-C-SK02 Off Site Cycle-Pedestrian Connectivity.dwg
Date: Aug 26, 2025 - 2:29pm

## B. Bruton Consulting Engineers' Vehicle Restraint System Assessment

Title: **Vehicle Restraint System (VRS) Assessment**

**For;**

**Residential Housing Development, Phase 3 Gortmell, Drogheda, Co. Louth.**

Client: **Lagan Homes.**

Date: **July 2025**

Report reference: **2727R02**

VERSION: **FINAL**


Prepared By:

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# 1.0 Introduction

Phase 3 of the Gortmell Residential scheme in Drogheda is planned. The site is to the south of the Phase 2 to the east of the M1 slip road from junction 10 southbound and north of the Old Slane road which travels under the M1.

Lagan Homes have sough an assessment as to whether a vehicle restraint system (VRS) is required in the verge of the M1 slip road to protect errant vehicles from colliding with the boundary fencing of the proposed scheme or other hazards on the development side of that boundary fencing.

A similar exercise (Report ref 2727R01) was carried out for Phase 2 where it was a condition of planning that a suitable VRS be proposed however the result of that assessment process was that no VRS was required.

This assessment, similar to the phase 2 assessment has been carried out by:

**Norman Bruton**, BE CEng FIEI, Chartered Engineer,

TII Approved VRS Independent Chartered Engineer

(TII registration number 001-C032422)

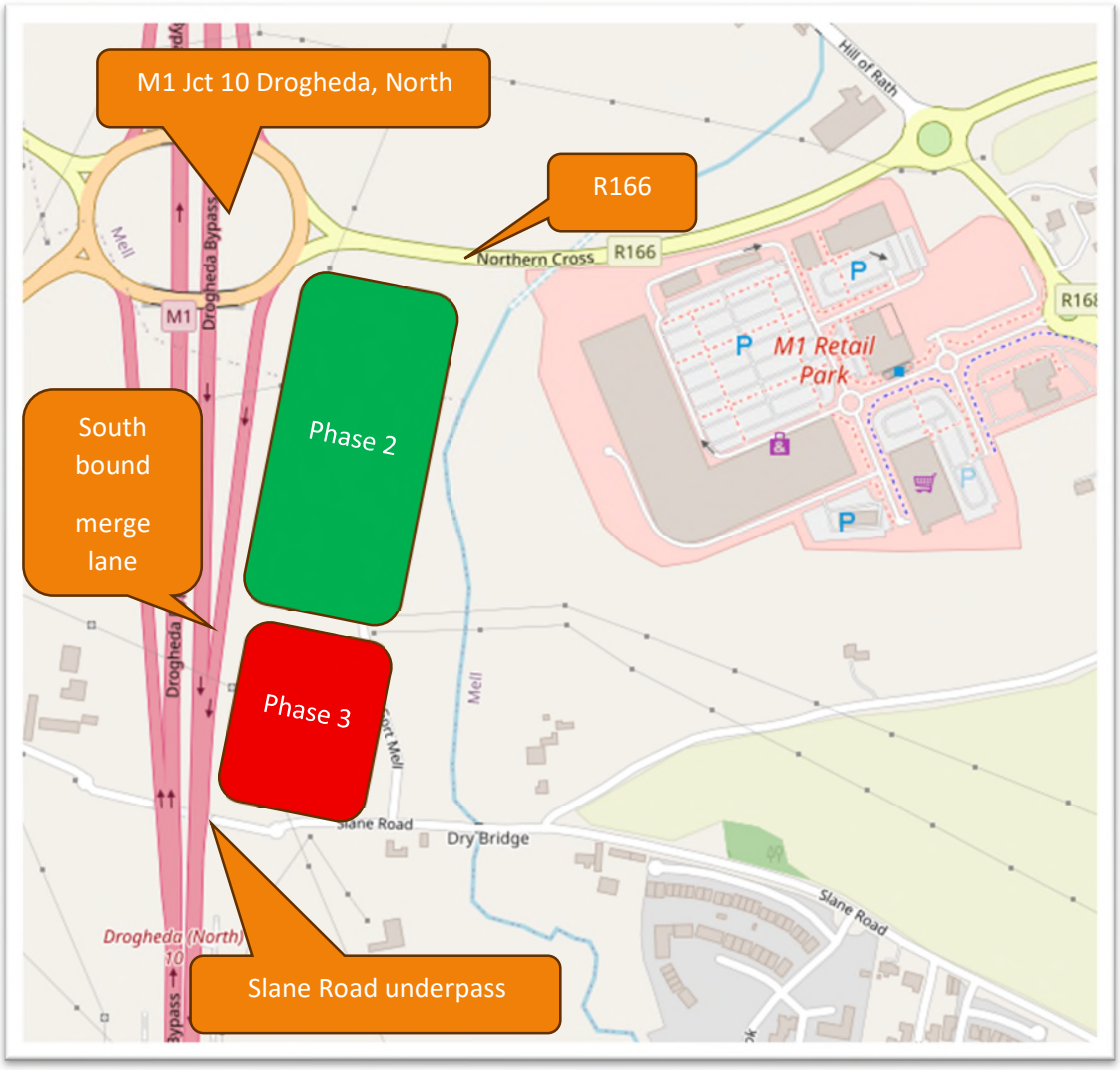
# 2.0 Assessment Methodology

This assessment is based on the methodology outlined in TII Publication DN-REQ-03079 Design of Road Restraint Systems for Constrained Locations and existing structures, Dated May 2024.

The assessment is based on the risk assessment approach described in Chapter 5 (formerly Chapter 8 of DN-REQ-03034). In carrying out the assessment other design standards (referenced throughout this report) are also required to be used in the calculations of Clear Zones (i.e. the distance an errant vehicle travels off the carriageway before coming to a stop).

# 3.0 Site location.

The location of the site is shown below.



# 4.0 Existing Road Layout

## 4.1 M1 Slip Road.

The M1 junction 10 rotary is a two lane rotary and has a speed limit of 80km/hr.

The slip road has a speed limit of 80km/hr until it changes to 120km/hr approximately 125m down the ramp from the roundabout exit. It is a single lane slip road with a 1.2m wide hard strip and a full height kerb. The section of the M1 under assessment for this Phase 3 is entirely within the 120km/hr zone.

There is existing OBB towards the nosing of the slip lane with the mainline in the eastern verge which provides protection to a high lighting mast. The lighting mast has been removed in recent times however the concrete base still exists and is a hazard.

Another section of OBB exists as an approach barrier to the parapet of the Old Slane Road underpass at the nosing/start of the parallel merge lane.

The slip lane changes from being in fill at the rotary end with height difference of 1.3m to an at grade section approximately 110m from the roundabout exit to being in cut up to 1.5m at the southern end of the site.

There is an open channel drain (Ditch) in the verge all along the slip road. It is approximately 1.2m wide and 0.8m deep but varies as it is surrounded on both sides by trees and is not maintained.

The timber post and rail fence is generally parallel to the slip road and set back approximately 12m from the kerb line.

There are relatively mature trees (planted as part of the Motorway Construction contract) in the verge which have girths greater than 315mm.

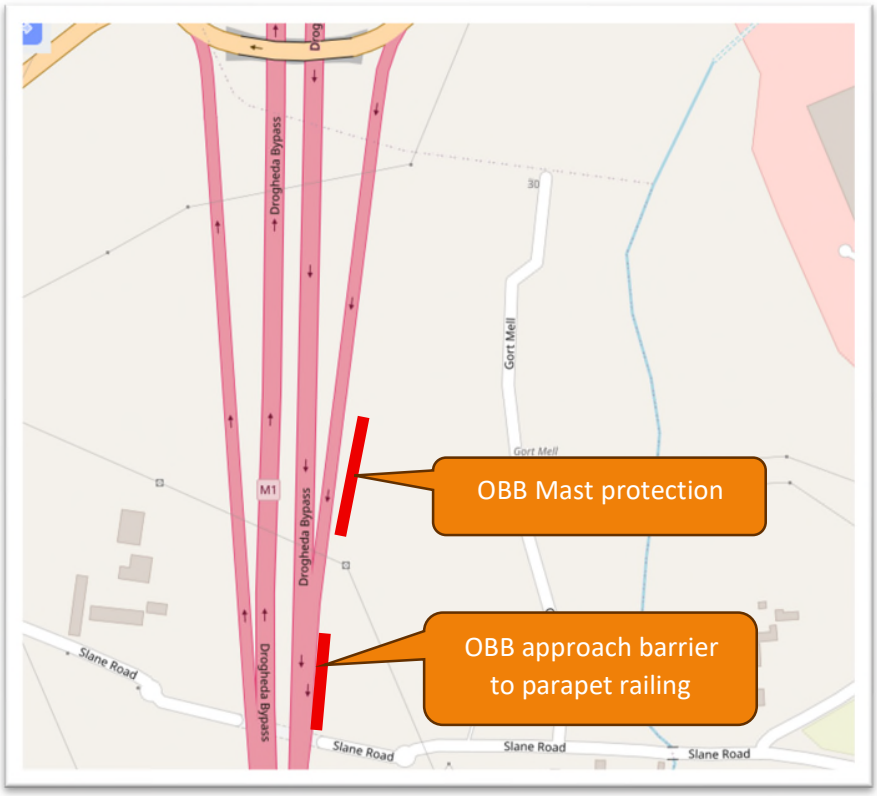

M1 slip verge northern end


120km/hr section of M1 slip

Outline of drainage ditch/open channel.

OBB barrier at former high lighting mast and cutting slope to rear on M1 slip on approach to the nosing with the mainline.

Approach OBB to parapet Railing over Old Slane Road.



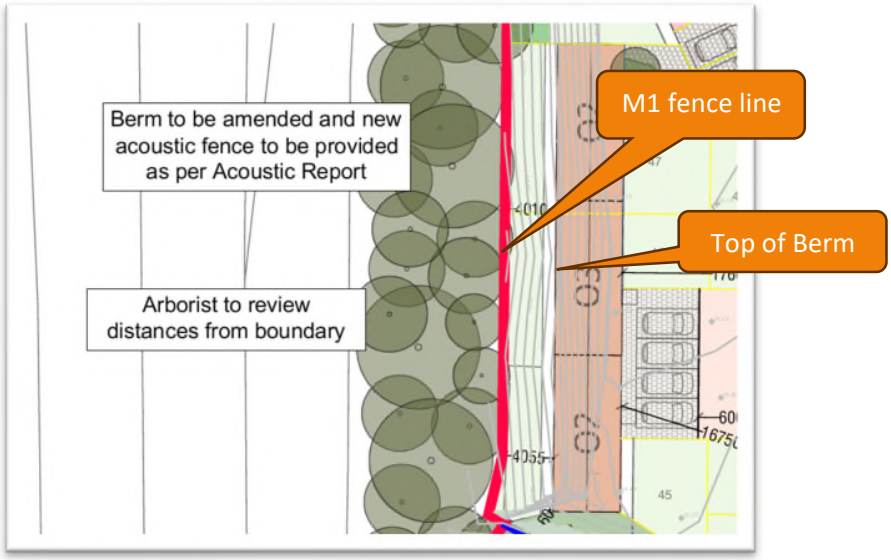

## 5.0 Proposed Road Layout

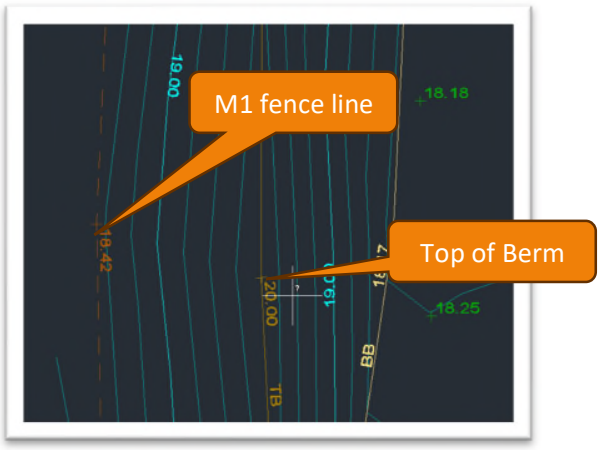
It is not proposed to introduce any new physical infrastructure on the public road (including PPP road) side of the timber post and rail fence.

The boundary fencing for the residential development will be concrete post and panel fencing and it will be placed immediately behind the timber post and rail fence. Where acoustic fencing is needed it will also be placed at that line behind the timber pots and rail. These type of fencing would not be deemed to be passively safe.

There will be public open space and private open space immediately inside the boundary fencing. i.e. places where residents or visitors will be and need to be there without risk of errant vehicles intruding into that space.

An existing berm within the site side of the road fence line is to be removed to facilitate construction of a number of residential units. That berm is approximately 1.5m high as measured from the detailed topographical survey.




For the purposes of this assessment it is assumed that the ground level will be the same at the bottom of the berm/bottom of the fence line.

This assessment is based on determining if the new boundary fencing proposed for the residential scheme is a hazard for an errant vehicle on the M1. (Is it within the Clear Zone or with additional mitigating factors). If it is deemed a hazard then it could need protection by a vehicle restraint system and if it is not a hazard then it can be installed without protection.

# 6.0 Assessment.

## 6.1 M1 Slip Lane (120km/hr section)

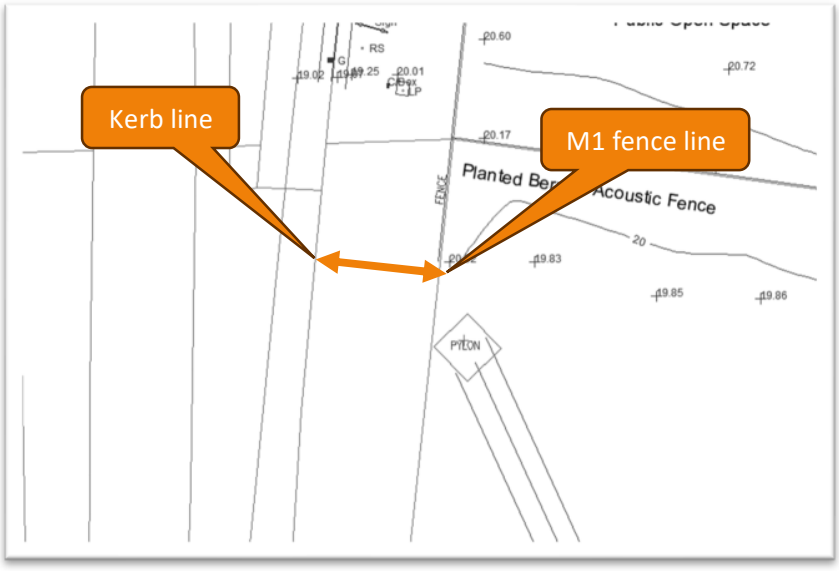
The Clear Zone as defined in TII Publication DN-GEO-03036 Cross Sections and Headroom, dated May 2023 from Table 3.1 is 10m

**Table 3.1 Clear Zone Widths**

| Horizontal radius (m) | Design Speed (km/h) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 40 | 50 | 60 | 70 | 80 | 85 | 100 | 120 |
| | Required width of Clear Zone (m) | | | | | | | |
| Inside of bend or Straight | 2.2 | 3.0 | 4.5 | 5.2 | 6.1 | 6.5 | 8.0 | 10.0 |
| Outside of bend ≥ 1,000m | 2.2 | 3.0 | 4.5 | 5.2 | 6.1 | 6.5 | 8.0 | 10.0 |
| Outside of bend ≥ 900m | 2.4 | 3.3 | 4.9 | 5.6 | 6.9 | 7.1 | 8.8 | 12.4 |
| Outside of | 2.6 | 3.4 | 4.9 | 5.8 | 7.1 | 7.7 | 9.6 | 14.9 |

*The Clear Zone for a 120km/hr design speed on a straight is 10.0m*

The fence line is 11.8m from the kerb line and added to that is the 1.2m hard strip which (13m) is greater than the required Clear Zone of 10.0m





*Mature trees with large girths spaces closely in the verge.*


*View of existing berm (to be removed) and mature trees (in M1 verge) from within the site*

*Motorway fence and mature trees at interface with Phase 2*

There are trees within the Clear zone and the open ditch along with the cutting all of which would be hazards but would also reduce the distance travelled by an errant vehicle to less than the Clear Zone width.

In addition, there are VRS systems at the high mast base and on approach to the underpass which protect those individual hazards and anything else behind them.

**In conclusion the 120km/hr section of the M1 slip does not require a VRS to protect the proposed boundary fence and any other infrastructure proposed as part of this residential development project.**

# 7.0 Conclusions & Recommendation.

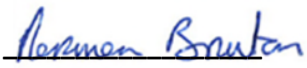
The new fence provided at the boundary of the residential development will be outside the distance an errant vehicle would travel either on the M1 slip road i.e. it will be outside the Clear Zone There is therefore no benefit in providing a VRS. The southbound mainline is further away again and the same applies.

There are many other 'hazards' in the road verge including trees, high kerb, an open ditch and a cutting which are not protected by VRS but which would reduce the distance an errant vehicle would travel.

If this section of road had been identified as a high collisions location through the TII Network Safety Analysis process (TII Publication GE-STY-01036) or a high risk item by the TII Road Safety Inspection process (TII publication AM-STY-06044) remedial works would have been carried out or would be scheduled. There was no remedial works evident at this location since the Drogheda Bypass was opened and the existing OBB barrier showed no evidence of being struck or of having been repaired previously.

**It is therefore recommended that no additional VRS be provided on the verge of the M1 slip lane as a result of the assessment.**

**I certify that I have carried out the above assessment and the recommendation based on that assessment. I visited the site on the 24th of June 2025.**

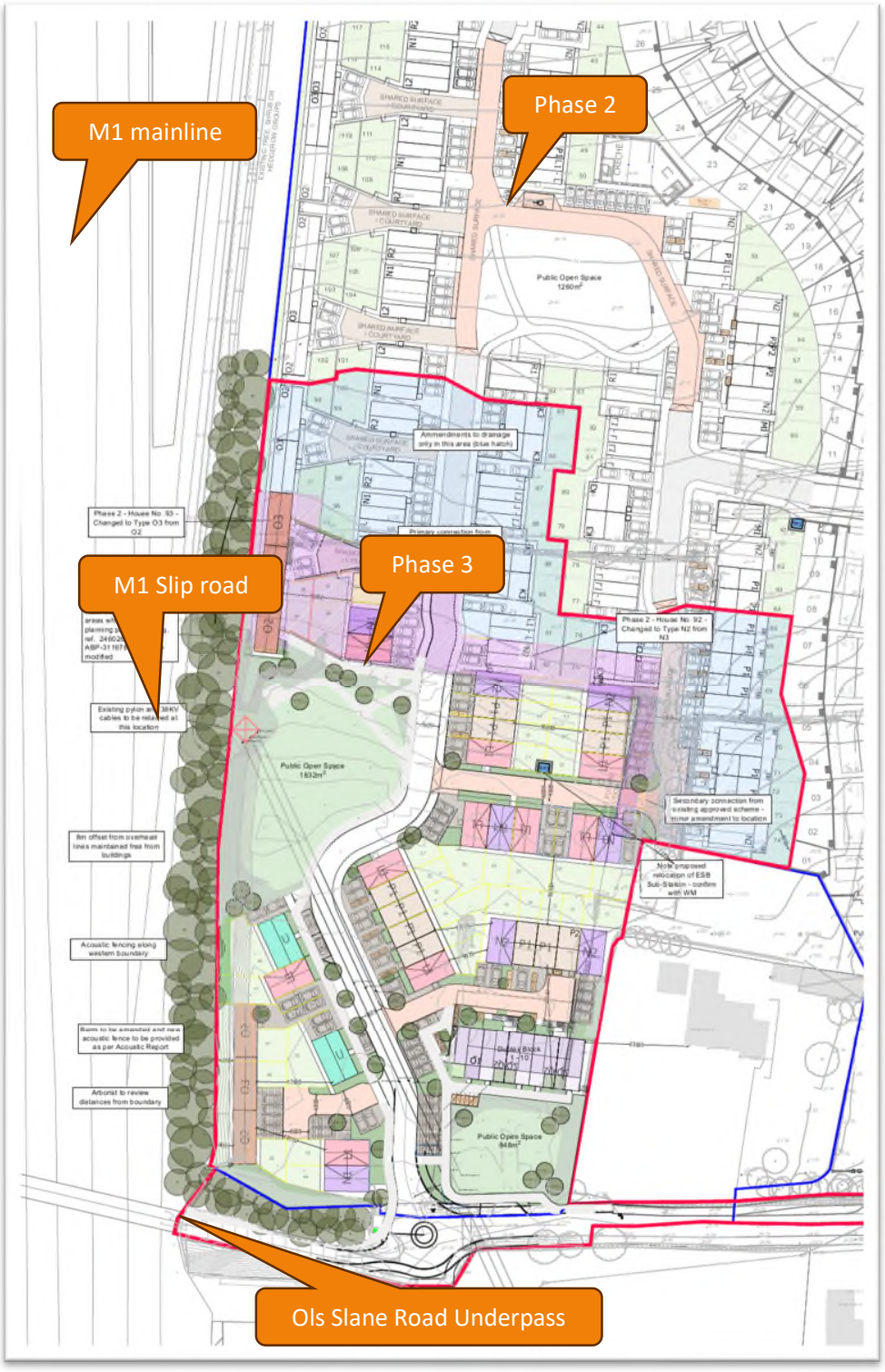


**Nortman Bruton**

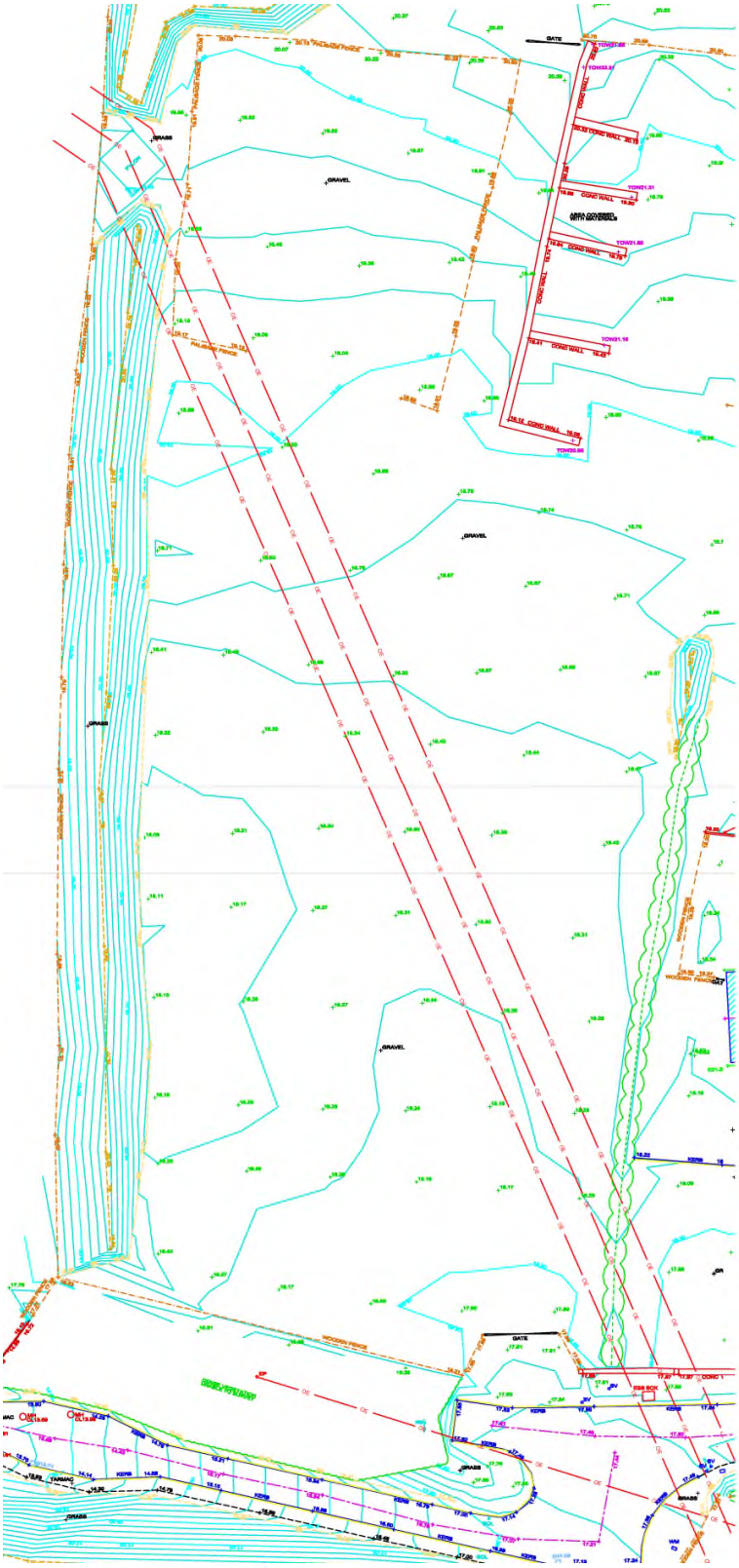
**Chartered Engineer.**

# Appendix A - Drawings

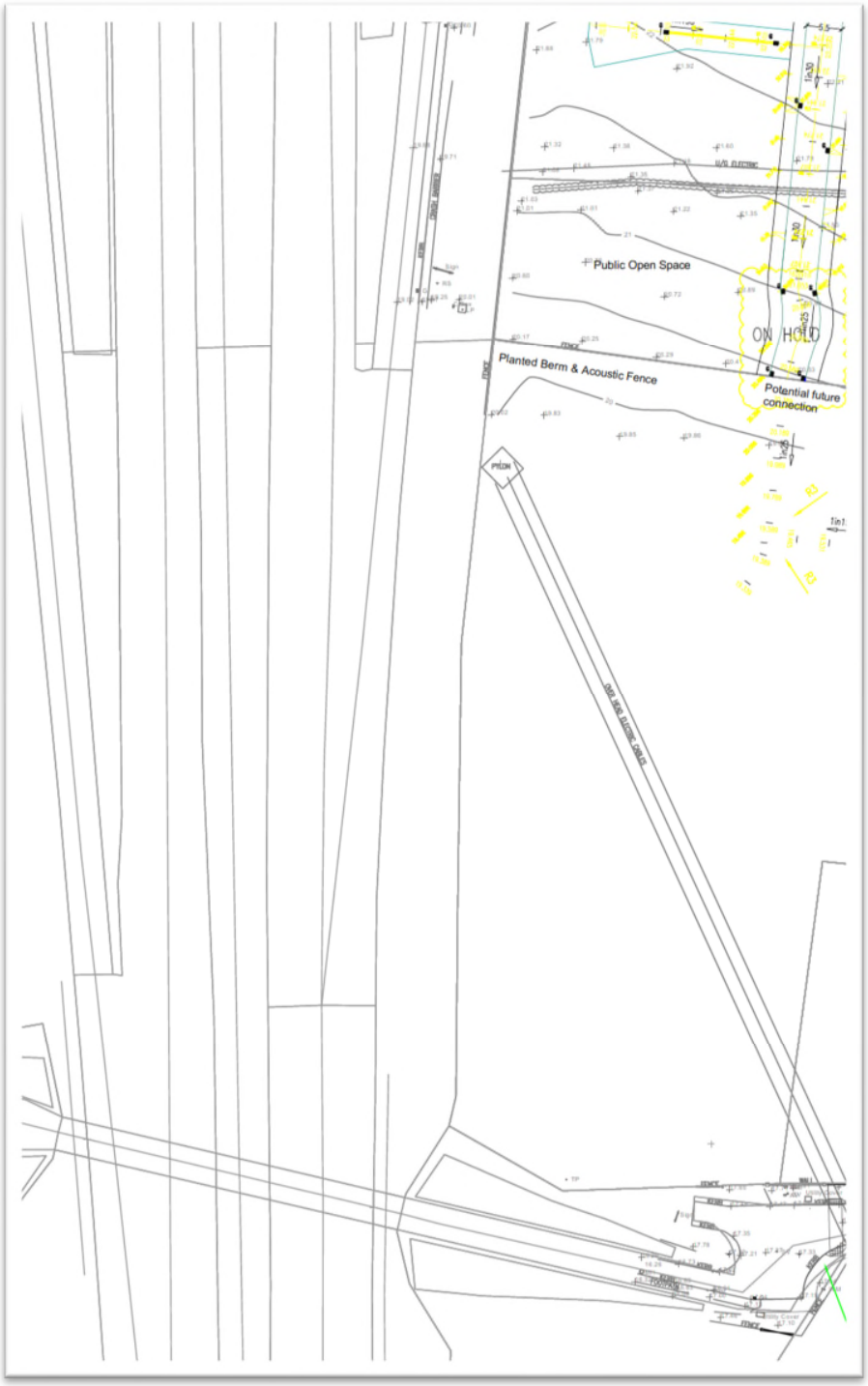
**Proposed Residential scheme**



**Detailed Topographical survey within the site**



**OS Mapping of Motorway including fence line plus some topographical survey to ensure they are consistent.**



## C. Site Investigation Report

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# Ground Investigations Ireland

# Old Slane Road, Drogheda – Phase 2

# Lagan Homes

# Ground Investigation Report

# July 2024

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## *DOCUMENT CONTROL SHEET*

| | |
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| Engineer | Waterman Moylan |
| Client | Lagan Homes |
| Project No | 13642-03-24 |
| Document Title | Ground Investigation Report |

| Rev. | Status | Author(s) | Reviewed By | Approved By | Office of Origin | Issue Date |
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| A | Final | J Cashen | C Finnerty | F McNamara | Dublin | 02 May 2024 |
| B | Final | J Cashen | C Finnerty | F McNamara | Dublin | 26 July 2024 |

*Ground Investigations Ireland Ltd. present the results of the fieldworks and laboratory testing in accordance with the specification and related documents provided by or on behalf of the client The possibility of variation in the ground and/or groundwater conditions between or below exploratory locations or due to the investigation techniques employed must be taken into account when this report and the appendices inform designs or decisions where such variation may be considered relevant. Ground and/or groundwater conditions may vary due to seasonal, man-made or other activities not apparent during the fieldworks and no responsibility can be taken for such variation. The data presented and the recommendations included in this report and associated appendices are intended for the use of the client and the client's geotechnical representative only and any duty of care to others is excluded unless approved in writing.*

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## 1.0 Preamble

On the instructions of Waterman Moylan Consulting Engineers, a site investigation was carried out by Ground Investigations Ireland Ltd. (GII) in April 2024, at the site of the proposed residential development in Drogheda, County Louth. A previous site investigation was completed on the site by GII in 2023.

## 2.0 Overview

### 2.1. Background

It is proposed to construct a new residential development with associated services, access roads and car parking at the proposed site. At the time of the site investigation the northern portion of the site consisted of grassed fields, while the southern and eastern portion of the site had active construction works being completed and was partially be used to stockpile material. The site is situated next to the M1 motorway and is bordered to the south by the Slane Road, which leads into the town centre of Drogheda, County Louth.

### 2.2. Purpose and Scope

The purpose of the site investigation was to investigate subsurface conditions utilising a variety of investigative methods in accordance with the project specification. The scope of the work undertaken for this project included the following:

- Visit project site to observe existing conditions
- Carry out 45 No. Trial Pits to a maximum depth of 3.40m BGL
- Carry out 4 No. Soakaway Tests to determine a soil infiltration value to BRE Digest 365
- Carry out 42 No. Dynamic Probes to determine soil strength/density characteristics
- Geotechnical & Environmental Laboratory testing
- Report with recommendations

## 3.0 Subsurface Exploration

### 3.1. General

During the ground investigation a programme of intrusive investigation specified by the Consulting Engineer was undertaken to determine the sub surface conditions at the proposed site. Regular sampling and in-situ testing were undertaken in the exploratory holes to facilitate the geotechnical descriptions and to enable laboratory testing to be carried out on the soil samples recovered during excavation and drilling.
The procedures used in this site investigation are in accordance with Eurocode 7 Part 2: Ground Investigation and testing (ISEN 1997 – 2:2007) and B.S. 5930:2015+A1:2020.

### 3.2. Trial Pits

The trial pits were excavated using JCB 3CX excavator at the locations shown in the exploratory hole location plan in Appendix 1. The locations were checked using a CAT scan to minimise the potential for encountering services during the excavation. The trial pits were sampled, logged and photographed by a Geotechnical Engineer/Engineering Geologist prior to backfilling with arisings. Notes were made of any services, inclusions, pit stability, groundwater encountered, and the characteristics of the strata encountered and are presented on the trial pit logs which are provided in Appendix 2 of this Report.

### 3.3. Soakaway Testing

The soakaway testing was carried out in selected trial pits at the locations shown in the exploratory hole location plan in Appendix 1. These pits were carefully excavated and filled with water to assess the infiltration characteristics of the proposed site. The pits were allowed to drain and the drop in water level was recorded over time as required by BRE Digest 365. The pits were logged prior to completing the soakaway test and were backfilled with arising's upon completion. The soakaway test results are provided in Appendix 3 of this Report.

### 3.4. Dynamic Probing (DPH)

The dynamic probe tests (DPH) were carried out at the locations shown in the location plan in Appendix 1 in accordance with B.S. 1377: Part 9 1990. The test consists of mechanically driving a cone with a 50kg weight in 100mm intervals and monitoring the number of blows required. An equivalent Standard Penetration Test (SPT) 'N' value may be calculated by dividing the total number of blows over a 300mm drive length by 1.5. The dynamic probe logs are provided in Appendix 4 of this Report.

### 3.5. Surveying

The exploratory hole locations have been recorded using a KQGeo M8 GNSS System which records the coordinates and elevation of the locations to ITM as required by the project specification. The coordinates and elevations are provided on the exploratory hole logs in the appendices of this Report.

### 3.6. Laboratory Testing

Samples were selected from the exploratory holes for a range of geotechnical and environmental testing to assist in the classification of soils and to provide information for the proposed design.
Environmental & Chemical testing as required by the specification, including the Rilta Suite, pH and sulphate testing was carried out by Element Materials Technology Laboratory in the United Kingdom (UK). The Rilta suite testing includes both Solid Waste and Leachate Waste Acceptance Criteria.
Geotechnical testing consisting of moisture content, Atterberg limits, Particle Size Distribution (PSD) and California Bearing Ratio (CBR) tests were carried out by Professional Soils Laboratory (PSL) in the UK.
The results of the laboratory testing are included in Appendix 5 of this report Report.

## 4.0 Ground Conditions

### 4.1. General

The ground conditions encountered during the investigation are summarised below with reference to in-situ and laboratory test results. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs included in the appendices of this report.

The sequence of strata encountered was consistent across the site and generally comprised;

- Topsoil
- Made Ground
- Cohesive Deposits

**TOPSOIL:** Topsoil or reworked topsoil was encountered at most exploratory holes and was present to a maximum depth of 0.60m BGL.

**MADE GROUND:** Made Ground deposits were encountered from ground level at TP-128, or beneath the topsoil at TP-116, TP-125, TP-145 and TP-147. They were present to a depth of between 0.30m and 2.30m BGL, with the full extent not determined at TP-116. These deposits were described generally as *brown mottled grey slightly sandy slightly gravelly Clay with variable fragments of red brick, timber, PVC, wire, concrete and plastic.*

**COHESIVE DEPOSITS:** Cohesive deposits were encountered beneath the Made Ground and were described typically as *brown slightly sandy slightly gravelly CLAY low cobble and boulder content.* The secondary sand and gravel constituents varied across the site and with depth, with granular lenses occasionally present in the glacial present in the glacial till matrix. The granular lenses are particularly prevalent in the northern portion of the site, with a sand or gravel bed within the cohesive deposit noted within TP-101, TP-106, TP-107 and TP-180, only. These deposits also had low (<5%), medium (5%-20%) or high (20%-50%) cobble and boulder content, where noted on the exploratory hole logs.

### 4.2. In-situ Strength Testing

The correlated DPH (N100) values indicate that the overburden deposits at most locations are soft or soft to firm to depth of 0.70m to 2.20m BGL and become firm or stiff with depth. DP-106 had low blow counts to a depth of 5.20m BGL. DP-126 had anomalously low blow counts, with many DPH (N100) values of between 0 and 2 recorded from 4.60m to 8.70m BGL. The DPH (N100) values were primarily 0 within the last two metres of the test.

### 4.3. Groundwater

Groundwater strikes are noted on the exploratory hole logs where they occurred. It should be noted that these exploratory holes did not remain open for sufficiently long periods of time to establish the

hydrogeological regime and groundwater levels would be expected to vary with the tide, time of year, rainfall, nearby construction and other factors.

### 4.4. Laboratory Testing

#### 4.4.1. Geotechnical Laboratory Testing

The geotechnical testing carried out on soil samples recovered generally confirm the descriptions on the logs with the primary constituent of the cohesive deposits found to be a CLAY of intermediate plasticity. The Particle Size Distribution test on sample TP138 at 1.50m confirm that generally the cohesive deposits are well-graded with percentages of sands and gravels ranging between 24% and 30% generally with fines content of 46% The Particle Size Distribution test on sample TP101 at 2.20m confirm that generally the granular deposits are well-graded with percentages of sands and silt/clay 39% with a gravel content of typically 61%.
The CBR testing on remoulded samples gave results ranging between 0.3% and 20.1%.

#### 4.4.2. Chemical Laboratory Testing

The pH and sulphate testing carried out indicate that pH results are near neutral and that the water-soluble sulphate results is low when compared to the guideline values from BRE Special Digest 1:2005. The samples tested classify the soil as a Design Sulphate Level DS-1.

#### 4.4.3. Environmental Laboratory Testing

A number of samples were analysed for a suite of parameters which allows for the assessment of the sampled material in terms of total pollutant content for classification of materials as *hazardous* or *non-hazardous*. The suite also allows for the assessment of the sampled material in terms of suitability for placement at licenced landfills (inert, stable non-reactive, hazardous etc.). The parameter list for the suite includes analysis of the solid samples for arsenic, barium, cadmium, chromium, copper, cyanide, lead, nickel, mercury, zinc, speciated aliphatic and aromatic petroleum hydrocarbons, pH, sulphate, sulphide, moisture content, soil organic matter and an asbestos screen.
The suite also includes those parameters specified in the EU Council Decision establishing criteria for the acceptance of waste at Landfills (Council Decision 2003/33/EC), which for the solid samples are total organic carbon (TOC), speciated aliphatic and aromatic petroleum hydrocarbons, BTEX, phenol, polychlorinated biphenyls (PCB) and PAH.
As part of the suite a leachate is generated from the solid sample, which is analysed for antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, chloride, fluoride, soluble sulphate, sulphide, phenols, dissolved organic carbon (DOC) and total dissolved solids (TDS).
While the laboratory report provides a comparison with the waste acceptance criteria limits it does not provide a waste classification of the material sampled nor does it comment on any potentially hazardous properties of the materials tested. The possibility for contamination, not revealed by the testing undertaken should be borne in mind particularly where Made Ground deposits are present, or the previous site use or

location indicate a risk of environmental variation. The waste classification report is included under the cover of a separate report by Ground Investigations Ireland.

The results from the completed laboratory testing are included in Appendix 5 of this report.

## 5.0 Recommendations & Conclusions

### 5.1. General

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 exploratory hole locations, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for conditions which have not been revealed by the exploratory holes. Limited information has been provided at the ground investigation stage and any designs based on the recommendations or conclusions should be completed in accordance with the current design codes, taking into account the variation and the specific details contained within the exploratory hole logs.

### 5.2. Foundations

At the location of the proposed structures, allowable bearing capacities of 75 kN/m$^2$ and 100 kN/m$^2$ are recommended for conventional strip or pad foundations on the cohesive deposits at the depths outlined in Table 1 below. The possibility for variation in the depth of the made ground or soft ground in the vicinity of these foundations should be considered and foundation inspections should be carried out. Any soft spots encountered at the proposed foundation depths should be excavated and replaced with lean mix concrete. At the location of DP-106, low DPH (N100) values were recorded to a depth of 5.20m BGL. This depth may be considered impractical for lean mix trench fill techniques and thus pile foundations may need to be considered at this location. Separately, DP-126 had anomalously low DPH (N100) values, with many values of 0 to 2 recorded from 4.60m to 8.70m BGL. Further site investigation works are recommended at this location to determine the reason for and extent of the anomaly and to determine a suitable foundation design at this location.

**Table 1 - Allowable Bearing Capacities**

| Shallowest Practical / Depth to 75 kN/m$^2$ | | | | Depth to 100 kN/m$^2$ | | | |
|---|---|---|---|---|---|---|---|
| Probe | ABC | Depth | | Probe | ABC | Depth | |
| No. | kN/m$^2$ | m BGL | Comment | No. | kN/m$^2$ | m BGL | Comment |
| DP-100 | - | - | | DP-100 | 100 | 0.70 | |
| DP-101 | 75 | 1.80 | | DP-101 | 100 | 2.00 | Lean Mix Trench Fill |
| DP-102 | 75 | 0.70 | | DP-102 | 100 | 1.80 | |
| DP-103 | 75 | 0.70 | | DP-103 | 100 | 1.50 | |
| DP-104 | - | - | | DP-104 | 100 | 0.70 | |
| DP-105 | - | - | | DP-105 | 100 | 2.40 | Lean Mix Trench Fill |
| DP-106 | 30 | 0.50 | Low DPH blow counts to 5.20m BGL, consider piling | DP-106 | - | - | |
| DP-107 | 75 | 1.10 | | DP-107 | 100 | 2.00 | Lean Mix Trench Fill |
| DP-108 | - | - | | DP-108 | 100 | 2.10 | Lean Mix Trench Fill |
| DP-109 | - | - | | DP-109 | 100 | 0.70 | |
| DP-110 | 75 | 0.70 | | DP-110 | 100 | 2.30 | Lean Mix Trench Fill |
| DP-111 | 75 | 0.70 | | DP-111 | 100 | 1.10 | |
| DP-112 | 75 | 0.80 | | DP-112 | 100 | 1.70 | |

| Shallowest Practical / Depth to 75 kN/m$^2$ | | | | Depth to 100 kN/m$^2$ | | | |
|---|---|---|---|---|---|---|---|
| Probe | ABC | Depth | | Probe | ABC | Depth | |
| No. | kN/m$^2$ | m BGL | Comment | No. | kN/m$^2$ | m BGL | Comment |
| DP-114 | 75 | 0.70 | | DP-114 | 100 | 1.10 | |
| DP-115 | 75 | 0.70 | | DP-115 | 100 | 1.30 | |
| DP-117 | 75 | 1.50 | | DP-117 | 100 | 2.00 | Lean Mix Trench Fill |
| DP-118 | - | - | | DP-118 | 100 | 0.70 | |
| DP-119 | 75 | 0.70 | | DP-119 | 100 | 2.40 | |
| DP-120 | - | - | | DP-120 | 100 | 0.90 | |
| DP-122 | - | - | | DP-122 | 100 | 1.60 | |
| DP-123 | 75 | 0.70 | | DP-123 | 100 | 2.00 | Lean Mix Trench Fill |
| DP-124 | - | - | | DP-124 | 100 | 0.70 | |
| DP-125 | - | - | | DP-125 | 100 | 0.90 | |
| DP-126 | - | - | Anomalous - very low DPH blow counts to 8.80m BGL. Further investigation recommended | DP-126 | - | - | |
| DP-127 | - | - | | DP-127 | 100 | 2.00 | Lean Mix Trench Fill |
| DP-128 | 75 | 0.70 | | DP-128 | 100 | 1.00 | |
| DP-129 | 75 | 0.70 | | DP-129 | 100 | 2.10 | Lean Mix Trench Fill |
| DP-130 | 75 | 0.70 | | DP-130 | 100 | 2.50 | Lean Mix Trench Fill |
| DP-131 | 75 | 0.70 | | DP-131 | 100 | 1.20 | |
| DP-132 | - | - | | DP-132 | 100 | 0.70 | |
| DP-133 | 75 | 0.70 | | DP-133 | 100 | 1.70 | |
| DP-134 | - | - | | DP-134 | 100 | 0.70 | |
| DP-135 | 75 | 0.70 | | DP-135 | 100 | 1.10 | |
| DP-137 | 75 | 1.60 | | DP-137 | 100 | 2.40 | Lean Mix Trench Fill |
| DP-138 | 75 | 1.20 | | DP-138 | 100 | 1.70 | |
| DP-140 | 75 | 2.20 | Lean Mix Trench Fill | DP-140 | 100 | 2.80 | Lean Mix Trench Fill |
| DP-141 | - | - | | DP-141 | 100 | 1.90 | |
| DP-142 | - | - | | DP-142 | 100 | 1.30 | |
| DP-146 | 75 | 1.00 | | DP-146 | 100 | 1.20 | |
| DP-149 | 60 | 0.70 | | DP-149 | 100 | 2.30 | Lean Mix Trench Fill |
| DP-150 | - | - | | DP-150 | 100 | 0.90 | |
| DP-151 | 75 | 1.10 | | DP-151 | 100 | 1.30 | |

A ground bearing floor slab is recommended to be based on the firm cohesive deposits, with an appropriate depth of compacted hardcore specified by the consulting engineer and in accordance with the limits and guidelines in SR21:2014 +A1:2016 and/or NRA SRW CL808 Type E granular stone fill. Where the depth of Made Ground or soft deposits exceeds 0.90m then suspended floor slabs should be considered.

The pH and sulphate testing completed on samples recovered from the exploratory holes indicates the pH results are near neutral and the sulphate results are low, when compared to the guideline values from BRE

Special Digest 1:2005. No special precautions are required for concrete foundations to prevent sulphate attack. The samples tested were below the limits of DS1 in the BRE Special Digest 1:2005.

### 5.3. Excavations

Short term temporary excavations in the cohesive deposits will remain stable for a limited time only and will require to be appropriately battered or the sides supported if the excavation is below 1.25m BGL or is required to permit man entry. Excavations in the Made Ground or soft Cohesive Deposits will require to be appropriately battered or the sides supported due to the low strength of these deposits. Any excavations which penetrate the granular lenses will require to be appropriately battered or the sides supported and may require dewatering. The groundwater and stability noted on the trial pit logs should be consulted when determining the most appropriate construction methods for excavations.

Any waste material to be removed off site should be disposed of to a suitably licenced landfill. The environmental testing completed during the ground investigation will be reported under the cover of a separate GII Waste Classification Report.

### 5.4. Soakaway Design

Infiltration rates of f = 5.308 x $10^{-5}$ m/s and 1.308 x $10^{-4}$ m/s were calculated for the soakaway locations SK-02 and SK-04, respectively. At the locations of SK-03 and SK-05 the water level dropped too slowly to allow calculation of ‘f’ the soil infiltration rate. These locations are therefore not recommended as suitable for soakaway design and construction.

The recommendations provided in this report should be verified in the design of the proposed buildings, using the full details of the loading conditions and taking into consideration the allowable tolerable settlements/movements that the building can accommodate. The founding strata should be inspected and verified by a suitably qualified engineer prior to construction of the building foundations.

# **APPENDIX 1 -** Figures


| | | | |
|---|---|---|---|
| **GII** GROUND INVESTIGATIONS IRELAND Geotechnical & Environmental<br>Ground Investigations Ireland Ltd.<br>Cathorinstown House,<br>Hazelhatch Road,<br>Newcastle, Co. Dublin<br>www.gii.ie 01-6015175/5176 | **Client:**<br>LaganHomes | **Project Title:**<br>Old Slane Road Phase 2<br>**Drawing Title:**<br>Figure 1 Site Location<br>**GII Project Reference:**<br>13642-03-24 | ● Site Location<br>Indicative Site Boundary<br>Phase 2 Indicative Works Area<br>No Access |
| 0 50 100 150 200 m | | Drawn By: JC<br>Date: 02/05/2024 | |


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Geotechnical & Environmental

Ground Investigations Ireland Ltd.
Catherinstown House,
Hazelhatch Road,
Newcastle, Co. Dublin
www.gii.ie 01-6015175/5176

**Client:**

LaganHomes

**Project Title:**
Old Slane Road Phase 2

**Drawing Title:**
Figure 2 - Trial Pit and Soakaway Test Locations

**GII Project Reference:**
13642-03-24

0 17 34 51 68 m

Drawn By:
JC

Date:
02/05/2024

- Indicative Site Boundary
- Phase 2 Indicative Works Area
- No Access
- Trial Pit
- Soakaway


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Newcastle, Co. Dublin
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**Client:**

LaganHomes

**Project Title:**
Old Slane Road Phase 2

**Drawing Title:**
Figure 3 - Dynamic Probe and Lab-CBR Locations

**GII Project Reference:**
13642-03-24

0 17 34 51 68 m

Drawn By:
JC

Date:
02/05/2024

- Indicative Site Boundary
- Phase 2 Indicative Works Area
- No Access
- Dynamic Probe
- CBR

# **APPENDIX 2** – Trial Pit Records

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** SK02 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 1.70m x 0.90m x 1.50m (L x W x D) | **Ground Level (mOD)** 24.50 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705919.4 E 776314.6 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 24.20 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.20) | | | |
| | | | | 23.00 | 1.50 | Complete at 1.50m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Soakaway carried out in trial pit
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.SK02 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** SK03 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 1.60m x 0.90m x 1.50m (L x W x D) | **Ground Level (mOD)** 32.29 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705922.1 E 776542.9 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.60) | TOPSOIL | | |
| | | | | 31.69 | 0.60 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.50) | | | |
| | | | | 31.19 | 1.10 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.40) | | | |
| | | | | 30.79 | 1.50 | Complete at 1.50m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Soakaway carried out in trial pit
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.SK03 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** SK04 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 1.90m x 0.90m x 1.70m (L x W x D) | **Ground Level (mOD)** 22.59 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705885.2 E 776270.9 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) | TOPSOIL | | |
| | | | | 22.44 | 0.15 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.15) | | | |
| | | | | 21.29 | 1.30 | Firm brown slightly sandy gravelly CLAY with low cobble content | | |
| | | | | | (0.40) | | | |
| | | | | 20.89 | 1.70 | Complete at 1.70m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Soakaway carried out in trial pit
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.SK04 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** SK05 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 1.50m x 0.90m x 1.50m (L x W x D) | **Ground Level (mOD)** 29.61 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705906.8 E 776441.6 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 29.21 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.10) | | | |
| | | | | 28.11 | 1.50 | Complete at 1.50m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Soakaway carried out in trial pit
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.SK05 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP100 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 29.08 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706039.9 E 776533.9 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 28.78 | 0.30 | Firm brown slightly sandy slightly gravelly CLAY with medium cobble content | | |
| 0.70 | ES | | | | (0.80) | | | |
| | | | | 27.98 | 1.10 | Stiff brownish grey slightly sandy gravelly CLAY with low cobble content | | |
| | | | | | (1.40) | | | |
| | | | | 26.58 | 2.50 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.50) | | | |
| | | | | 26.08 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP100 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP101 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.30m x 0.90m x 3.40m (L x W x D) | **Ground Level (mOD)** 31.21 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705988 E 776544.6 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 30.81 | 0.40 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.60) | | | |
| | | | | 29.21 | 2.00 | Brown clayey sandy subangular to subrounded fine to coarse GRAVEL with low cobble content | | |
| 2.20 | B | | | | (0.70) | | | |
| | | | | 28.51 | 2.70 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.70) | | | |
| | | | | 27.81 | 3.40 | Complete at 3.40m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.40m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP101 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP102 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 32.16 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705945.2 E 776551.4 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 31.86 | 0.30 | Firm brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (0.90) | | | |
| | | | | 30.96 | 1.20 | Firm to stiff brown sandy gravelly CLAY with low cobble content | | |
| 1.50 | B | | | | (0.80) | | | |
| | | | Water strike(1) at 2.00m. | 30.16 | 2.00 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | ▽1 |
| | | | | | (1.00) | | | |
| | | | | 29.16 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Medium ingress.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP101 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP103 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.80m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 32.36 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705909.8 E 776535.3 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 31.96 | 0.40 | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.80) | | | |
| | | | | 31.16 | 1.20 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.80) | | | |
| | | | | 30.36 | 2.00 | Stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 29.36 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP103 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** **TP104** |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.10m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 31.55 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705948.5 E 776531.3 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 31.15 | 0.40 | Soft brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | Water strike(1) at 1.00m. | | (1.00) | | | ▽1 |
| | | | | 30.15 | 1.40 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 29.55 | 2.00 | Stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 28.55 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP104 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP105 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.87 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705985.9 E 776527.4 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 30.57 | 0.30 | Soft brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (0.90) | | | |
| | | | | 29.67 | 1.20 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 1.50 | B | | | | (0.60) | | | |
| | | | | 29.07 | 1.80 | Stiff greyish brown slightly sandy gravelly CLAY with low cobble content | | |
| | | | Water strike(1) at 2.00m. | | | | | ▽1 |
| | | | | | (1.20) | | | |
| 2.50 | B | | | | | | | |
| | | | | 27.87 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP105 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP106 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 32.15 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705894.1 E 776517.9 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 31.85 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.30) | | | |
| | | | | 30.55 | 1.60 | Brown clayey sandy subangular to subrounded fine to coarse GRAVEL with low cobble content | | |
| | | | | | (0.50) | | | |
| | | | | 30.05 | 2.10 | Stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.90) | | | |
| | | | | 29.15 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP106 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP107 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.90m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 31.39 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705927.4 E 776511.2 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 30.99 | 0.40 | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.90) | | | |
| | | | | 30.09 | 1.30 | Brown clayey sandy subangular to subrounded fine to coarse GRAVEL with low cobble content | | |
| | | | Water strike(1) at 1.90m. | | (0.70) | | | ▽1 |
| | | | | 29.39 | 2.00 | Brown slightly gravelly clayey fine to coarse SAND with low cobble content | | |
| | | | | | (0.40) | | | |
| | | | | 28.99 | 2.40 | Stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 28.39 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.90m BGL. Seapage.
Trial pit unstable. Sidewall spalling.
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP107 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP108 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.30m x 0.90m x 3.20m (L x W x D) | **Ground Level (mOD)** 29.37 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706006.5 E 776516.8 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 28.97 | 0.40 | Soft brown sandy gravelly CLAY | | |
| | | | | | (0.80) | | | |
| | | | | 28.17 | 1.20 | Brown clayey gravelly fine to coarse SAND | | |
| 1.80 | B | | Water strike(1) at 1.40m. | | (1.10) | | | ▽1 |
| | | | | 27.07 | 2.30 | Stiff orangish brown sandy gravelly CLAY with low cobble content | | |
| | | | | | (0.90) | | | |
| | | | | 26.17 | 3.20 | Complete at 3.20m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.40m BGL. Seapage.
Trial pit unstable. Sidewall spalling
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP108 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP109 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.85 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706033.4 E 776507.5 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.25) | TOPSOIL | | |
| | | | | 27.60 | 0.25 | Soft greyish brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.85) | | | |
| | | | | 26.75 | 1.10 | Firm to stiff brownish grey slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.90) | | | |
| | | | | 24.85 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP109 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP110 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.10m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 31.68 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705881.4 E 776494.2 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 31.38 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (0.90) | | | |
| | | | | 30.48 | 1.20 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 1.50 | B | | | | (0.80) | | | |
| | | | | 29.68 | 2.00 | Stiff dark brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (1.00) | | | |
| | | | | 28.68 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP110 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP111 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.49 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705949 E 776491.1 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 30.09 | 0.40 | Soft brown slightly sandy slightly gravelly CLAY | | |
| 0.80 | B | | | | (0.90) | | | |
| | | | | 29.19 | 1.30 | Firm to stiff orangish brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| 2.00 | B | | | | | | | |
| | | | | 28.19 | 2.30 | Stiff orangish brown slightly sandy gravelly CLAY with low cobble content | | |
| | | | | | (0.70) | | | |
| | | | | 27.49 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP111 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP112 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.19 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705972.9 E 776493.8 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 29.79 | 0.40 | Soft to firm brown sandy gravelly CLAY | | |
| 0.80 | B | | | | (0.90) | | | |
| | | | | 28.89 | 1.30 | Firm to stiff orangish brown slightly sandy gravelly CLAY with low cobble content | | |
| 2.00 | B | | Water strike(1) at 2.00m. | | (1.70) | | | ▽1 |
| | | | | 27.19 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP112 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP113 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.10 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706028.4 E 776482.8 N | **Dates** 11/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 26.70 | 0.40 | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | Water strike(1) at 1.00m. | | (0.70) | | | ▽1 |
| | | | | 26.00 | 1.10 | Firm to stiff brownish grey slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.90) | | | |
| | | | | 24.10 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP113 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP114 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.25m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.55 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705919.4 E 776474.1 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 30.25 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.70) | | | |
| | | | | 29.55 | 1.00 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.40) | | | |
| | | | | 28.15 | 2.40 | Stiff dark brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 27.55 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP114 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP115 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.80m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.45 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706000.1 E 776462.6 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 27.05 | 0.40 | | | |
| 0.50 | B | | | | (0.50) | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | 26.55 | 0.90 | | | |
| 1.00 | ES | | | | | Firm to stiff brown slightly sandy gravelly CLAY with low cobble content | | |
| 1.50 | B | | | | (1.10) | | | |
| | | | | 25.45 | 2.00 | | | |
| | | | | | | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (1.00) | | | |
| | | | | 24.45 | 3.00 | | | |
| | | | | | | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP115 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP116 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.70m x 0.90m x 2.30m (L x W x D) | **Ground Level (mOD)** 25.98 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706021 E 776457.7 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.50) | MADE GROUND: TOPSOIL | | |
| | | | | 25.48 | 0.50 | MADE GROUND: Brown slightly sandy slightly gravelly Clay with many fragments of timber, pvc, wire, concrete and plastic | | |
| | | | | | (1.80) | | | |
| | | | Water strike(1) at 2.30m. | 23.68 | 2.30 | Terminated at 2.30m | | ▽1 |

**Plan**

**Remarks**

Groundwater encountered at 2.30m BGL. Fast ingress.
Trial pit stable
Trial pit terminated at 2.30m BGL due to groundwater ingress
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP116 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP117 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 29.90 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705875.3 E 776438.9 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 29.60 | 0.30 | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | Water strike(1) at 1.10m. | | (1.10) | | | ▽1 |
| | | | | 28.50 | 1.40 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 27.50 | 2.40 | Stiff brown slightly sandy gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 26.90 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.10m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP117 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP118 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.82 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705890.7 E 776469.4 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.50) | TOPSOIL | | |
| | | | | 30.32 | 0.50 | | | |
| | | | | | (0.90) | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | 29.42 | 1.40 | | | |
| | | | Water strike(1) at 2.00m. | | (1.60) | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | ▽1 |
| | | | | 27.82 | 3.00 | | | |
| | | | | | | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP118 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP119 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 29.41 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705922.1 E 776439.1 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 29.01 | 0.40 | | | |
| 0.50 | B | | | | (0.50) | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | | 28.51 | 0.90 | | | |
| 1.50 | B | | Water strike(1) at 1.60m. | | (1.30) | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | ▽1 |
| | | | | 27.21 | 2.20 | | | |
| | | | | | (0.80) | Stiff brown slightly sandy gravelly CLAY with low cobble content | | |
| | | | | 26.41 | 3.00 | | | |
| | | | | | | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.60m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP119 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP120 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.00m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 30.05 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705945.1 E 776459.8 N | **Dates** 12/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 29.65 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.10) | | | |
| | | | | 28.55 | 1.50 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.50) | | | |
| | | | | 27.05 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP120 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP121 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.90m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 28.82 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705962.1 E 776437.8 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 28.42 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.70) | | | |
| | | | | 27.72 | 1.10 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | Water strike(1) at 1.40m. | | (0.90) | | | ▽1 |
| | | | | 26.82 | 2.00 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 25.82 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 1.40m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP121 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP122 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.90m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 26.84 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705991.7 E 776434 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 26.44 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 25.84 | 1.00 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | Water strike(1) at 2.00m. | | (1.30) | | | ▽1 |
| | | | | 24.54 | 2.30 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.70) | | | |
| | | | | 23.84 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

Groundwater encountered at 2.00m BGL. Seapage.
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP122 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP123 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.70m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 29.03 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705876.3 E 776412.8 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 28.63 | 0.40 | | | |
| 0.50 | B | | | | (1.10) | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| 1.50 | B | | | 27.53 | 1.50 | | | |
| | | | | | (1.50) | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| 2.50 | B | | | | | | | |
| | | | | 26.03 | 3.00 | | | |
| | | | | | | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP123 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP124 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.80m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 29.06 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705913.9 E 776423.6 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 28.76 | 0.30 | Firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.10) | | | |
| | | | | 27.66 | 1.40 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble | | |
| | | | | | (1.60) | | | |
| | | | | 26.06 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP124 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP125 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.60m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.96 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705970.8 E 776414.6 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | 27.76 | (0.20) 0.20 | TOPSOIL | | |
| | | | | | | MADE GROUND: Brown mottled grey slightly sandy slightly gravelly Clay with occasional fragments of red brick | | |
| | | | | 26.36 | (1.40) 1.60 | Firm light brown slightly sandy slightly gravelly CLAY | | |
| | | | | 25.66 | (0.70) 2.30 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| | | | | 24.96 | (0.70) 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP125 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP126 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 24.96 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 706003.1 E 776407.8 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.20) | TOPSOIL | | |
| | | | | 24.76 | 0.20 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.40) | | | |
| 0.50 | B | | | 24.36 | 0.60 | Firm light brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.30) | | | |
| 1.50 | B | | | | | | | |
| | | | | 23.06 | 1.90 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| | | | | | (1.10) | | | |
| 2.50 | B | | | | | | | |
| | | | | 21.96 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP126 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP128 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.50m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 28.01 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705940.2 E 776399.3 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | MADE GROUND: Light brown slightly sandy slightly gravelly Clay | | |
| | | | | 27.71 | 0.30 | Firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.70) | | | |
| | | | | 27.01 | 1.00 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (2.00) | | | |
| | | | | 25.01 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP128 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP129 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 28.07 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705888.6 E 776388.3 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 27.67 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.40) | | | |
| | | | | 27.27 | 0.80 | Firm light brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.60) | | | |
| | | | | 26.67 | 1.40 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| | | | | | (1.60) | | | |
| | | | | 25.07 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP129 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP130 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.65 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705871.5 E 776377.9 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 27.35 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 0.50 | B | | | | (0.80) | | | |
| | | | | 26.55 | 1.10 | Firm light brown slightly sandy slightly gravelly CLAY | | |
| 1.50 | B | | | | (0.60) | | | |
| | | | | 25.95 | 1.70 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (1.30) | | | |
| | | | | 24.65 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP130 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP131 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.50m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 27.71 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705898.8 E 776377.4 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 27.31 | 0.40 | Soft to firm light brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.60) | | | |
| | | | | 26.71 | 1.00 | Firm light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 25.71 | 2.00 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.00) | | | |
| | | | | 24.71 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP131 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP132 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 26.68 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705868 E 776357.1 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | TOPSOIL | | |
| | | | | 26.28 | 0.40 | Soft to firm light brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.90) | | | |
| | | | | 25.38 | 1.30 | Firm light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.80) | | | |
| | | | | 24.58 | 2.10 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.90) | | | |
| | | | | 23.68 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP132 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP133 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.60m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 25.68 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705899 E 776338.4 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.20) | TOPSOIL | | |
| | | | | 25.48 | 0.20 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (0.90) | | | |
| | | | | 24.58 | 1.10 | Firm light brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| 1.50 | B | | | | (1.20) | | | |
| | | | | 23.38 | 2.30 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (0.70) | | | |
| | | | | 22.68 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP133 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP134 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.20m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 25.72 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705921.3 E 776342.6 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 25.42 | 0.30 | Soft to firm light brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (1.10) | | | |
| | | | | 24.32 | 1.40 | Firm light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 1.50 | B | | | | (1.00) | | | |
| | | | | 23.32 | 2.40 | Firm to stiff light brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (0.60) | | | |
| | | | | 22.72 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP134 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP135 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.30m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 25.14 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705865.6 E 776327.1 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 24.84 | 0.30 | Soft brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.00) | | | |
| | | | | 23.84 | 1.30 | Firm brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| | | | | | (0.70) | | | |
| | | | | 23.14 | 2.00 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | | | |
| | | | | 22.54 | 2.60 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.40) | | | |
| | | | | 22.14 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP135 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP136 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 2.00m (L x W x D) | **Ground Level (mOD)** 24.34 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705902.8 E 776307.6 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | TOPSOIL | | |
| | | | | 24.04 | 0.30 | Soft to firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.70) | | | |
| | | | | 23.34 | 1.00 | Firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.60) | | | |
| | | | | 22.74 | 1.60 | Firm to stiff brown slightly sandy gravelly CLAY with high cobble and boulder content | | |
| | | | | | (0.40) | Obstruction- possible boulder | | |
| | | | | 22.34 | 2.00 | Terminated at 2.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit terminated at 2.00m BGL due to obstruction. Possible boulder.
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP136 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP137 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.40m x 0.90m x 2.00m (L x W x D) | **Ground Level (mOD)** 24.55 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705922.3 E 776315.9 N | **Dates** 15/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.20) | TOPSOIL | | |
| | | | | 24.35 | 0.20 | Soft to firm light brown slightly sandy slightly gravelly CLAY | | |
| 0.50 | B | | | | (0.70) | | | |
| | | | | 23.65 | 0.90 | Firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (0.70) | | | |
| 1.50 | B | | | 22.95 | 1.60 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.80) | | | |
| | | | | 22.15 | 2.40 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| 2.50 | B | | | | (0.60) | | | |
| | | | | 21.55 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL.
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP137 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP138 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 3.10m x 0.90m x 3.00m (L x W x D) | **Ground Level (mOD)** 23.79 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705887 E 776291.4 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.20) | TOPSOIL | | |
| | | | | 23.59 | 0.20 | Soft brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 0.50 | B | | | | (0.70) | | | |
| | | | | 22.89 | 0.90 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 1.00 | ES | | | | | | | |
| | | | | | (1.10) | | | |
| 1.50 | B | | | | | | | |
| | | | | 21.79 | 2.00 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| 2.50 | B | | | | (1.00) | | | |
| | | | | 20.79 | 3.00 | Complete at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP238 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP140 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.80m x 0.90m x 2.50m (L x W x D) | **Ground Level (mOD)** 23.34 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705897.8 E 776279 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| 0.50 | ES | | Water strike(1) at 1.10m. | | (1.40) | Possible MADE GROUND: Soft to firm brown slightly sandy slightly gravelly CLAY with medium cobble content | | ▽1 |
| | | | | 21.94 | 1.40 | Firm to stiff brown slightly sandy slightly gravelly CLAY with low cobble and boulder content | | |
| | | | | | (1.10) | | | |
| | | | | 20.84 | 2.50 | Obstruction- possible boulder<br>Terminated at 2.50m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit terminated at 2.50m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP240 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP145 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.70m x 0.90m x 2.80m (L x W x D) | **Ground Level (mOD)** 22.25 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705903.6 E 776254.4 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.50) | MADE GROUND: Crushed Rock Fill | | |
| | | | | 21.75 | 0.50 | Firm brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (1.70) | | | |
| | | | | 20.05 | 2.20 | Stiff brown sandy gravelly CLAY with low cobble content | | |
| | | | | | (0.60) | Obstruction- possible boulder | | |
| | | | | 19.45 | 2.80 | Terminated at 2.80m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit terminated at 2.80m BGL due to obstruction
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP145 |

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| | | | |
|---|---|---|---|
| **Site** Old Slane Road P2 | | | **Trial Pit Number** TP147 |
| **Machine :** 8.4T Excavator<br>**Method :** Trial Pit | **Dimensions** 2.70m x 0.90m x 2.80m (L x W x D) | **Ground Level (mOD)** 21.95 | **Client** | **Job Number** 13643-03-24 |
| | **Location** 705911.4 E 776228.7 N | **Dates** 16/04/2024 | **Engineer** Waterman Moylan | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.40) | MADE GROUND: Crushed Rock Fill | | |
| | | | | 21.55 | 0.40 | Soft to firm brown slightly sandy slightly gravelly CLAY | | |
| | | | | | (1.80) | | | |
| | | | | 19.75 | 2.20 | Stiff brown slightly sandy slightly gravelly CLAY with low cobble content | | |
| | | | | | (0.80) | | | |
| | | | | 18.95 | 3.00 | Terminated at 3.00m | | |

**Plan**

**Remarks**

No groundwater encountered
Trial pit stable
Trial pit complete at 3.00m BGL
Trial pit backfilled upon completion

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:25 | SB | 13643-03-24.TP147 |

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP100

## TP100

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP100

## TP100

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP101

## TP101

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP101

## TP101

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP102

## TP102

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP102

## TP102

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP103

## TP103

# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

## TP104

## TP104

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP104

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# Old Slane Road Phase 2 – Trial Pit Photographs

## TP105

## TP105

# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

## TP106

## TP106

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP106

## TP106

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP107

## TP107

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP107

## TP107

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP108

## TP108

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP108

## TP108

# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

## TP112

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# Old Slane Road Phase 2 – Trial Pit Photographs

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## TP112

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP113

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# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

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# Old Slane Road Phase 2 – Trial Pit Photographs

## TP145


## TP145

# Old Slane Road Phase 2 – Trial Pit Photographs

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## TP145

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP147

## TP147

# Old Slane Road Phase 2 – Trial Pit Photographs

## TP147

## TP147

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK02

## SK02

# Old Slane Road Phase 2 – Trial Pit Photographs

**SK02**

**SK02**

# Old Slane Road Phase 2 – Trial Pit Photographs

**SK03**

**SK03**

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK03

## SK03

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK04

## SK04

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK04

## SK04

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK05

## SK05

# Old Slane Road Phase 2 – Trial Pit Photographs

## SK05

## SK05

# **APPENDIX 3** – Soakaway Testing Records

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Web: www.gi.ie

## SK02

**Soakaway Test to BRE Digest 365**
**Trial Pit Dimensions: 1.60m x 0.90m x 1.50m (L x W x D)**

| Date | Time | Water level (m bgl) | |
|---|---|---|---|
| 12/04/2024 | 0 | -0.470 | |
| 12/04/2024 | 1 | -0.490 | |
| 12/04/2024 | 2 | -0.500 | |
| 12/04/2024 | 5 | -0.520 | |
| 12/04/2024 | 10 | -0.570 | |
| 12/04/2024 | 30 | -0.800 | |
| 12/04/2024 | 50 | -1.010 | |
| 12/04/2024 | 75 | -1.210 | |
| 12/04/2024 | 100 | -1.350 | |
| 12/04/2024 | 150 | -1.450 | *Filled once |

| Start depth | Depth of Pit | | Diff | 75% full | 25%full |
|---|---|---|---|---|---|
| **0.47** | **1.500** | | **1.030** | **0.7275** | **1.2425** |

| Length of pit (m) | Width of pit (m) | | 75-25Ht (m) | Vp75-25 (m3) |
|---|---|---|---|---|
| 1.600 | 0.900 | | 0.515 | 0.74 |
| Tp75-25 (from graph) (s) | | **3480** | 50% Eff Depth | ap50 (m2) |
| | | | 0.515 | 4.015 |

**f = 5.308E-05 m/s**

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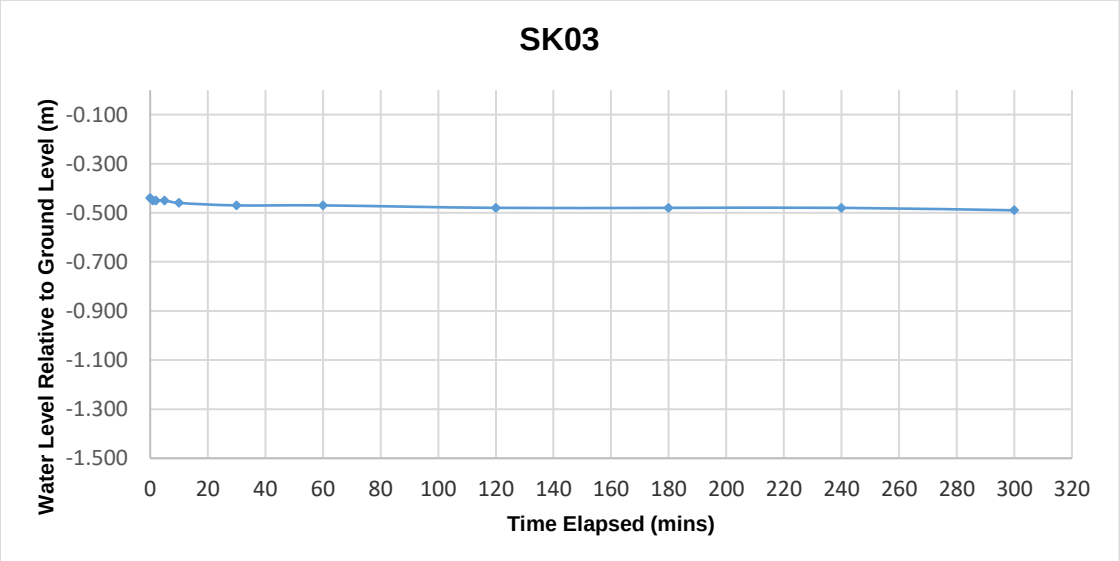
## SK03

**Soakaway Test to BRE Digest 365**
**Trial Pit Dimensions: 1.70m x 0.90m x 1.50m (L x W x D)**

| Date | Time | Water level (m bgl) |
|---|---|---|
| 12/04/2024 | 0 | -0.440 |
| 12/04/2024 | 1 | -0.450 |
| 12/04/2024 | 2 | -0.450 |
| 12/04/2024 | 5 | -0.450 |
| 12/04/2024 | 10 | -0.460 |
| 12/04/2024 | 30 | -0.470 |
| 12/04/2024 | 60 | -0.470 |
| 12/04/2024 | 120 | -0.480 |
| 12/04/2024 | 180 | -0.480 |
| 12/04/2024 | 240 | -0.480 |
| 12/04/2024 | 300 | -0.490 |
| | | |
| | | |
| | | |

***Soakaway failed - Pit backfilled**

| Start depth | Depth of Pit | Diff | 75% full | 25%full |
|---|---|---|---|---|
| 0.50 | 1.500 | 1.000 | 0.75 | 1.25 |



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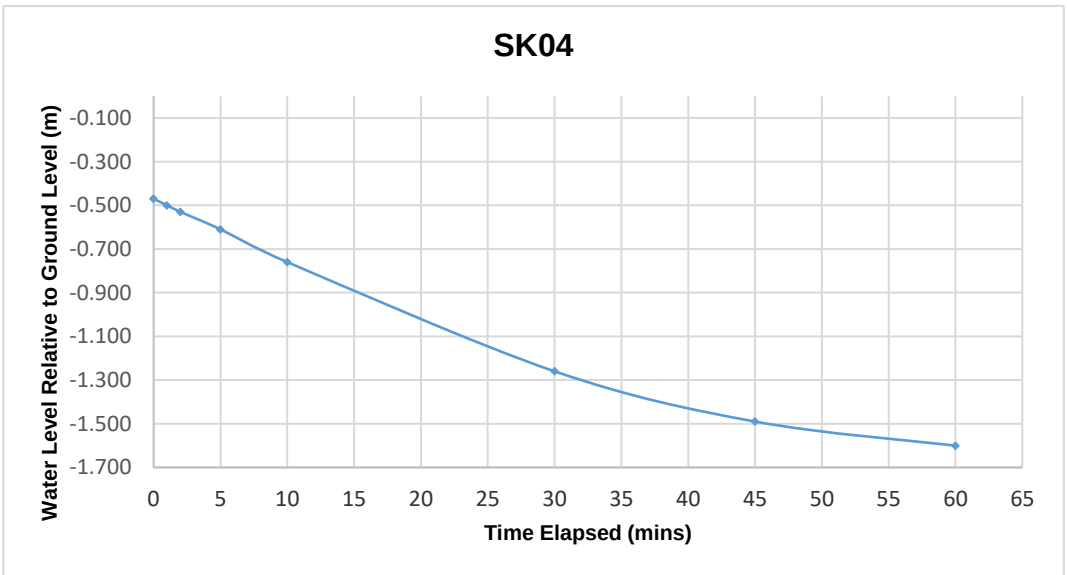
## SK04

**Soakaway Test to BRE Digest 365**
**Trial Pit Dimensions: 1.90m x 0.90m x 1.70m (L x W x D)**

| Date | Time | Water level (m bgl) | |
|---|---|---|---|
| 12/04/2024 | 0 | -0.470 | |
| 12/04/2024 | 1 | -0.500 | |
| 12/04/2024 | 2 | -0.530 | |
| 12/04/2024 | 5 | -0.610 | |
| 12/04/2024 | 10 | -0.760 | |
| 12/04/2024 | 30 | -1.260 | |
| 12/04/2024 | 45 | -1.490 | |
| 12/04/2024 | 60 | -1.600 | *Filled three times |

| Start depth | Depth of Pit | | Diff | 75% full | 25%full |
|---|---|---|---|---|---|
| **0.47** | **1.700** | | **1.230** | **0.7775** | **1.3925** |

| Length of pit (m) | Width of pit (m) | | 75-25Ht (m) | Vp75-25 (m3) |
|---|---|---|---|---|
| 1.900 | 0.900 | | 0.615 | 1.05 |
| Tp75-25 (from graph) (s) | | **1560** | 50% Eff Depth | ap50 (m2) |
| | | | 0.615 | 5.154 |
| **f =** | **1.308E-04** | **m/s** | | |



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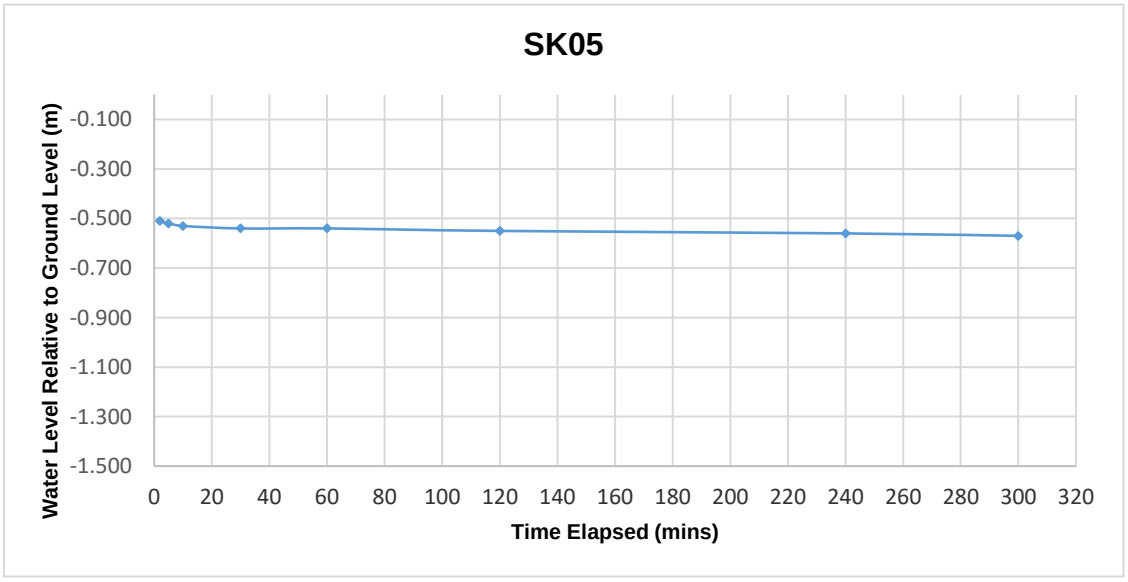
## SK05

**Soakaway Test to BRE Digest 365**
**Trial Pit Dimensions: 1.70m x 0.90m x 1.50m (L x W x D)**

| Date | Time | Water level (m bgl) |
|---|---|---|
| 12/04/2024 | 0 | -0.490 |
| 12/04/2024 | 1 | -0.500 |
| 12/04/2024 | 2 | -0.510 |
| 12/04/2024 | 5 | -0.520 |
| 12/04/2024 | 10 | -0.530 |
| 12/04/2024 | 30 | -0.540 |
| 12/04/2024 | 60 | -0.540 |
| 12/04/2024 | 120 | -0.550 |
| 12/04/2024 | 240 | -0.560 |
| 12/04/2024 | 300 | -0.570 |

***Soakaway failed - Pit backfilled**

| Start depth | Depth of Pit | Diff | 75% full | 25%full |
|---|---|---|---|---|
| 0.50 | 1.500 | 1.000 | 0.75 | 1.25 |



# **APPENDIX 4** – Dynamic Probe Records

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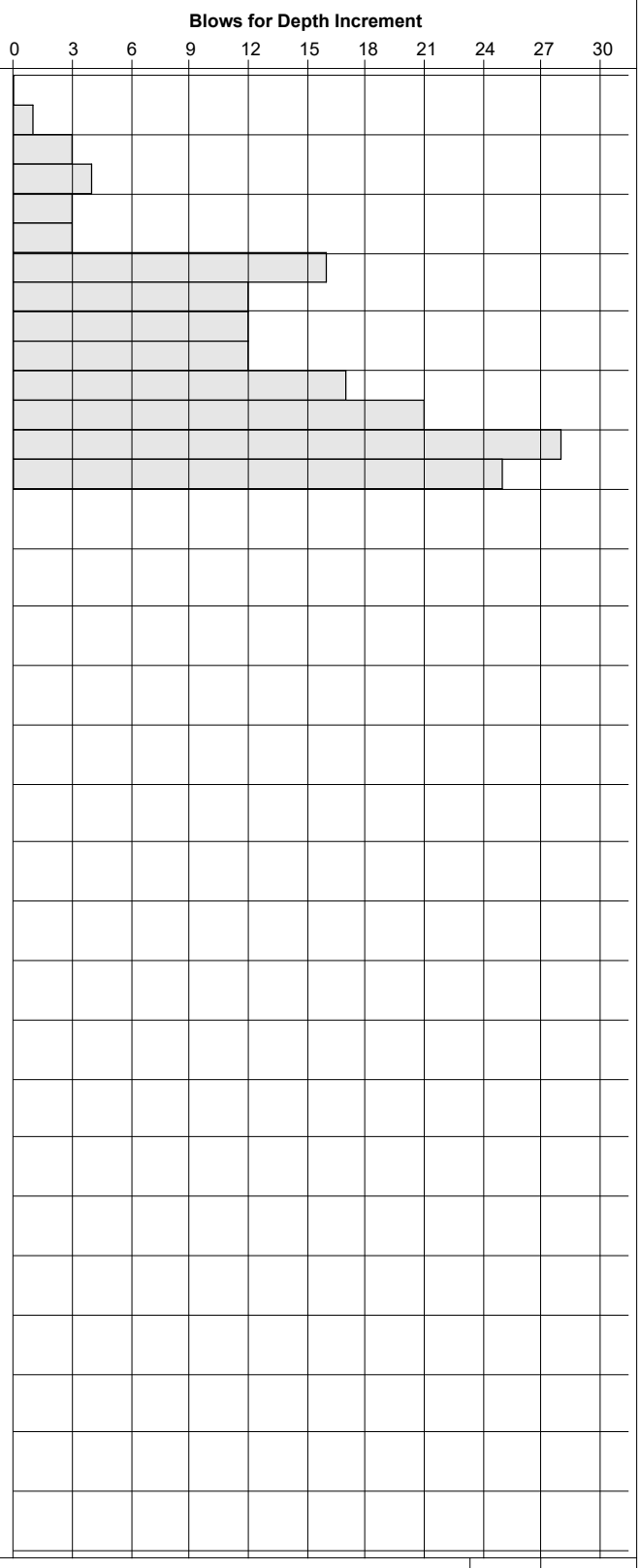
| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP100 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.62 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706033.1 E 776540 N | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.62 | 0.00 |
| 0.10-0.20 | 1 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 29.12 | 0.50 |
| 0.60-0.70 | 16 | | | |
| 0.70-0.80 | 12 | | | |
| 0.80-0.90 | 12 | | | |
| 0.90-1.00 | 12 | | | |
| 1.00-1.10 | 17 | | 28.62 | 1.00 |
| 1.10-1.20 | 21 | | | |
| 1.20-1.30 | 28 | | | |
| 1.30-1.40 | 25 | | | |
| | | | 28.12 | 1.50 |
| | | | 27.62 | 2.00 |
| | | | 27.12 | 2.50 |
| | | | 26.62 | 3.00 |
| | | | 26.12 | 3.50 |
| | | | 25.62 | 4.00 |
| | | | 25.12 | 4.50 |
| | | | 24.62 | 5.00 |




**Remarks**
Refusal at 1.40m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

**Figure No.**
13642-03-24.DP100

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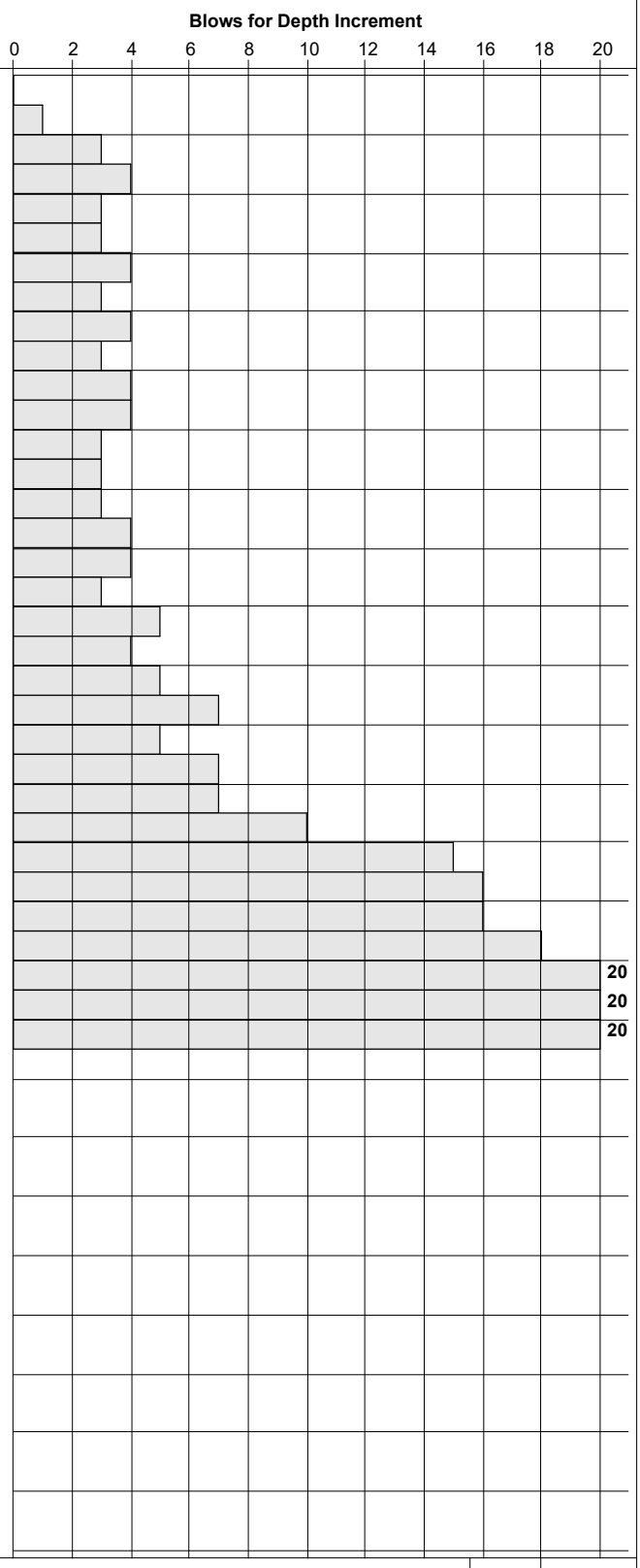
| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP101 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.83 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706013.5 E 776531.9 N | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.83 | 0.00 |
| 0.10-0.20 | 1 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 29.33 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 3 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 3 | | | |
| 1.00-1.10 | 4 | | 28.83 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 3 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 4 | | 28.33 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 3 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 5 | | 27.83 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 5 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 10 | | 27.33 | 2.50 |
| 2.60-2.70 | 15 | | | |
| 2.70-2.80 | 16 | | | |
| 2.80-2.90 | 16 | | | |
| 2.90-3.00 | 18 | | | |
| 3.00-3.10 | 20 | | 26.83 | 3.00 |
| 3.10-3.20 | 20 | | | |
| 3.20-3.30 | 20 | | | |
| | | | 26.33 | 3.50 |
| | | | 25.83 | 4.00 |
| | | | 25.33 | 4.50 |
| | | | 24.83 | 5.00 |




**Remarks**
Refusal at 3.30m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

**Figure No.**
13642-03-24.DP101

# Ground Investigations Ireland Ltd
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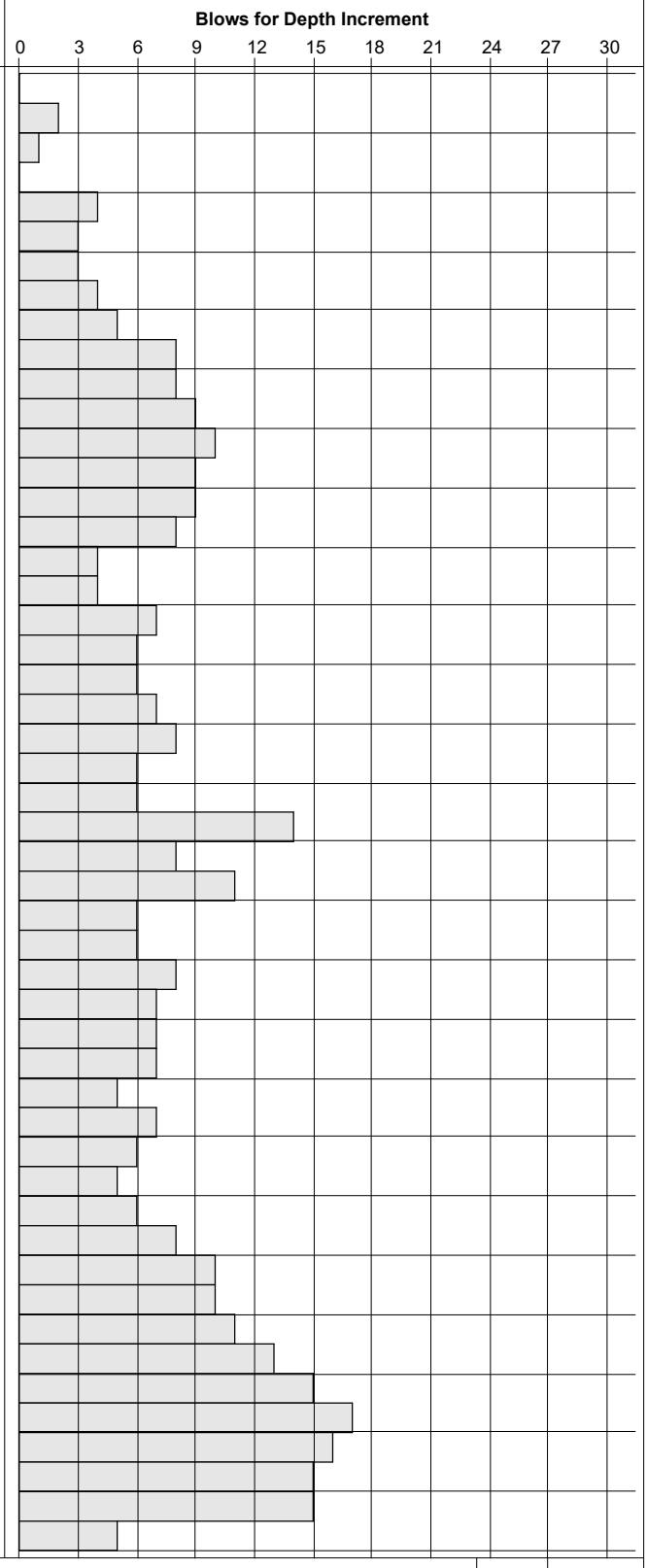
| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP102 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.08 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705987.6 E 776537.9 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 31.08 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 1 | | | |
| 0.30-0.40 | 0 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 3 | | 30.58 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 8 | | | |
| 1.00-1.10 | 8 | | 30.08 | 1.00 |
| 1.10-1.20 | 9 | | | |
| 1.20-1.30 | 10 | | | |
| 1.30-1.40 | 9 | | | |
| 1.40-1.50 | 9 | | | |
| 1.50-1.60 | 8 | | 29.58 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 6 | | | |
| 2.00-2.10 | 6 | | 29.08 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 8 | | | |
| 2.30-2.40 | 6 | | | |
| 2.40-2.50 | 6 | | | |
| 2.50-2.60 | 14 | | 28.58 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 11 | | | |
| 2.80-2.90 | 6 | | | |
| 2.90-3.00 | 6 | | | |
| 3.00-3.10 | 8 | | 28.08 | 3.00 |
| 3.10-3.20 | 7 | | | |
| 3.20-3.30 | 7 | | | |
| 3.30-3.40 | 7 | | | |
| 3.40-3.50 | 5 | | | |
| 3.50-3.60 | 7 | | 27.58 | 3.50 |
| 3.60-3.70 | 6 | | | |
| 3.70-3.80 | 5 | | | |
| 3.80-3.90 | 6 | | | |
| 3.90-4.00 | 8 | | | |
| 4.00-4.10 | 10 | | 27.08 | 4.00 |
| 4.10-4.20 | 10 | | | |
| 4.20-4.30 | 11 | | | |
| 4.30-4.40 | 13 | | | |
| 4.40-4.50 | 15 | | | |
| 4.50-4.60 | 17 | | 26.58 | 4.50 |
| 4.60-4.70 | 16 | | | |
| 4.70-4.80 | 15 | | | |
| 4.80-4.90 | 15 | | | |
| 4.90-5.00 | 5 | | 26.08 | 5.00 |




**Remarks**
Refusal at 6.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

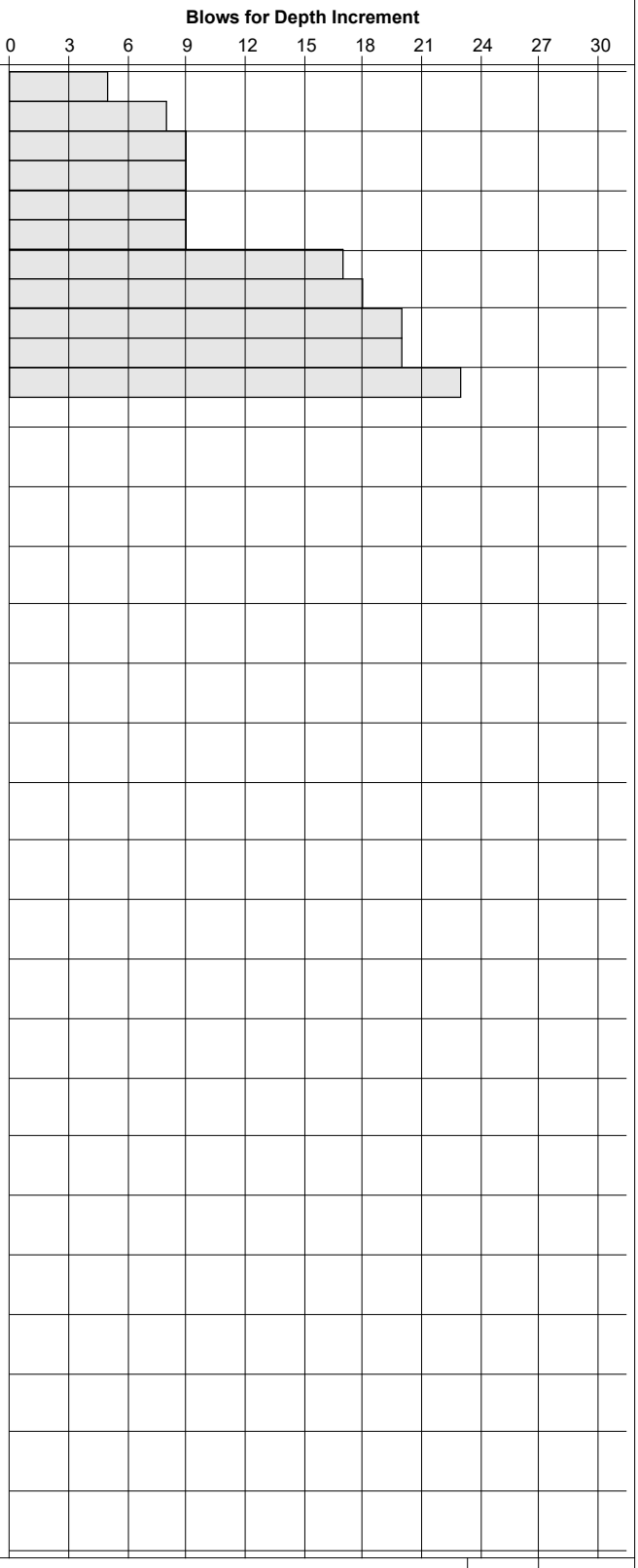
**Figure No.**
13642-03-24.DP102

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP102 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.08 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705987.6 E 776537.9 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 5 | | 26.08 | 5.00 |
| 5.10-5.20 | 8 | | | |
| 5.20-5.30 | 9 | | | |
| 5.30-5.40 | 9 | | | |
| 5.40-5.50 | 9 | | | |
| 5.50-5.60 | 9 | | 25.58 | 5.50 |
| 5.60-5.70 | 17 | | | |
| 5.70-5.80 | 18 | | | |
| 5.80-5.90 | 20 | | | |
| 5.90-6.00 | 20 | | | |
| 6.00-6.10 | 23 | | 25.08 | 6.00 |
| | | | 24.58 | 6.50 |
| | | | 24.08 | 7.00 |
| | | | 23.58 | 7.50 |
| | | | 23.08 | 8.00 |
| | | | 22.58 | 8.50 |
| | | | 22.08 | 9.00 |
| | | | 21.58 | 9.50 |
| | | | 21.08 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

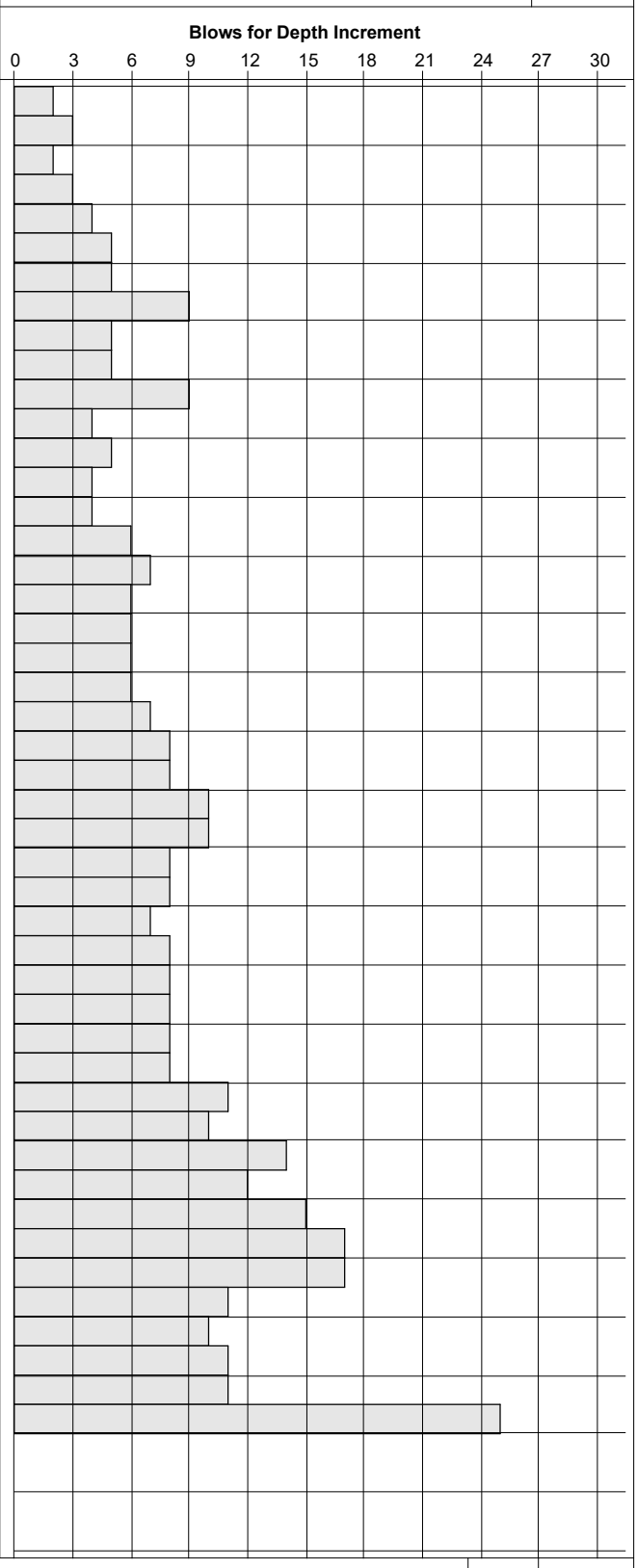
**Figure No.**
13642-03-24.DP102

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP103 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.64 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705956.1 E 776540.1 N | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 31.64 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 5 | | 31.14 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 9 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 9 | | 30.64 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 4 | | | |
| 1.50-1.60 | 6 | | 30.14 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 6 | | | |
| 1.90-2.00 | 6 | | | |
| 2.00-2.10 | 6 | | 29.64 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 8 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 10 | | | |
| 2.50-2.60 | 10 | | 29.14 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 8 | | | |
| 2.80-2.90 | 7 | | | |
| 2.90-3.00 | 8 | | | |
| 3.00-3.10 | 8 | | 28.64 | 3.00 |
| 3.10-3.20 | 8 | | | |
| 3.20-3.30 | 8 | | | |
| 3.30-3.40 | 8 | | | |
| 3.40-3.50 | 11 | | | |
| 3.50-3.60 | 10 | | 28.14 | 3.50 |
| 3.60-3.70 | 14 | | | |
| 3.70-3.80 | 12 | | | |
| 3.80-3.90 | 15 | | | |
| 3.90-4.00 | 17 | | | |
| 4.00-4.10 | 17 | | 27.64 | 4.00 |
| 4.10-4.20 | 11 | | | |
| 4.20-4.30 | 10 | | | |
| 4.30-4.40 | 11 | | | |
| 4.40-4.50 | 11 | | | |
| 4.50-4.60 | 25 | | 27.14 | 4.50 |
| | | | 26.64 | 5.00 |




**Remarks**
Refusal at 4.60m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

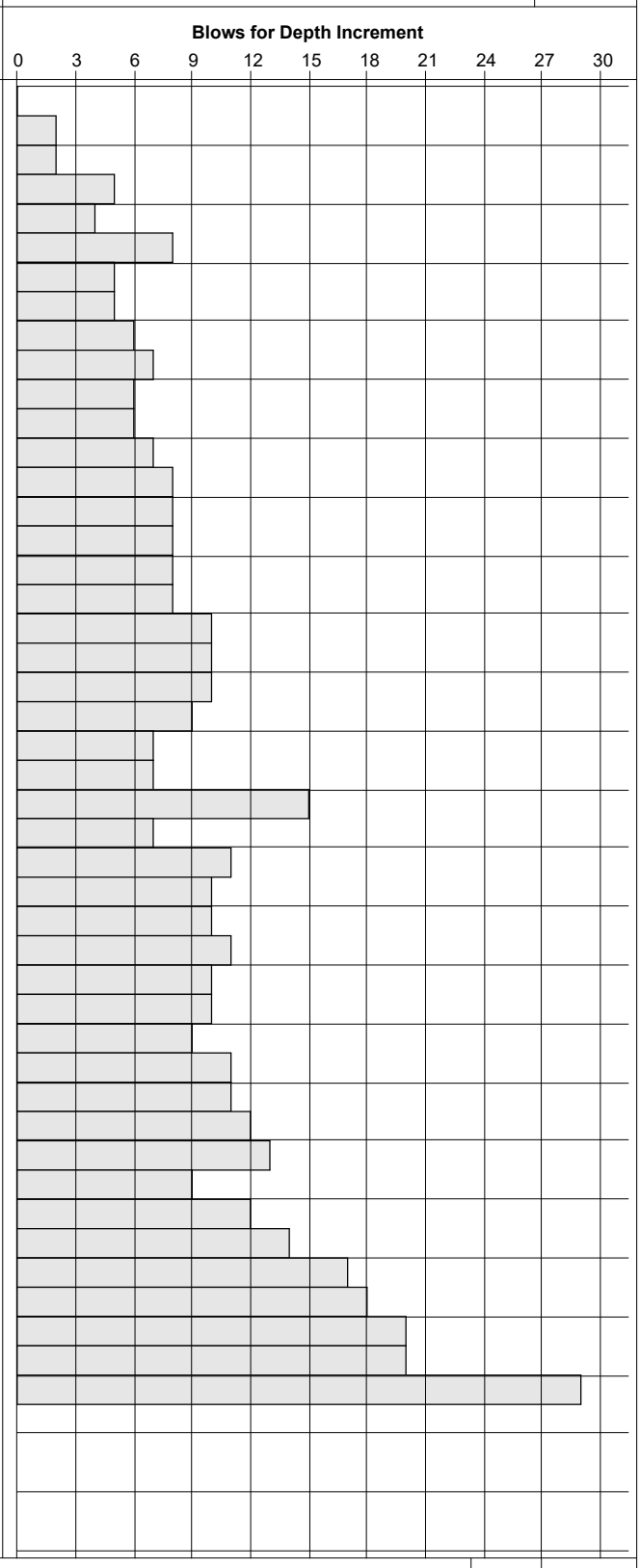
**Figure No.**
13642-03-24.DP103

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP104 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.70 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705943.9 E 776535.4 N | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 31.70 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 5 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 8 | | 31.20 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 7 | | | |
| 1.00-1.10 | 6 | | 30.70 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 8 | | | |
| 1.40-1.50 | 8 | | | |
| 1.50-1.60 | 8 | | 30.20 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 8 | | | |
| 1.80-1.90 | 10 | | | |
| 1.90-2.00 | 10 | | | |
| 2.00-2.10 | 10 | | 29.70 | 2.00 |
| 2.10-2.20 | 9 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 15 | | | |
| 2.50-2.60 | 7 | | 29.20 | 2.50 |
| 2.60-2.70 | 11 | | | |
| 2.70-2.80 | 10 | | | |
| 2.80-2.90 | 10 | | | |
| 2.90-3.00 | 11 | | | |
| 3.00-3.10 | 10 | | 28.70 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 9 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 11 | | | |
| 3.50-3.60 | 12 | | 28.20 | 3.50 |
| 3.60-3.70 | 13 | | | |
| 3.70-3.80 | 9 | | | |
| 3.80-3.90 | 12 | | | |
| 3.90-4.00 | 14 | | | |
| 4.00-4.10 | 17 | | 27.70 | 4.00 |
| 4.10-4.20 | 18 | | | |
| 4.20-4.30 | 20 | | | |
| 4.30-4.40 | 20 | | | |
| 4.40-4.50 | 29 | | | |
| | | | 27.20 | 4.50 |
| | | | 26.70 | 5.00 |




**Remarks**
Refusal at 4.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

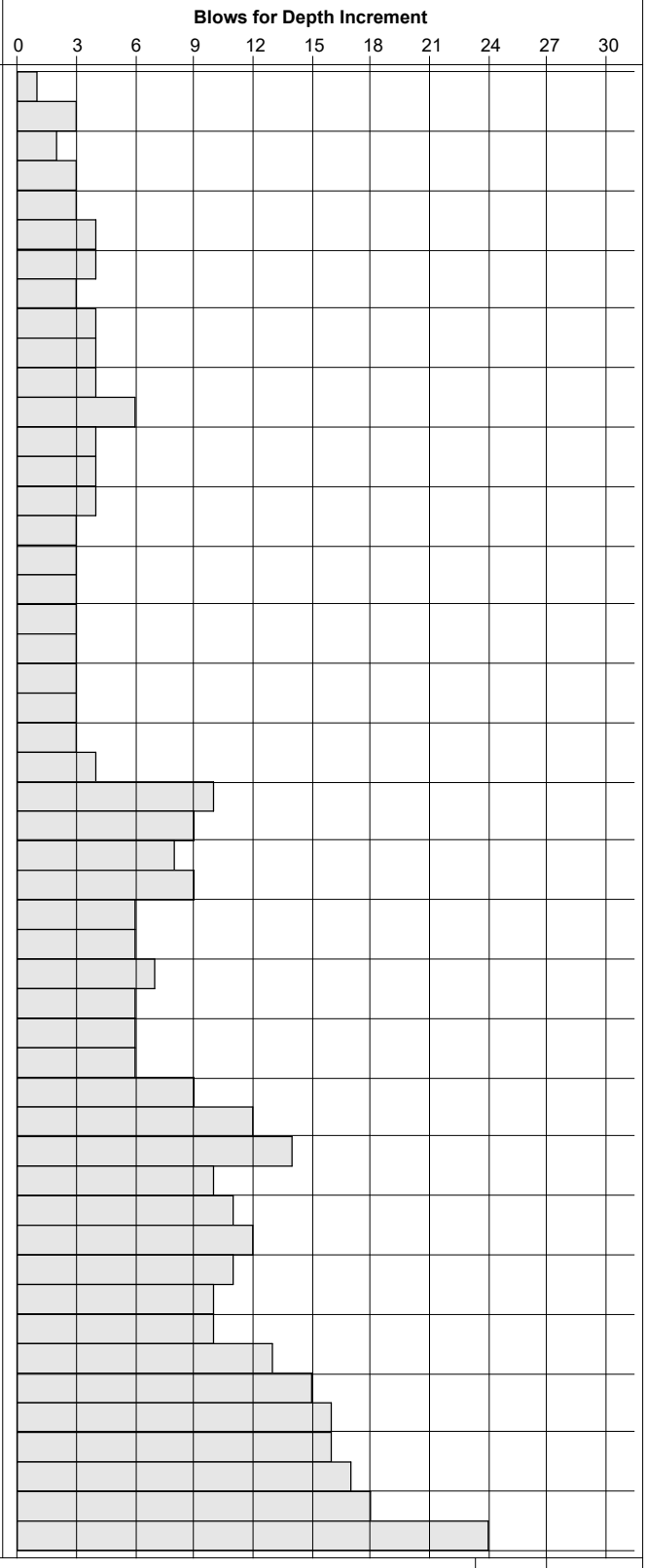
**Figure No.**
13642-03-24.DP104

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP105 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 32.28 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705898.4 E 776527.1 N | 15/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 1 | | 32.28 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 31.78 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 3 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 31.28 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 4 | | | |
| 1.50-1.60 | 3 | | 30.78 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 3 | | | |
| 1.80-1.90 | 3 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 30.28 | 2.00 |
| 2.10-2.20 | 3 | | | |
| 2.20-2.30 | 3 | | | |
| 2.30-2.40 | 4 | | | |
| 2.40-2.50 | 10 | | | |
| 2.50-2.60 | 9 | | 29.78 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 9 | | | |
| 2.80-2.90 | 6 | | | |
| 2.90-3.00 | 6 | | | |
| 3.00-3.10 | 7 | | 29.28 | 3.00 |
| 3.10-3.20 | 6 | | | |
| 3.20-3.30 | 6 | | | |
| 3.30-3.40 | 6 | | | |
| 3.40-3.50 | 9 | | | |
| 3.50-3.60 | 12 | | 28.78 | 3.50 |
| 3.60-3.70 | 14 | | | |
| 3.70-3.80 | 10 | | | |
| 3.80-3.90 | 11 | | | |
| 3.90-4.00 | 12 | | | |
| 4.00-4.10 | 11 | | 28.28 | 4.00 |
| 4.10-4.20 | 10 | | | |
| 4.20-4.30 | 10 | | | |
| 4.30-4.40 | 13 | | | |
| 4.40-4.50 | 15 | | | |
| 4.50-4.60 | 16 | | 27.78 | 4.50 |
| 4.60-4.70 | 16 | | | |
| 4.70-4.80 | 17 | | | |
| 4.80-4.90 | 18 | | | |
| 4.90-5.00 | 24 | | 27.28 | 5.00 |




**Remarks**
Refusal at 5.20m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

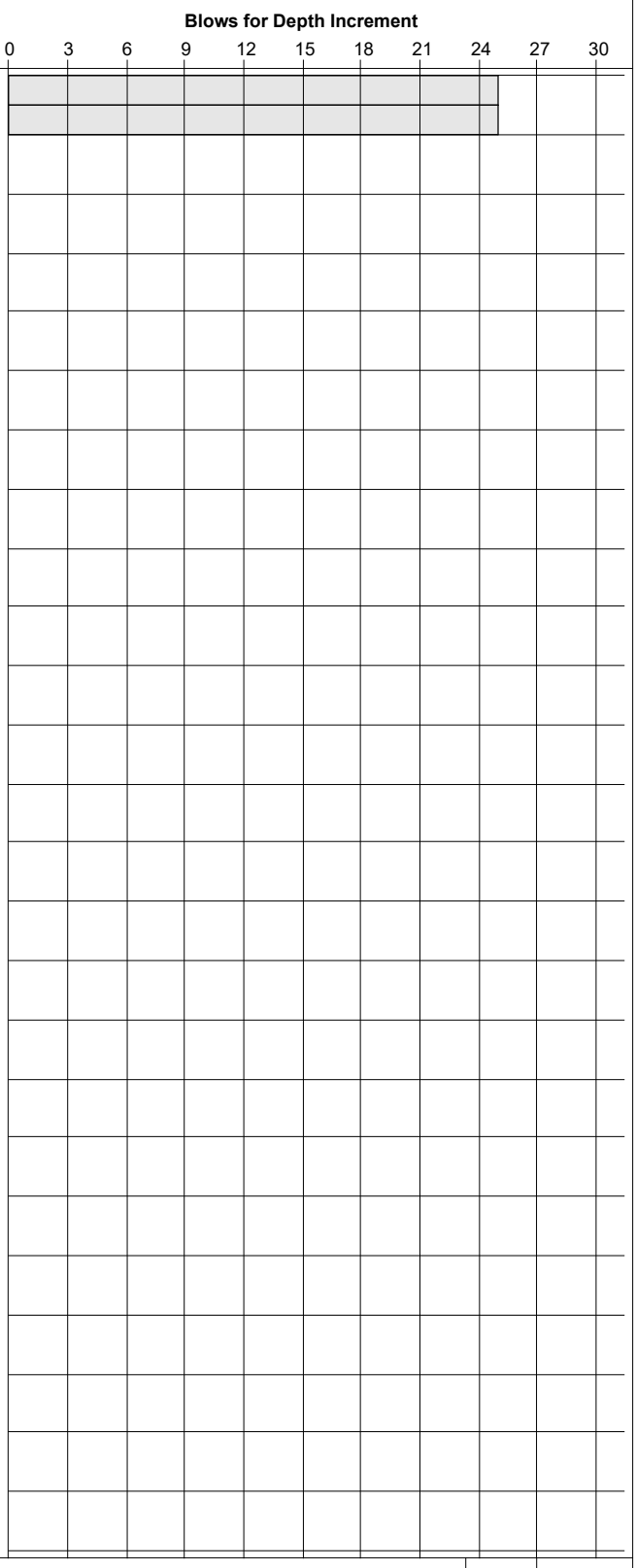
**Figure No.**
13642-03-24.DP132

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP105 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 32.28 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705898.4 E 776527.1 N | 15/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 25 | | 27.28 | 5.00 |
| 5.10-5.20 | 25 | | | |
| | | | 26.78 | 5.50 |
| | | | 26.28 | 6.00 |
| | | | 25.78 | 6.50 |
| | | | 25.28 | 7.00 |
| | | | 24.78 | 7.50 |
| | | | 24.28 | 8.00 |
| | | | 23.78 | 8.50 |
| | | | 23.28 | 9.00 |
| | | | 22.78 | 9.50 |
| | | | 22.28 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

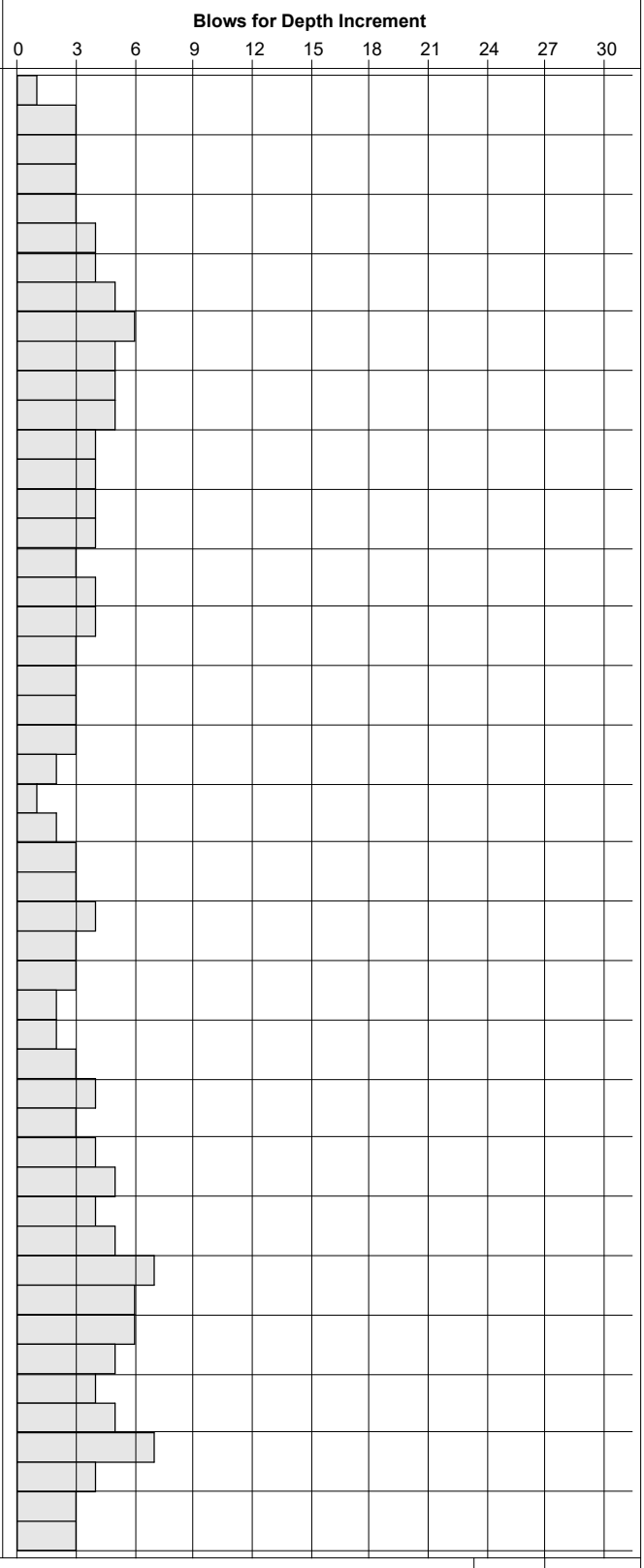
**Figure No.**
13642-03-24.DP132

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP106 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.32 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705939.3 E 776517.9 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 1 | | 31.32 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 30.82 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 5 | | 30.32 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 4 | | | |
| 1.50-1.60 | 4 | | 29.82 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 29.32 | 2.00 |
| 2.10-2.20 | 3 | | | |
| 2.20-2.30 | 3 | | | |
| 2.30-2.40 | 2 | | | |
| 2.40-2.50 | 1 | | | |
| 2.50-2.60 | 2 | | 28.82 | 2.50 |
| 2.60-2.70 | 3 | | | |
| 2.70-2.80 | 3 | | | |
| 2.80-2.90 | 4 | | | |
| 2.90-3.00 | 3 | | | |
| 3.00-3.10 | 3 | | 28.32 | 3.00 |
| 3.10-3.20 | 2 | | | |
| 3.20-3.30 | 2 | | | |
| 3.30-3.40 | 3 | | | |
| 3.40-3.50 | 4 | | | |
| 3.50-3.60 | 3 | | 27.82 | 3.50 |
| 3.60-3.70 | 4 | | | |
| 3.70-3.80 | 5 | | | |
| 3.80-3.90 | 4 | | | |
| 3.90-4.00 | 5 | | | |
| 4.00-4.10 | 7 | | 27.32 | 4.00 |
| 4.10-4.20 | 6 | | | |
| 4.20-4.30 | 6 | | | |
| 4.30-4.40 | 5 | | | |
| 4.40-4.50 | 4 | | | |
| 4.50-4.60 | 5 | | 26.82 | 4.50 |
| 4.60-4.70 | 7 | | | |
| 4.70-4.80 | 4 | | | |
| 4.80-4.90 | 3 | | | |
| 4.90-5.00 | 3 | | 26.32 | 5.00 |




**Remarks**
Refusal at 6.20m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

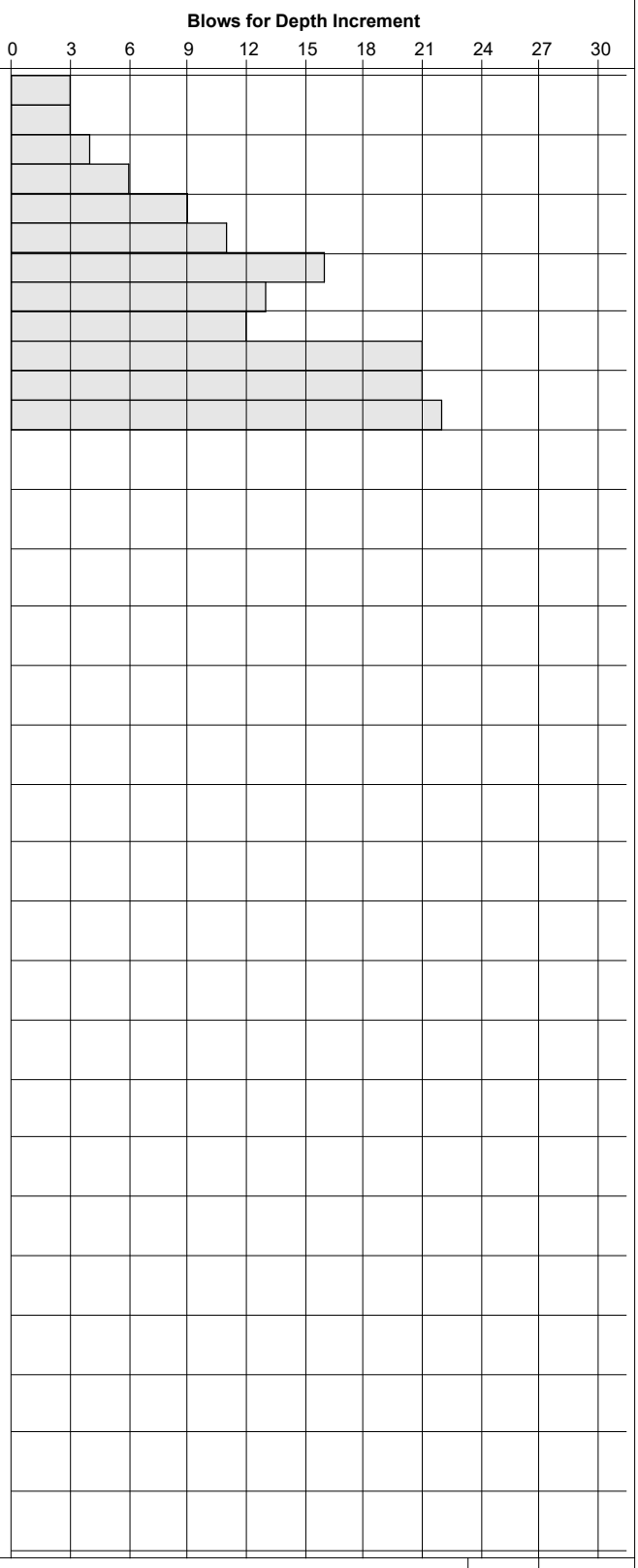
**Figure No.**
13642-03-24.DP106

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP106 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.32 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705939.3 E 776517.9 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 3 | | 26.32 | 5.00 |
| 5.10-5.20 | 3 | | | |
| 5.20-5.30 | 4 | | | |
| 5.30-5.40 | 6 | | | |
| 5.40-5.50 | 9 | | | |
| 5.50-5.60 | 11 | | 25.82 | 5.50 |
| 5.60-5.70 | 16 | | | |
| 5.70-5.80 | 13 | | | |
| 5.80-5.90 | 12 | | | |
| 5.90-6.00 | 21 | | | |
| 6.00-6.10 | 21 | | 25.32 | 6.00 |
| 6.10-6.20 | 22 | | | |
| | | | 24.82 | 6.50 |
| | | | 24.32 | 7.00 |
| | | | 23.82 | 7.50 |
| | | | 23.32 | 8.00 |
| | | | 22.82 | 8.50 |
| | | | 22.32 | 9.00 |
| | | | 21.82 | 9.50 |
| | | | 21.32 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

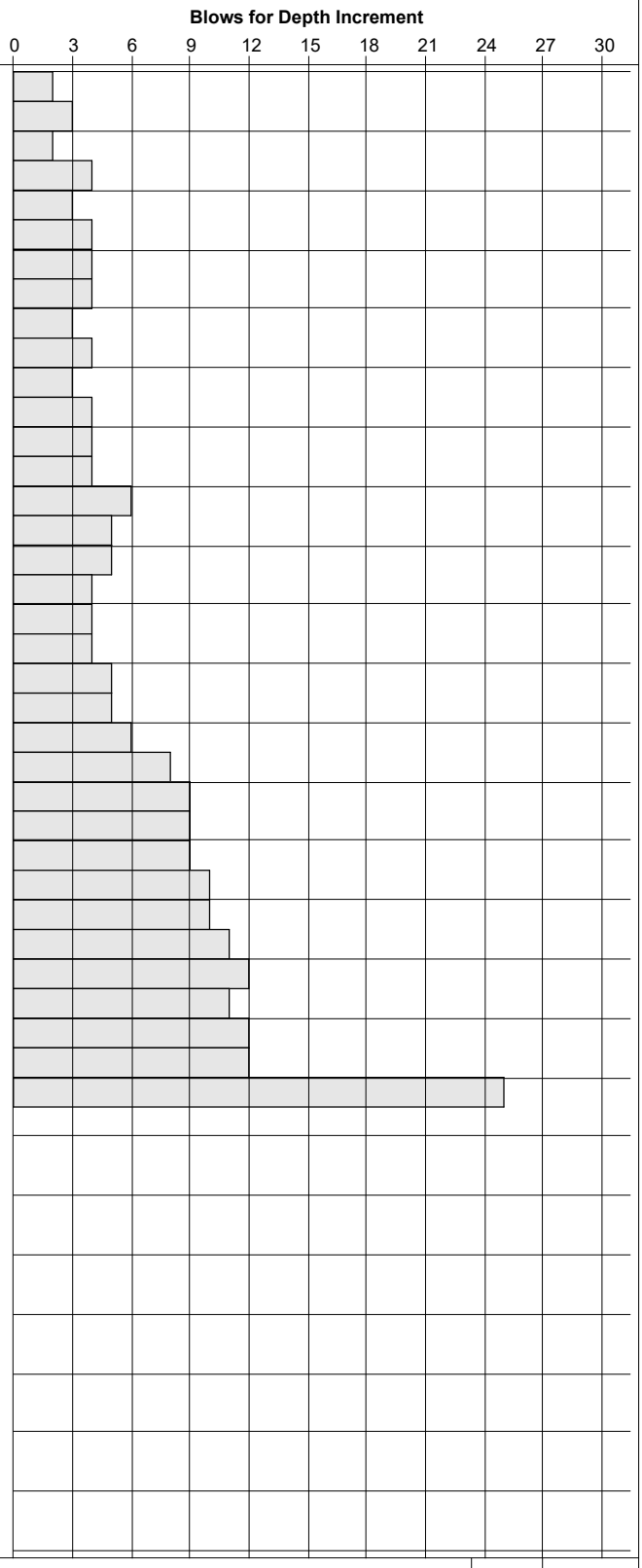
**Figure No.**
13642-03-24.DP106

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP107 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 30.86 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705968.2 E 776517.9 N | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 30.86 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 30.36 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 3 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 3 | | 29.86 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 6 | | | |
| 1.50-1.60 | 5 | | 29.36 | 1.50 |
| 1.60-1.70 | 5 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 5 | | 28.86 | 2.00 |
| 2.10-2.20 | 5 | | | |
| 2.20-2.30 | 6 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 9 | | | |
| 2.50-2.60 | 9 | | 28.36 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 10 | | | |
| 2.80-2.90 | 10 | | | |
| 2.90-3.00 | 11 | | | |
| 3.00-3.10 | 12 | | 27.86 | 3.00 |
| 3.10-3.20 | 11 | | | |
| 3.20-3.30 | 12 | | | |
| 3.30-3.40 | 12 | | | |
| 3.40-3.50 | 25 | | 27.36 | 3.50 |
| | | | 26.86 | 4.00 |
| | | | 26.36 | 4.50 |
| | | | 25.86 | 5.00 |




**Remarks**
Refusal at 3.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

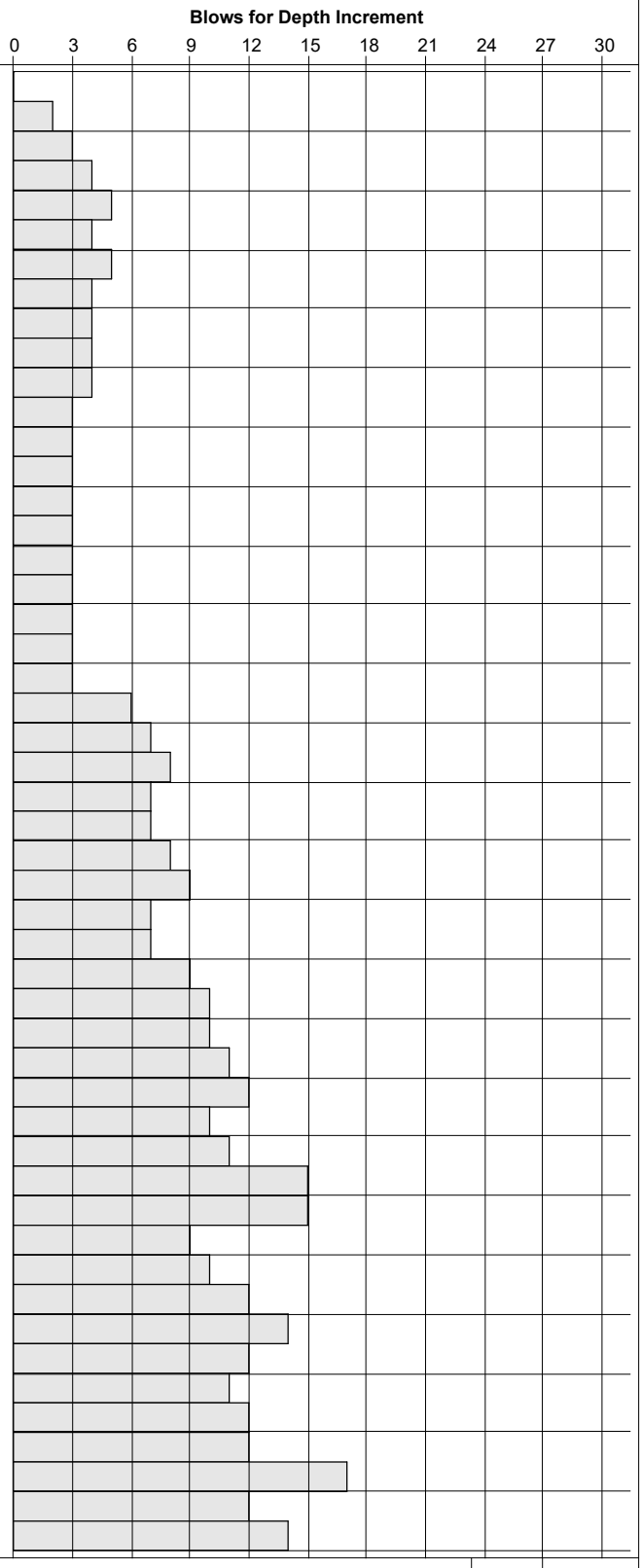
**Figure No.**
13642-03-24.DP107

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP108 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.76 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705993.4 E 776505.7 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.76 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 5 | | | |
| 0.50-0.60 | 4 | | 29.26 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 28.76 | 1.00 |
| 1.10-1.20 | 3 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 3 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 3 | | 28.26 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 3 | | | |
| 1.80-1.90 | 3 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 27.76 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 7 | | 27.26 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 9 | | | |
| 2.80-2.90 | 7 | | | |
| 2.90-3.00 | 7 | | | |
| 3.00-3.10 | 9 | | 26.76 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 10 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 12 | | | |
| 3.50-3.60 | 10 | | 26.26 | 3.50 |
| 3.60-3.70 | 11 | | | |
| 3.70-3.80 | 15 | | | |
| 3.80-3.90 | 15 | | | |
| 3.90-4.00 | 9 | | | |
| 4.00-4.10 | 10 | | 25.76 | 4.00 |
| 4.10-4.20 | 12 | | | |
| 4.20-4.30 | 14 | | | |
| 4.30-4.40 | 12 | | | |
| 4.40-4.50 | 11 | | | |
| 4.50-4.60 | 12 | | 25.26 | 4.50 |
| 4.60-4.70 | 12 | | | |
| 4.70-4.80 | 17 | | | |
| 4.80-4.90 | 12 | | | |
| 4.90-5.00 | 14 | | 24.76 | 5.00 |




**Remarks**
Refusal at 5.60m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

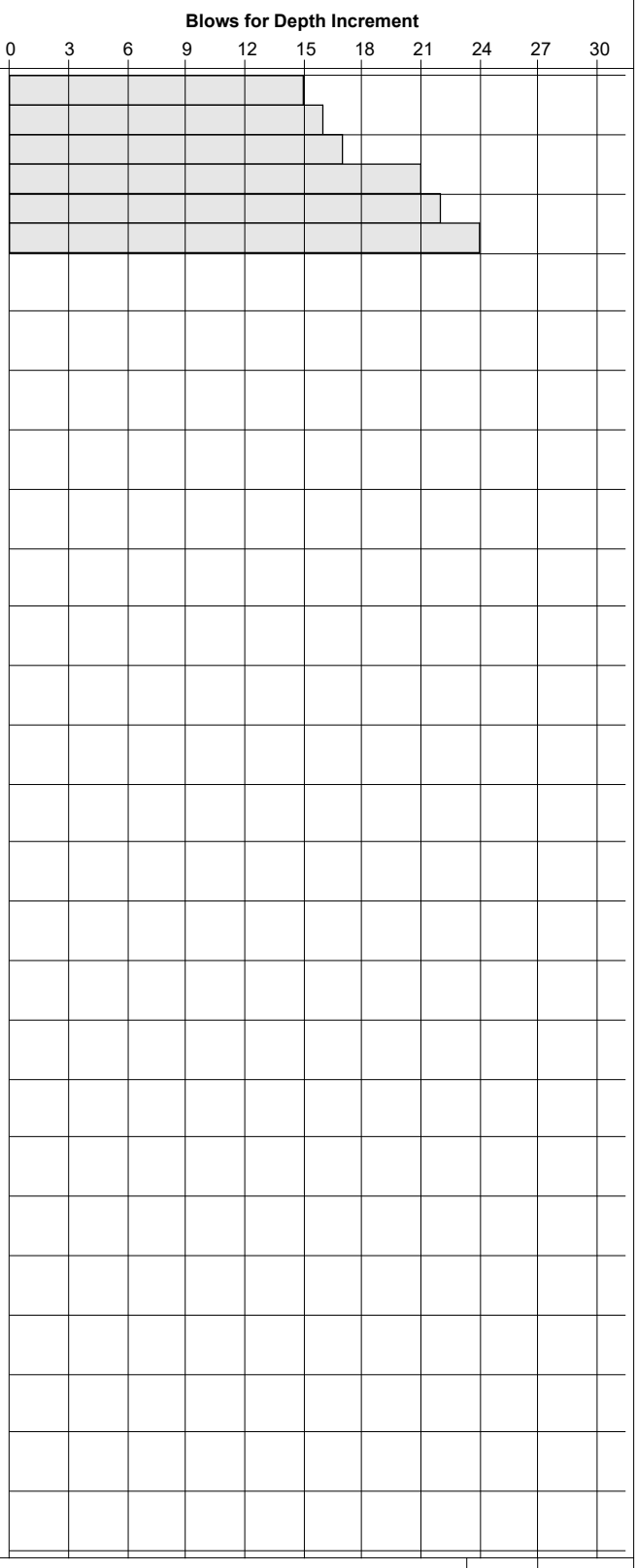
**Figure No.**
13642-03-24.DP108

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP108 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.76 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705993.4 E 776505.7 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 15 | | 24.76 | 5.00 |
| 5.10-5.20 | 16 | | | |
| 5.20-5.30 | 17 | | | |
| 5.30-5.40 | 21 | | | |
| 5.40-5.50 | 22 | | 24.26 | 5.50 |
| 5.50-5.60 | 24 | | | |
| | | | 23.76 | 6.00 |
| | | | 23.26 | 6.50 |
| | | | 22.76 | 7.00 |
| | | | 22.26 | 7.50 |
| | | | 21.76 | 8.00 |
| | | | 21.26 | 8.50 |
| | | | 20.76 | 9.00 |
| | | | 20.26 | 9.50 |
| | | | 19.76 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

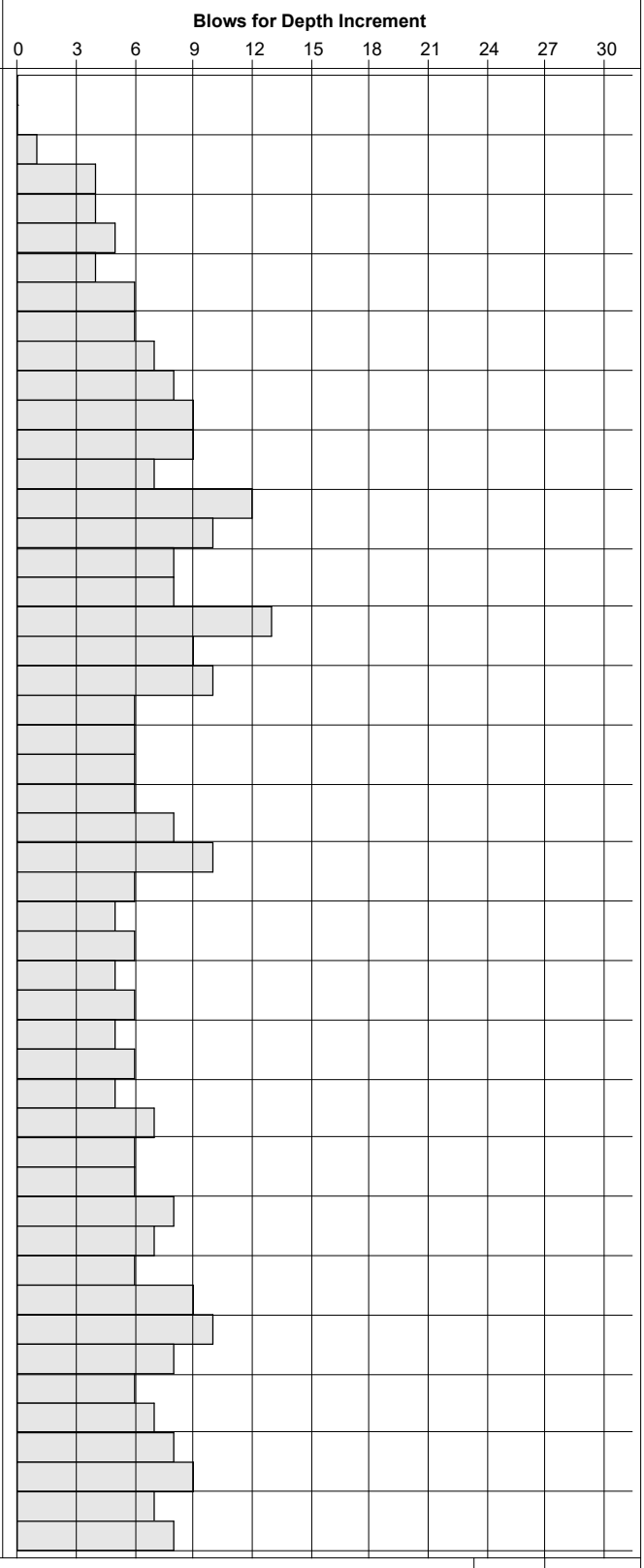
**Figure No.**
13642-03-24.DP108

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP109 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.08 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706022.2 E 776506.7 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.08 | 0.00 |
| 0.10-0.20 | 0 | | | |
| 0.20-0.30 | 1 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 5 | | 27.58 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 7 | | | |
| 1.00-1.10 | 8 | | 27.08 | 1.00 |
| 1.10-1.20 | 9 | | | |
| 1.20-1.30 | 9 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 12 | | | |
| 1.50-1.60 | 10 | | 26.58 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 8 | | | |
| 1.80-1.90 | 13 | | | |
| 1.90-2.00 | 9 | | | |
| 2.00-2.10 | 10 | | 26.08 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 6 | | | |
| 2.30-2.40 | 6 | | | |
| 2.40-2.50 | 6 | | | |
| 2.50-2.60 | 8 | | 25.58 | 2.50 |
| 2.60-2.70 | 10 | | | |
| 2.70-2.80 | 6 | | | |
| 2.80-2.90 | 5 | | | |
| 2.90-3.00 | 6 | | | |
| 3.00-3.10 | 5 | | 25.08 | 3.00 |
| 3.10-3.20 | 6 | | | |
| 3.20-3.30 | 5 | | | |
| 3.30-3.40 | 6 | | | |
| 3.40-3.50 | 5 | | | |
| 3.50-3.60 | 7 | | 24.58 | 3.50 |
| 3.60-3.70 | 6 | | | |
| 3.70-3.80 | 6 | | | |
| 3.80-3.90 | 8 | | | |
| 3.90-4.00 | 7 | | | |
| 4.00-4.10 | 6 | | 24.08 | 4.00 |
| 4.10-4.20 | 9 | | | |
| 4.20-4.30 | 10 | | | |
| 4.30-4.40 | 8 | | | |
| 4.40-4.50 | 6 | | | |
| 4.50-4.60 | 7 | | 23.58 | 4.50 |
| 4.60-4.70 | 8 | | | |
| 4.70-4.80 | 9 | | | |
| 4.80-4.90 | 7 | | | |
| 4.90-5.00 | 8 | | 23.08 | 5.00 |




**Remarks**
Refusal at 7.00m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

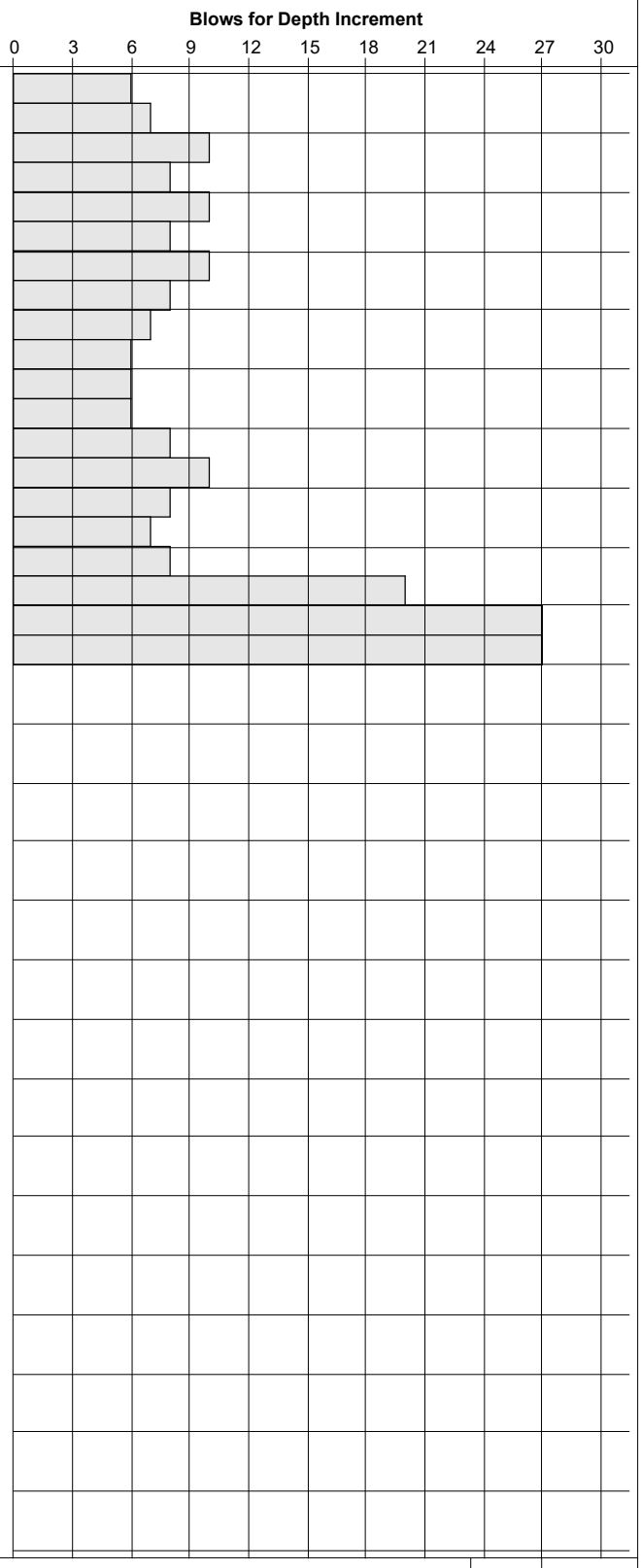
**Figure No.**
13642-03-24.DP109

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP109 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.08 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706022.2 E 776506.7 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 6 | | 23.08 | 5.00 |
| 5.10-5.20 | 7 | | | |
| 5.20-5.30 | 10 | | | |
| 5.30-5.40 | 8 | | | |
| 5.40-5.50 | 10 | | | |
| 5.50-5.60 | 8 | | 22.58 | 5.50 |
| 5.60-5.70 | 10 | | | |
| 5.70-5.80 | 8 | | | |
| 5.80-5.90 | 7 | | | |
| 5.90-6.00 | 6 | | | |
| 6.00-6.10 | 6 | | 22.08 | 6.00 |
| 6.10-6.20 | 6 | | | |
| 6.20-6.30 | 8 | | | |
| 6.30-6.40 | 10 | | | |
| 6.40-6.50 | 8 | | | |
| 6.50-6.60 | 7 | | 21.58 | 6.50 |
| 6.60-6.70 | 8 | | | |
| 6.70-6.80 | 20 | | | |
| 6.80-6.90 | 27 | | | |
| 6.90-7.00 | 27 | | 21.08 | 7.00 |
| | | | 20.58 | 7.50 |
| | | | 20.08 | 8.00 |
| | | | 19.58 | 8.50 |
| | | | 19.08 | 9.00 |
| | | | 18.58 | 9.50 |
| | | | 18.08 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

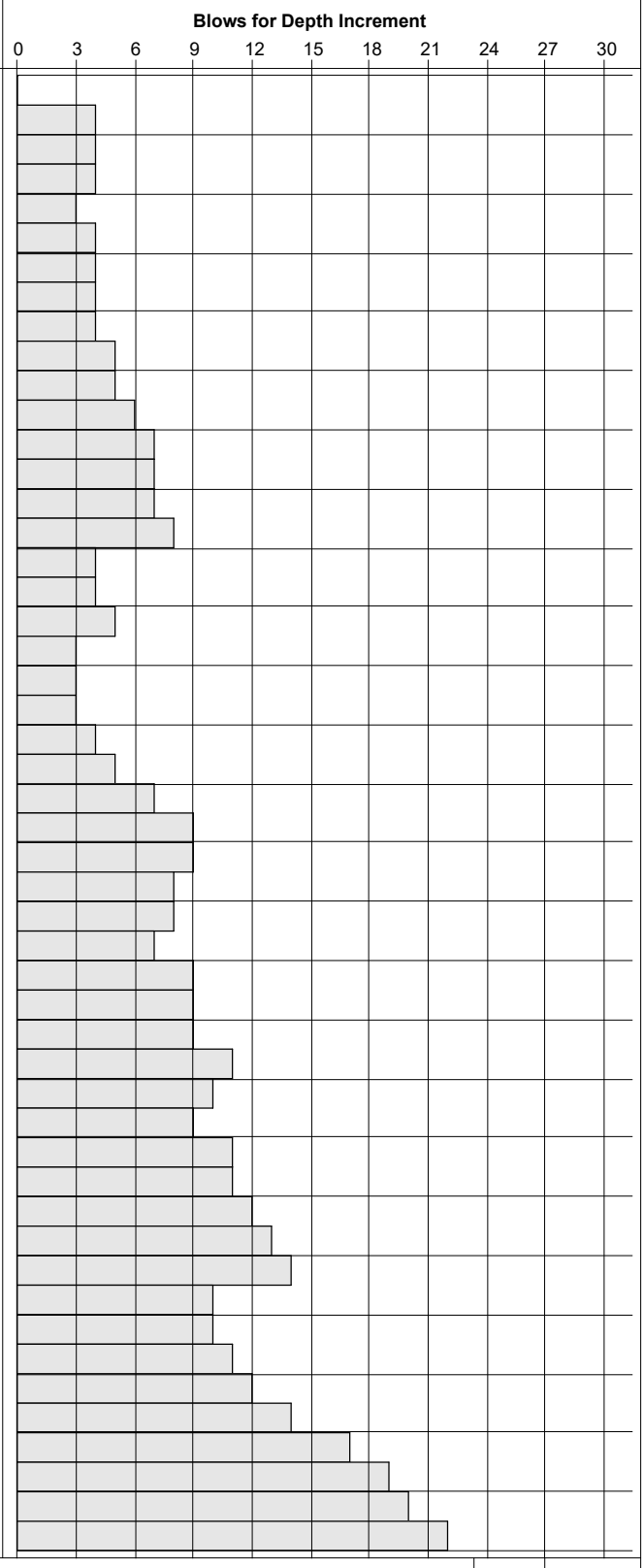
**Figure No.**
13642-03-24.DP109

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP110 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.58 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705888.5 E 776497.3 N | 15/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 31.58 | 0.00 |
| 0.10-0.20 | 4 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 31.08 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 5 | | 30.58 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 8 | | 30.08 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 29.58 | 2.00 |
| 2.10-2.20 | 3 | | | |
| 2.20-2.30 | 4 | | | |
| 2.30-2.40 | 5 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 9 | | 29.08 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 8 | | | |
| 2.80-2.90 | 8 | | | |
| 2.90-3.00 | 7 | | | |
| 3.00-3.10 | 9 | | 28.58 | 3.00 |
| 3.10-3.20 | 9 | | | |
| 3.20-3.30 | 9 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 10 | | | |
| 3.50-3.60 | 9 | | 28.08 | 3.50 |
| 3.60-3.70 | 11 | | | |
| 3.70-3.80 | 11 | | | |
| 3.80-3.90 | 12 | | | |
| 3.90-4.00 | 13 | | | |
| 4.00-4.10 | 14 | | 27.58 | 4.00 |
| 4.10-4.20 | 10 | | | |
| 4.20-4.30 | 10 | | | |
| 4.30-4.40 | 11 | | | |
| 4.40-4.50 | 12 | | | |
| 4.50-4.60 | 14 | | 27.08 | 4.50 |
| 4.60-4.70 | 17 | | | |
| 4.70-4.80 | 19 | | | |
| 4.80-4.90 | 20 | | | |
| 4.90-5.00 | 22 | | 26.58 | 5.00 |




**Remarks**
Refusal at 5.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

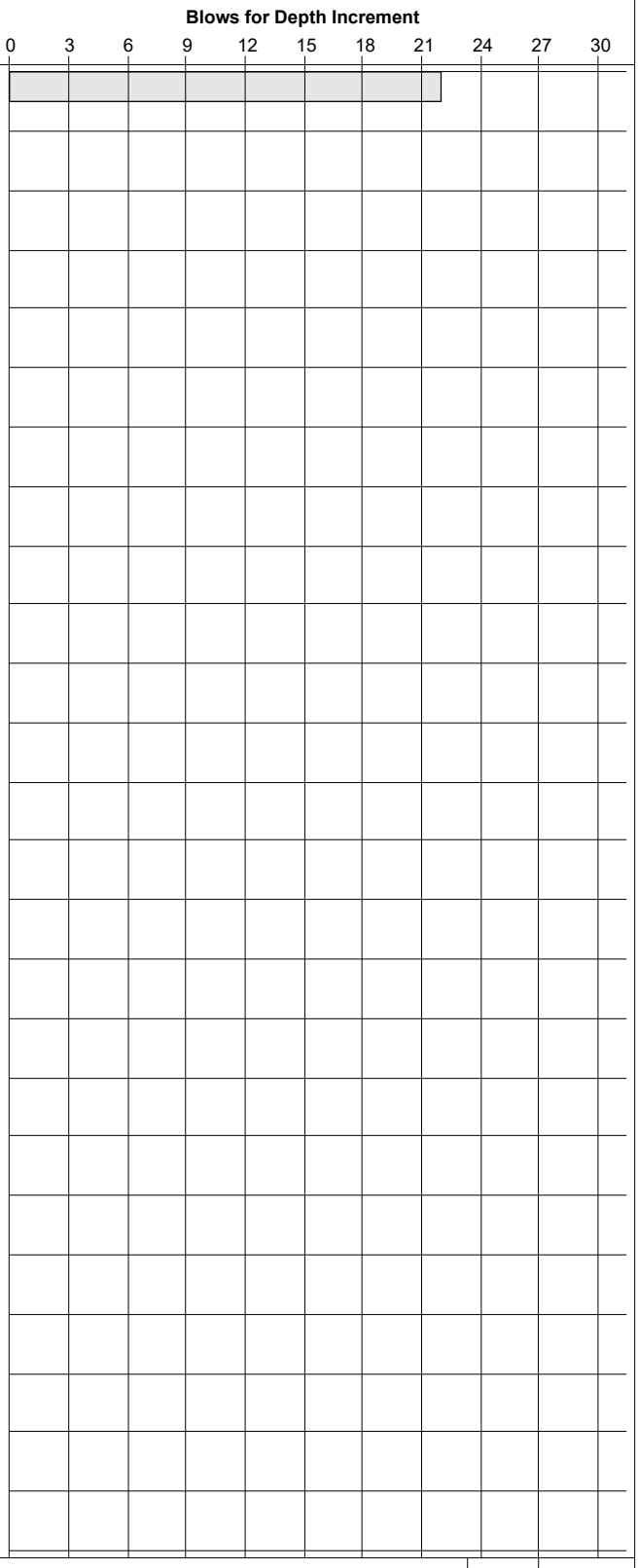
**Figure No.**
13642-03-24.DP110

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP110 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.58 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705888.5 E 776497.3 N | 15/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 22 | | 26.58 | 5.00 |
| | | | 26.08 | 5.50 |
| | | | 25.58 | 6.00 |
| | | | 25.08 | 6.50 |
| | | | 24.58 | 7.00 |
| | | | 24.08 | 7.50 |
| | | | 23.58 | 8.00 |
| | | | 23.08 | 8.50 |
| | | | 22.58 | 9.00 |
| | | | 22.08 | 9.50 |
| | | | 21.58 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

**Figure No.**
13642-03-24.DP110

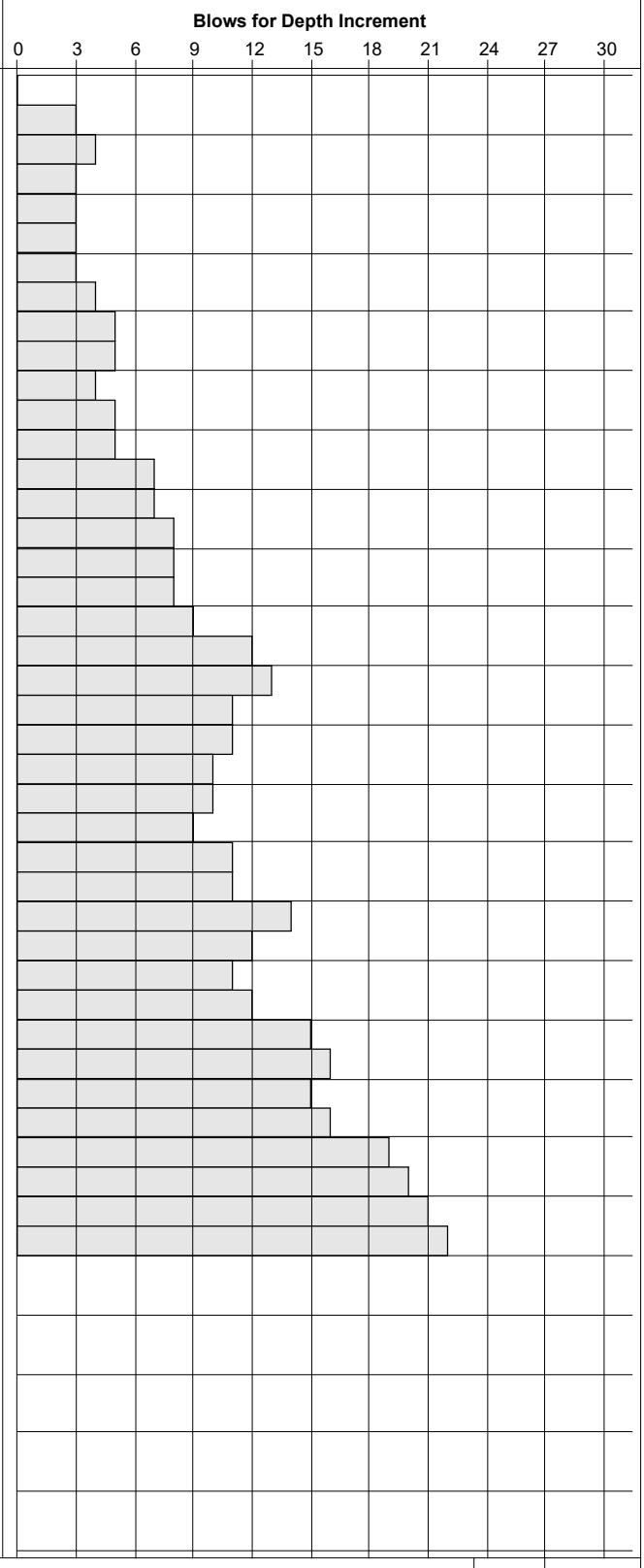
# Ground Investigations Ireland Ltd

www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP111 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 31.09 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705911.9 E 776493.1 N | 15/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 31.09 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 30.59 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 4 | | 30.09 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 8 | | 29.59 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 8 | | | |
| 1.80-1.90 | 9 | | | |
| 1.90-2.00 | 12 | | | |
| 2.00-2.10 | 13 | | 29.09 | 2.00 |
| 2.10-2.20 | 11 | | | |
| 2.20-2.30 | 11 | | | |
| 2.30-2.40 | 10 | | | |
| 2.40-2.50 | 10 | | | |
| 2.50-2.60 | 9 | | 28.59 | 2.50 |
| 2.60-2.70 | 11 | | | |
| 2.70-2.80 | 11 | | | |
| 2.80-2.90 | 14 | | | |
| 2.90-3.00 | 12 | | | |
| 3.00-3.10 | 11 | | 28.09 | 3.00 |
| 3.10-3.20 | 12 | | | |
| 3.20-3.30 | 15 | | | |
| 3.30-3.40 | 16 | | | |
| 3.40-3.50 | 15 | | | |
| 3.50-3.60 | 16 | | 27.59 | 3.50 |
| 3.60-3.70 | 19 | | | |
| 3.70-3.80 | 20 | | | |
| 3.80-3.90 | 21 | | | |
| 3.90-4.00 | 22 | | 27.09 | 4.00 |
| | | | 26.59 | 4.50 |
| | | | 26.09 | 5.00 |




**Remarks**
Refusal at 4.00m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

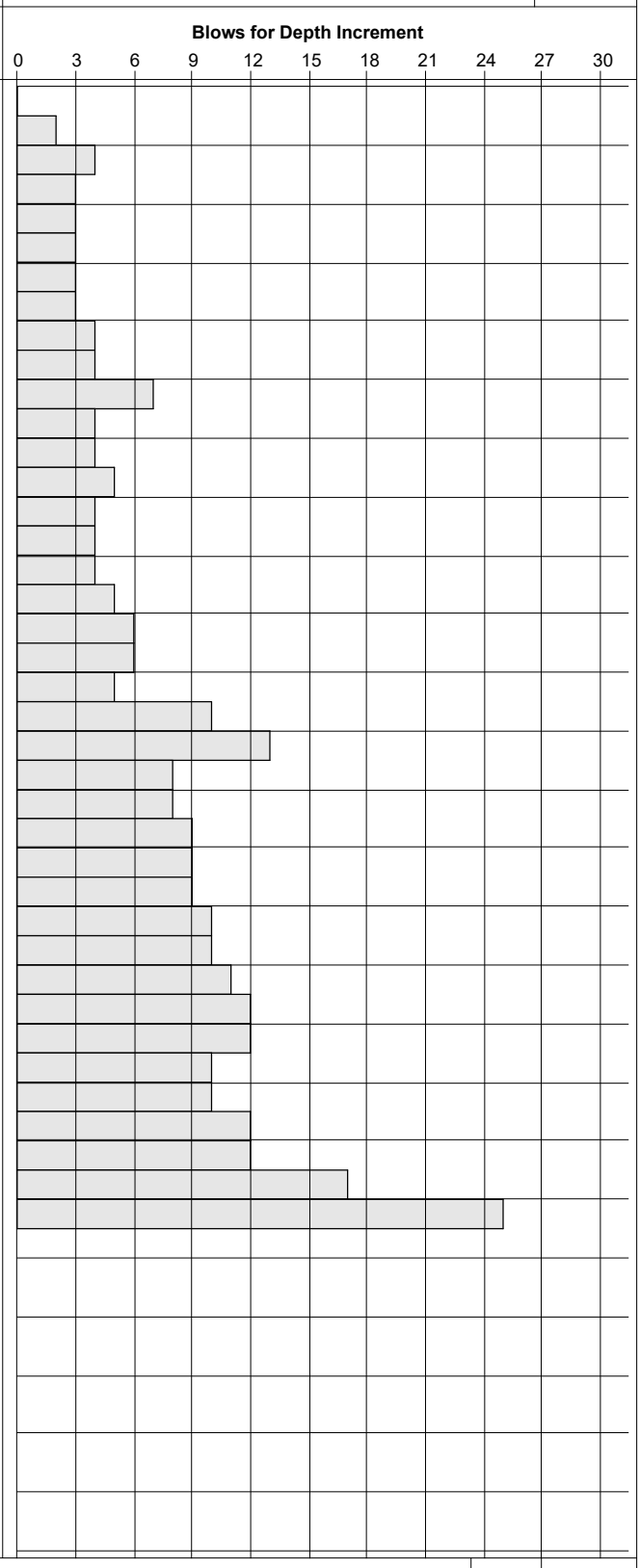
**Figure No.**
13642-03-24.DP111

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP112 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 30.59 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705939.6 E 776485.9 N | 15/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 30.59 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 30.09 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 3 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 7 | | 29.59 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 4 | | | |
| 1.50-1.60 | 4 | | 29.09 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 5 | | | |
| 1.80-1.90 | 6 | | | |
| 1.90-2.00 | 6 | | | |
| 2.00-2.10 | 5 | | 28.59 | 2.00 |
| 2.10-2.20 | 10 | | | |
| 2.20-2.30 | 13 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 8 | | | |
| 2.50-2.60 | 9 | | 28.09 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 9 | | | |
| 2.80-2.90 | 10 | | | |
| 2.90-3.00 | 10 | | | |
| 3.00-3.10 | 11 | | 27.59 | 3.00 |
| 3.10-3.20 | 12 | | | |
| 3.20-3.30 | 12 | | | |
| 3.30-3.40 | 10 | | | |
| 3.40-3.50 | 10 | | | |
| 3.50-3.60 | 12 | | 27.09 | 3.50 |
| 3.60-3.70 | 12 | | | |
| 3.70-3.80 | 17 | | | |
| 3.80-3.90 | 25 | | | |
| | | | 26.59 | 4.00 |
| | | | 26.09 | 4.50 |
| | | | 25.59 | 5.00 |




**Remarks**
Refusal at 3.90m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

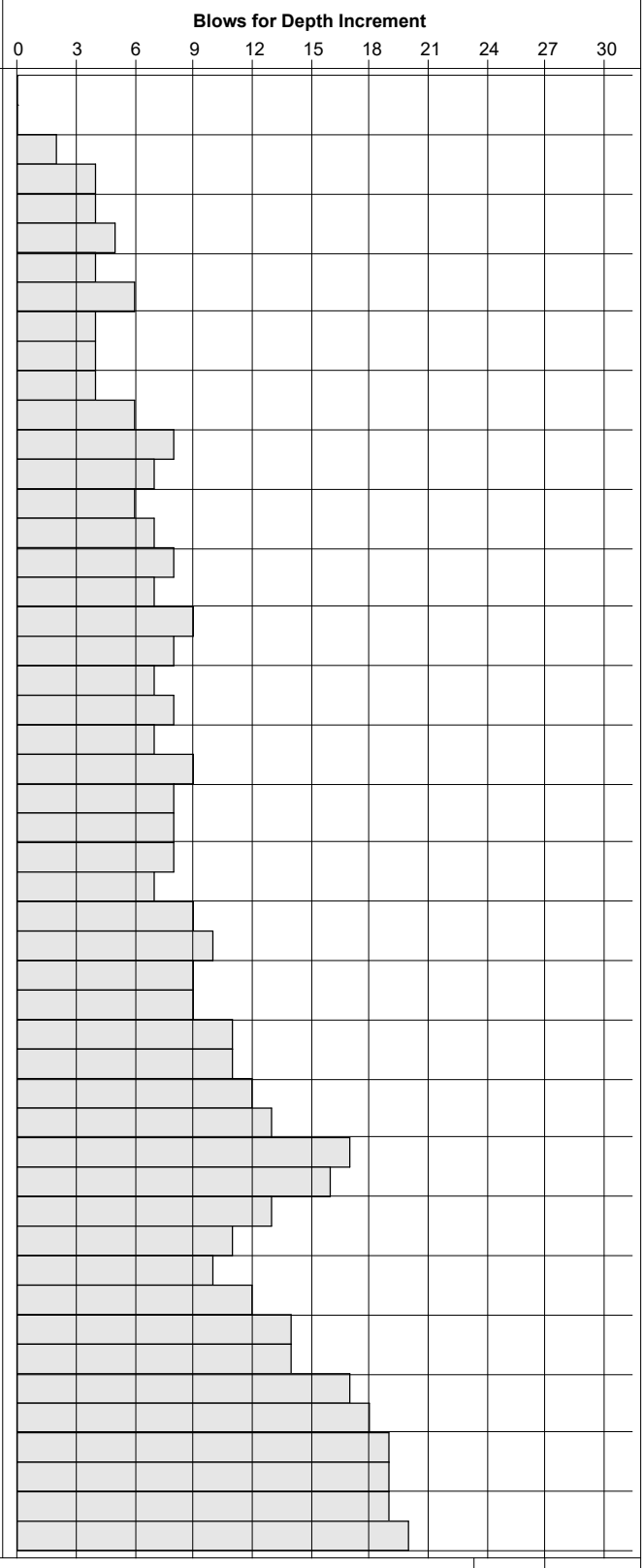
**Figure No.**
13642-03-24.DP112

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP114 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.97 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705990.6 E 776476.6 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.97 | 0.00 |
| 0.10-0.20 | 0 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 5 | | 28.47 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 27.97 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 8 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 6 | | | |
| 1.50-1.60 | 7 | | 27.47 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 7 | | | |
| 1.80-1.90 | 9 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 7 | | 26.97 | 2.00 |
| 2.10-2.20 | 8 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 9 | | | |
| 2.40-2.50 | 8 | | | |
| 2.50-2.60 | 8 | | 26.47 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 7 | | | |
| 2.80-2.90 | 9 | | | |
| 2.90-3.00 | 10 | | | |
| 3.00-3.10 | 9 | | 25.97 | 3.00 |
| 3.10-3.20 | 9 | | | |
| 3.20-3.30 | 11 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 12 | | | |
| 3.50-3.60 | 13 | | 25.47 | 3.50 |
| 3.60-3.70 | 17 | | | |
| 3.70-3.80 | 16 | | | |
| 3.80-3.90 | 13 | | | |
| 3.90-4.00 | 11 | | | |
| 4.00-4.10 | 10 | | 24.97 | 4.00 |
| 4.10-4.20 | 12 | | | |
| 4.20-4.30 | 14 | | | |
| 4.30-4.40 | 14 | | | |
| 4.40-4.50 | 17 | | | |
| 4.50-4.60 | 18 | | 24.47 | 4.50 |
| 4.60-4.70 | 19 | | | |
| 4.70-4.80 | 19 | | | |
| 4.80-4.90 | 19 | | | |
| 4.90-5.00 | 20 | | 23.97 | 5.00 |




**Remarks**
Refusal at 5.20m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

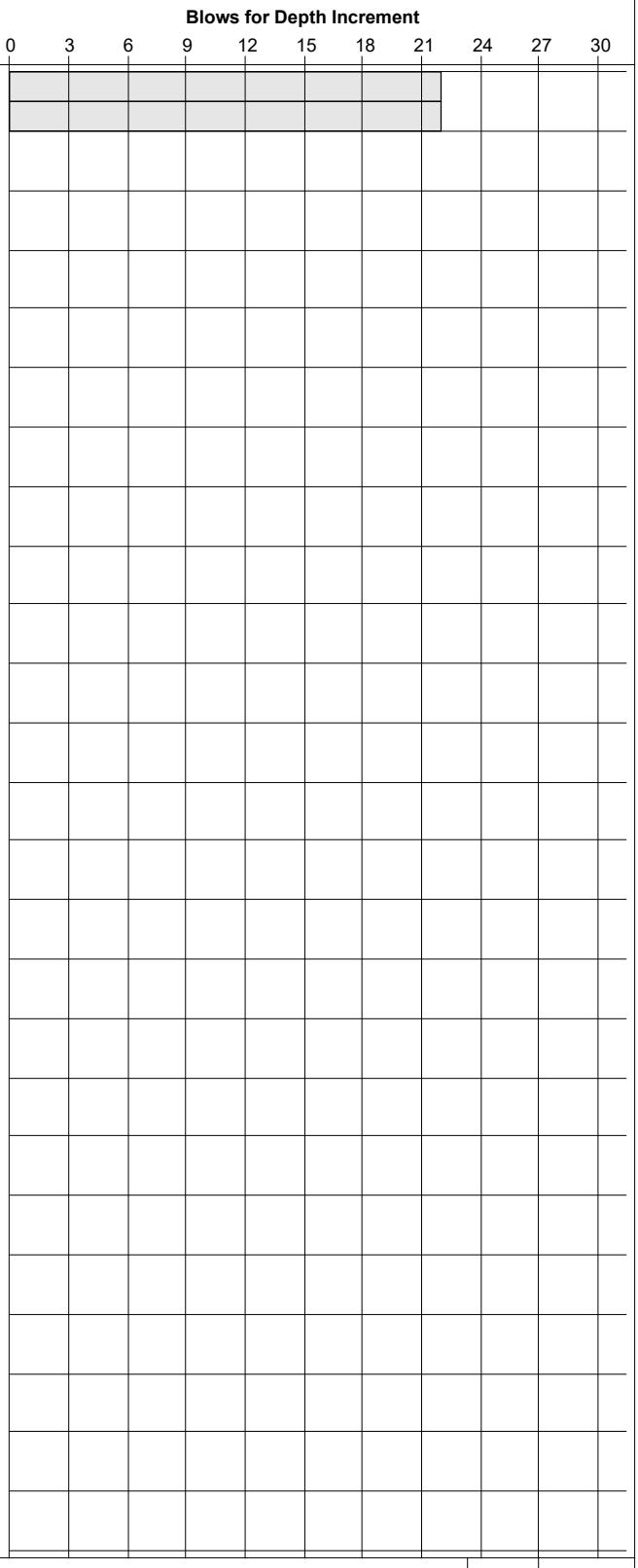
**Figure No.**
13642-03-24.DP119

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP114 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.97 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705990.6 E 776476.6 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 22 | | 23.97 | 5.00 |
| 5.10-5.20 | 22 | | | |
| | | | 23.47 | 5.50 |
| | | | 22.97 | 6.00 |
| | | | 22.47 | 6.50 |
| | | | 21.97 | 7.00 |
| | | | 21.47 | 7.50 |
| | | | 20.97 | 8.00 |
| | | | 20.47 | 8.50 |
| | | | 19.97 | 9.00 |
| | | | 19.47 | 9.50 |
| | | | 18.97 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

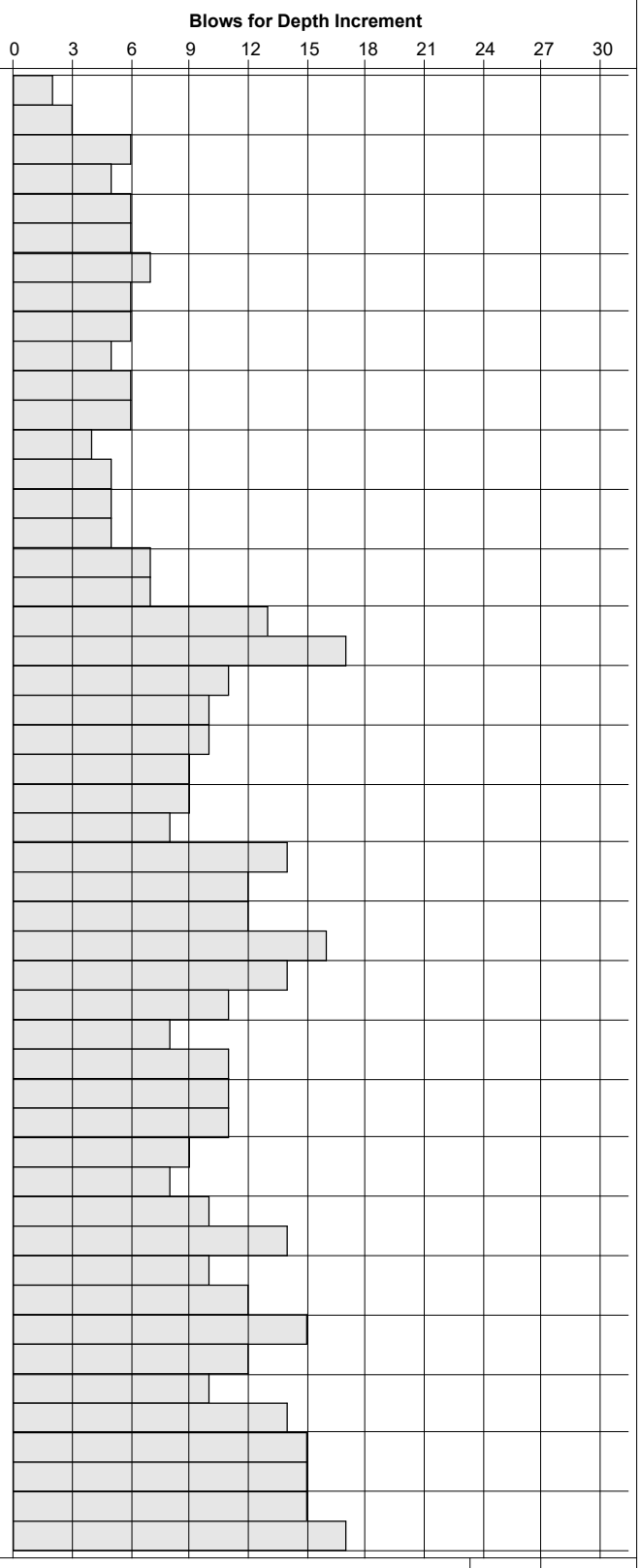
**Figure No.**
13642-03-24.DP119

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP115 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 26.71 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706014.5 E 776469.1 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 26.71 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 6 | | | |
| 0.30-0.40 | 5 | | | |
| 0.40-0.50 | 6 | | | |
| 0.50-0.60 | 6 | | 26.21 | 0.50 |
| 0.60-0.70 | 7 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 6 | | 25.71 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 5 | | 25.21 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 7 | | | |
| 1.80-1.90 | 13 | | | |
| 1.90-2.00 | 17 | | | |
| 2.00-2.10 | 11 | | 24.71 | 2.00 |
| 2.10-2.20 | 10 | | | |
| 2.20-2.30 | 10 | | | |
| 2.30-2.40 | 9 | | | |
| 2.40-2.50 | 9 | | | |
| 2.50-2.60 | 8 | | 24.21 | 2.50 |
| 2.60-2.70 | 14 | | | |
| 2.70-2.80 | 12 | | | |
| 2.80-2.90 | 12 | | | |
| 2.90-3.00 | 16 | | | |
| 3.00-3.10 | 14 | | 23.71 | 3.00 |
| 3.10-3.20 | 11 | | | |
| 3.20-3.30 | 8 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 11 | | | |
| 3.50-3.60 | 11 | | 23.21 | 3.50 |
| 3.60-3.70 | 9 | | | |
| 3.70-3.80 | 8 | | | |
| 3.80-3.90 | 10 | | | |
| 3.90-4.00 | 14 | | | |
| 4.00-4.10 | 10 | | 22.71 | 4.00 |
| 4.10-4.20 | 12 | | | |
| 4.20-4.30 | 15 | | | |
| 4.30-4.40 | 12 | | | |
| 4.40-4.50 | 10 | | | |
| 4.50-4.60 | 14 | | 22.21 | 4.50 |
| 4.60-4.70 | 15 | | | |
| 4.70-4.80 | 15 | | | |
| 4.80-4.90 | 15 | | | |
| 4.90-5.00 | 17 | | 21.71 | 5.00 |




**Remarks**
Refusal at 5.40m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

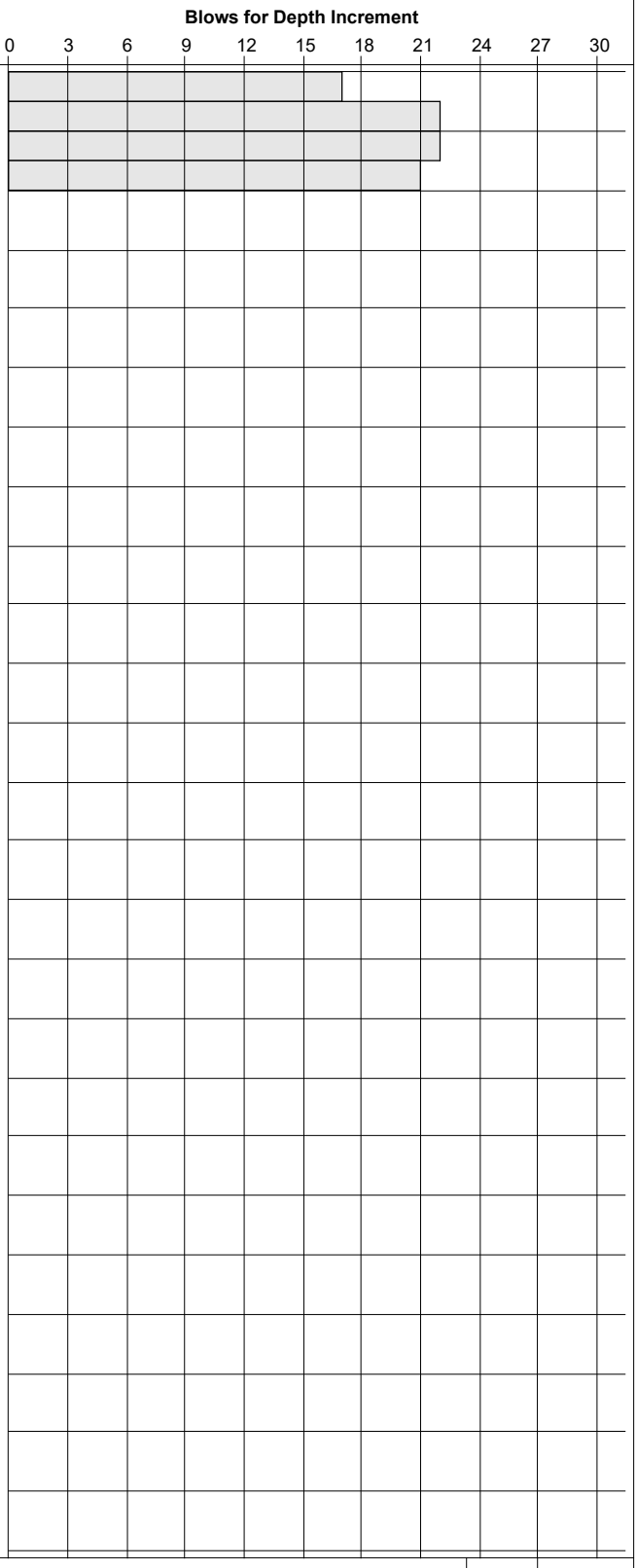
**Figure No.**
13642-03-24.DP115

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP115 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 26.71 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706014.5 E 776469.1 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 17 | | 21.71 | 5.00 |
| 5.10-5.20 | 22 | | | |
| 5.20-5.30 | 22 | | | |
| 5.30-5.40 | 21 | | | |
| | | | 21.21 | 5.50 |
| | | | 20.71 | 6.00 |
| | | | 20.21 | 6.50 |
| | | | 19.71 | 7.00 |
| | | | 19.21 | 7.50 |
| | | | 18.71 | 8.00 |
| | | | 18.21 | 8.50 |
| | | | 17.71 | 9.00 |
| | | | 17.21 | 9.50 |
| | | | 16.71 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

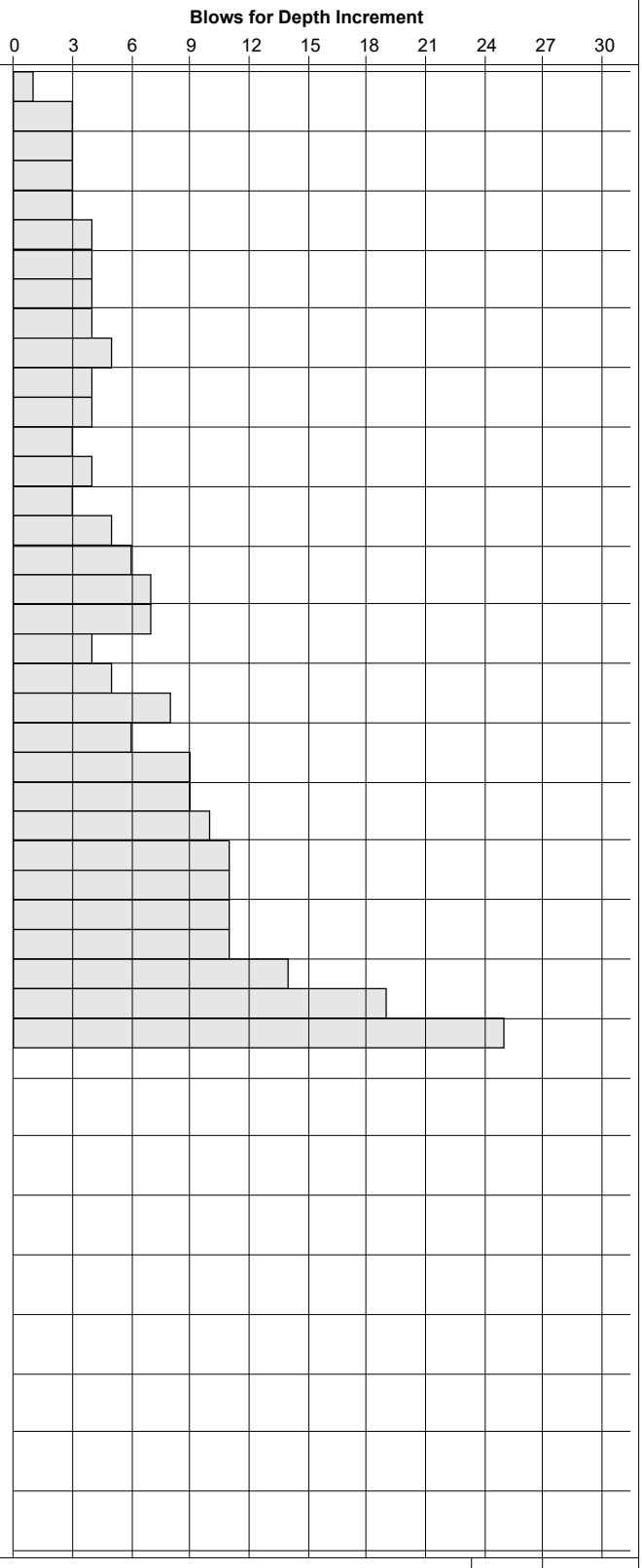
**Figure No.**
13642-03-24.DP115

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP117 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 30.27 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705928.1 E 776467.1 N | 15/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 1 | | 30.27 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 29.77 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 4 | | 29.27 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 5 | | 28.77 | 1.50 |
| 1.60-1.70 | 6 | | | |
| 1.70-1.80 | 7 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 5 | | 28.27 | 2.00 |
| 2.10-2.20 | 8 | | | |
| 2.20-2.30 | 6 | | | |
| 2.30-2.40 | 9 | | | |
| 2.40-2.50 | 9 | | | |
| 2.50-2.60 | 10 | | 27.77 | 2.50 |
| 2.60-2.70 | 11 | | | |
| 2.70-2.80 | 11 | | | |
| 2.80-2.90 | 11 | | | |
| 2.90-3.00 | 11 | | | |
| 3.00-3.10 | 14 | | 27.27 | 3.00 |
| 3.10-3.20 | 19 | | | |
| 3.20-3.30 | 25 | | | |
| | | | 26.77 | 3.50 |
| | | | 26.27 | 4.00 |
| | | | 25.77 | 4.50 |
| | | | 25.27 | 5.00 |




**Remarks**
Refusal at 3.30m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

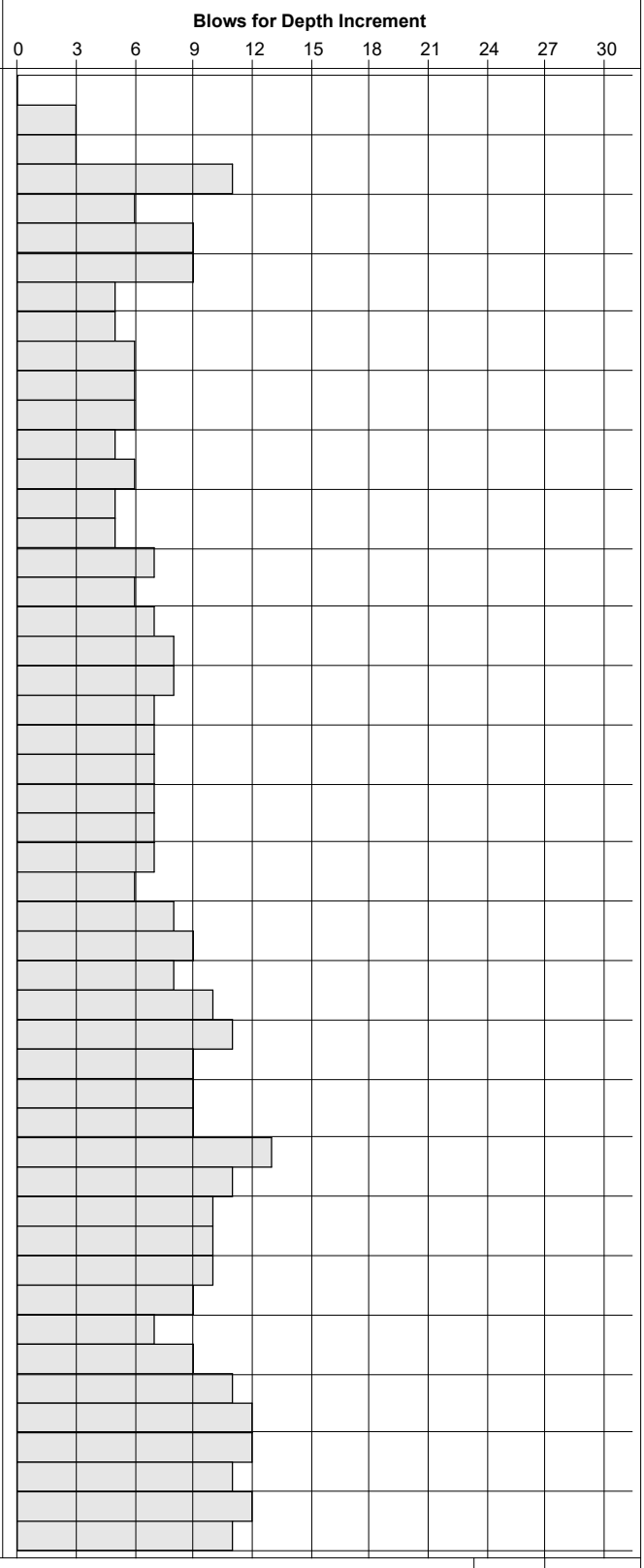
**Figure No.**
13642-03-24.DP111

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP118 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.67 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705961.4 E 776459.2 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.67 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 11 | | | |
| 0.40-0.50 | 6 | | | |
| 0.50-0.60 | 9 | | 29.17 | 0.50 |
| 0.60-0.70 | 9 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 6 | | | |
| 1.00-1.10 | 6 | | 28.67 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 6 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 5 | | 28.17 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 8 | | 27.67 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 7 | | 27.17 | 2.50 |
| 2.60-2.70 | 7 | | | |
| 2.70-2.80 | 6 | | | |
| 2.80-2.90 | 8 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 8 | | 26.67 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 11 | | | |
| 3.30-3.40 | 9 | | | |
| 3.40-3.50 | 9 | | | |
| 3.50-3.60 | 9 | | 26.17 | 3.50 |
| 3.60-3.70 | 13 | | | |
| 3.70-3.80 | 11 | | | |
| 3.80-3.90 | 10 | | | |
| 3.90-4.00 | 10 | | | |
| 4.00-4.10 | 10 | | 25.67 | 4.00 |
| 4.10-4.20 | 9 | | | |
| 4.20-4.30 | 7 | | | |
| 4.30-4.40 | 9 | | | |
| 4.40-4.50 | 11 | | | |
| 4.50-4.60 | 12 | | 25.17 | 4.50 |
| 4.60-4.70 | 12 | | | |
| 4.70-4.80 | 11 | | | |
| 4.80-4.90 | 12 | | | |
| 4.90-5.00 | 11 | | | |
| | | | 24.67 | 5.00 |




**Remarks**
Refusal at 5.70m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

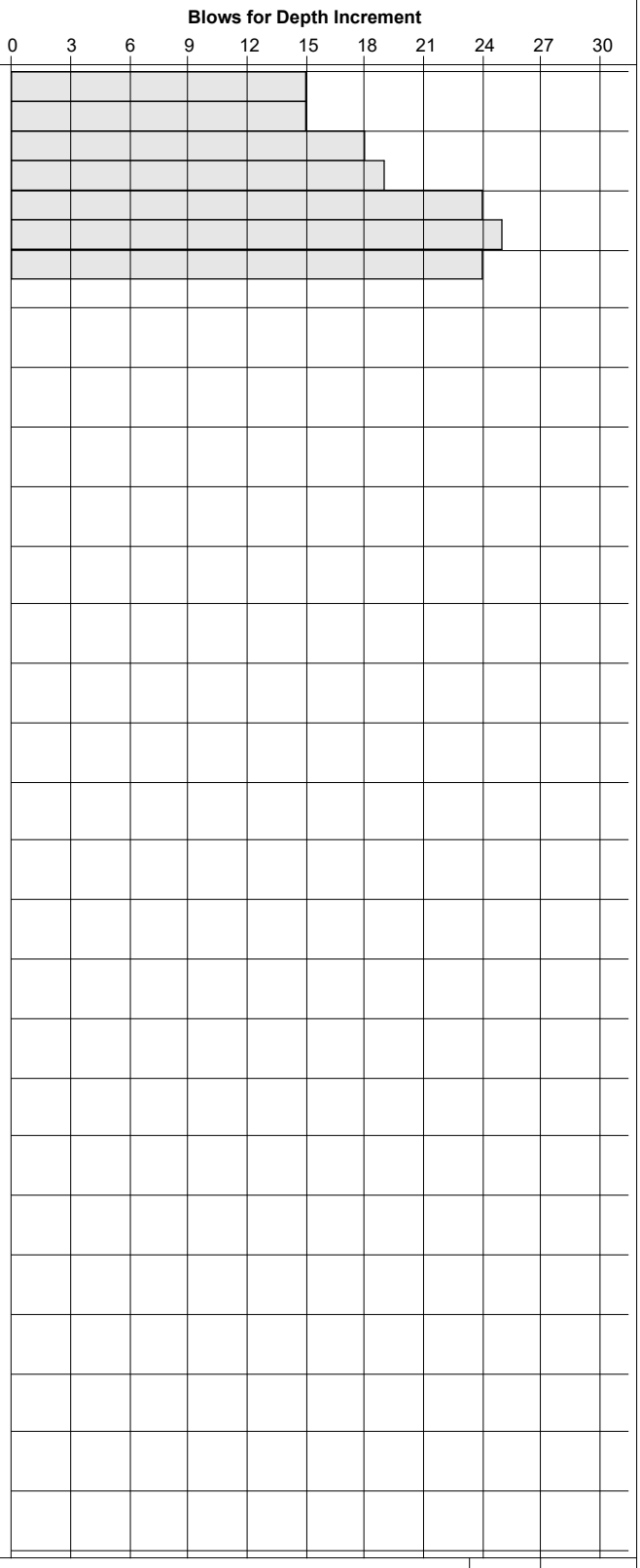
**Figure No.**
13642-03-24.DP118

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP118 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.67 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705961.4 E 776459.2 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 15 | | 24.67 | 5.00 |
| 5.10-5.20 | 15 | | | |
| 5.20-5.30 | 18 | | | |
| 5.30-5.40 | 19 | | | |
| 5.40-5.50 | 24 | | | |
| 5.50-5.60 | 25 | | 24.17 | 5.50 |
| 5.60-5.70 | 24 | | | |
| | | | 23.67 | 6.00 |
| | | | 23.17 | 6.50 |
| | | | 22.67 | 7.00 |
| | | | 22.17 | 7.50 |
| | | | 21.67 | 8.00 |
| | | | 21.17 | 8.50 |
| | | | 20.67 | 9.00 |
| | | | 20.17 | 9.50 |
| | | | 19.67 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

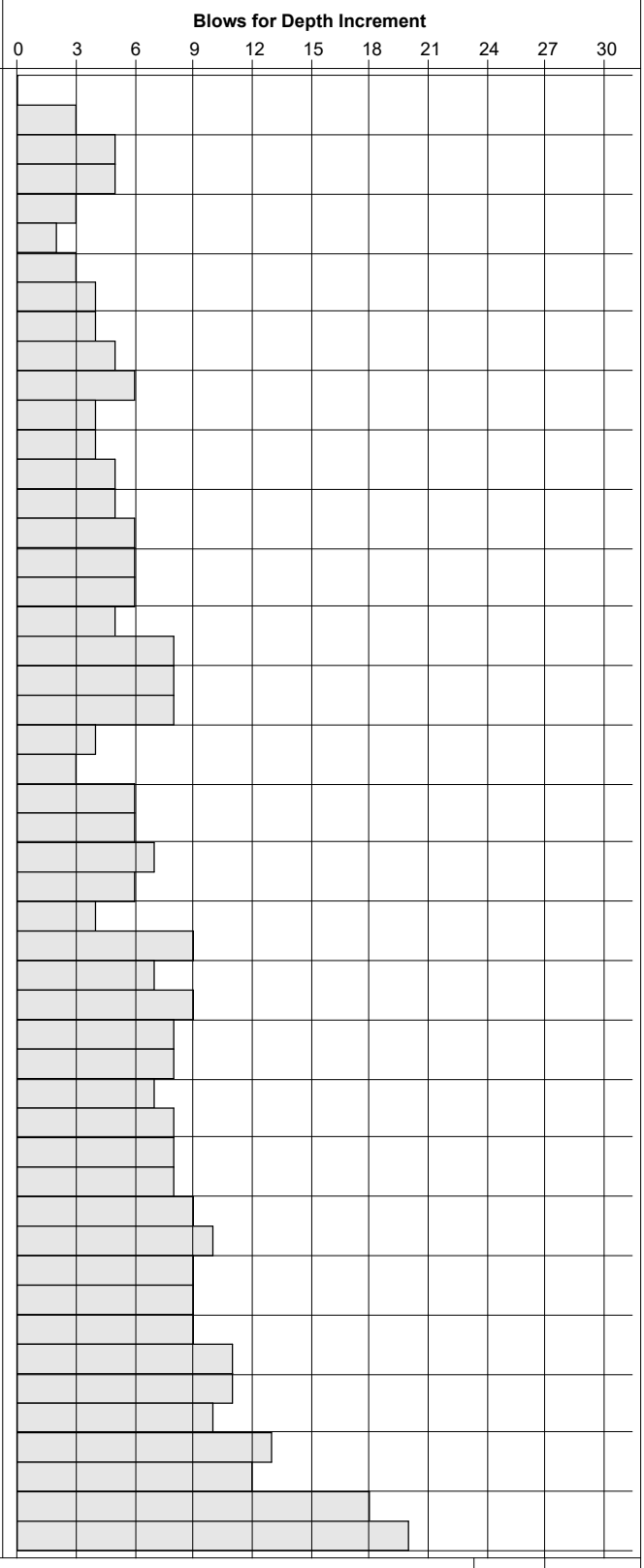
**Figure No.**
13642-03-24.DP118

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP119 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.51 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705983.6 E 776454.8 N | 12/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.51 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 5 | | | |
| 0.30-0.40 | 5 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 2 | | 28.01 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 6 | | 27.51 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 6 | | 27.01 | 1.50 |
| 1.60-1.70 | 6 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 8 | | 26.51 | 2.00 |
| 2.10-2.20 | 8 | | | |
| 2.20-2.30 | 4 | | | |
| 2.30-2.40 | 3 | | | |
| 2.40-2.50 | 6 | | | |
| 2.50-2.60 | 6 | | 26.01 | 2.50 |
| 2.60-2.70 | 7 | | | |
| 2.70-2.80 | 6 | | | |
| 2.80-2.90 | 4 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 7 | | 25.51 | 3.00 |
| 3.10-3.20 | 9 | | | |
| 3.20-3.30 | 8 | | | |
| 3.30-3.40 | 8 | | | |
| 3.40-3.50 | 7 | | | |
| 3.50-3.60 | 8 | | 25.01 | 3.50 |
| 3.60-3.70 | 8 | | | |
| 3.70-3.80 | 8 | | | |
| 3.80-3.90 | 9 | | | |
| 3.90-4.00 | 10 | | | |
| 4.00-4.10 | 9 | | 24.51 | 4.00 |
| 4.10-4.20 | 9 | | | |
| 4.20-4.30 | 9 | | | |
| 4.30-4.40 | 11 | | | |
| 4.40-4.50 | 11 | | | |
| 4.50-4.60 | 10 | | 24.01 | 4.50 |
| 4.60-4.70 | 13 | | | |
| 4.70-4.80 | 12 | | | |
| 4.80-4.90 | 18 | | | |
| 4.90-5.00 | 20 | | 23.51 | 5.00 |




**Remarks**
Refusal at 5.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

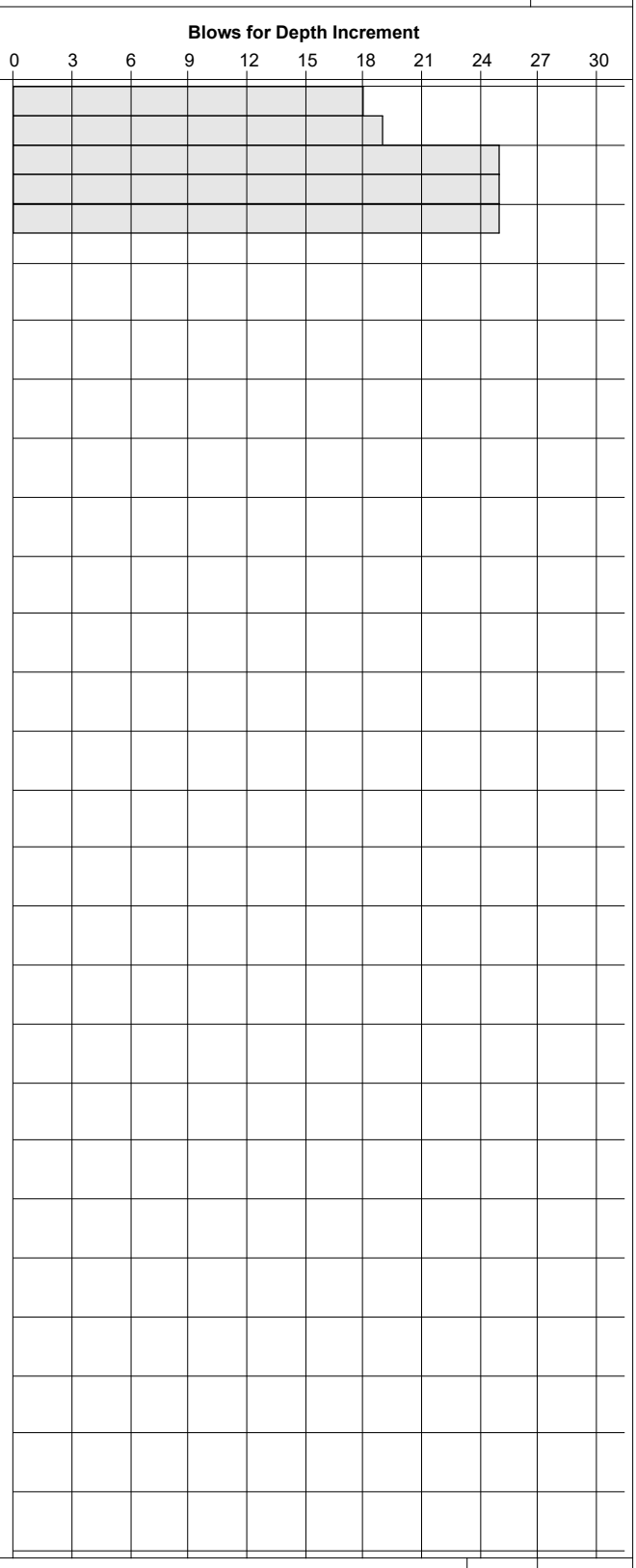
**Figure No.**
13642-03-24.DP119

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP119 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.51 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705983.6 E 776454.8 N | 12/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 18 | | 23.51 | 5.00 |
| 5.10-5.20 | 19 | | | |
| 5.20-5.30 | 25 | | | |
| 5.30-5.40 | 25 | | | |
| 5.40-5.50 | 25 | | 23.01 | 5.50 |
| | | | 22.51 | 6.00 |
| | | | 22.01 | 6.50 |
| | | | 21.51 | 7.00 |
| | | | 21.01 | 7.50 |
| | | | 20.51 | 8.00 |
| | | | 20.01 | 8.50 |
| | | | 19.51 | 9.00 |
| | | | 19.01 | 9.50 |
| | | | 18.51 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

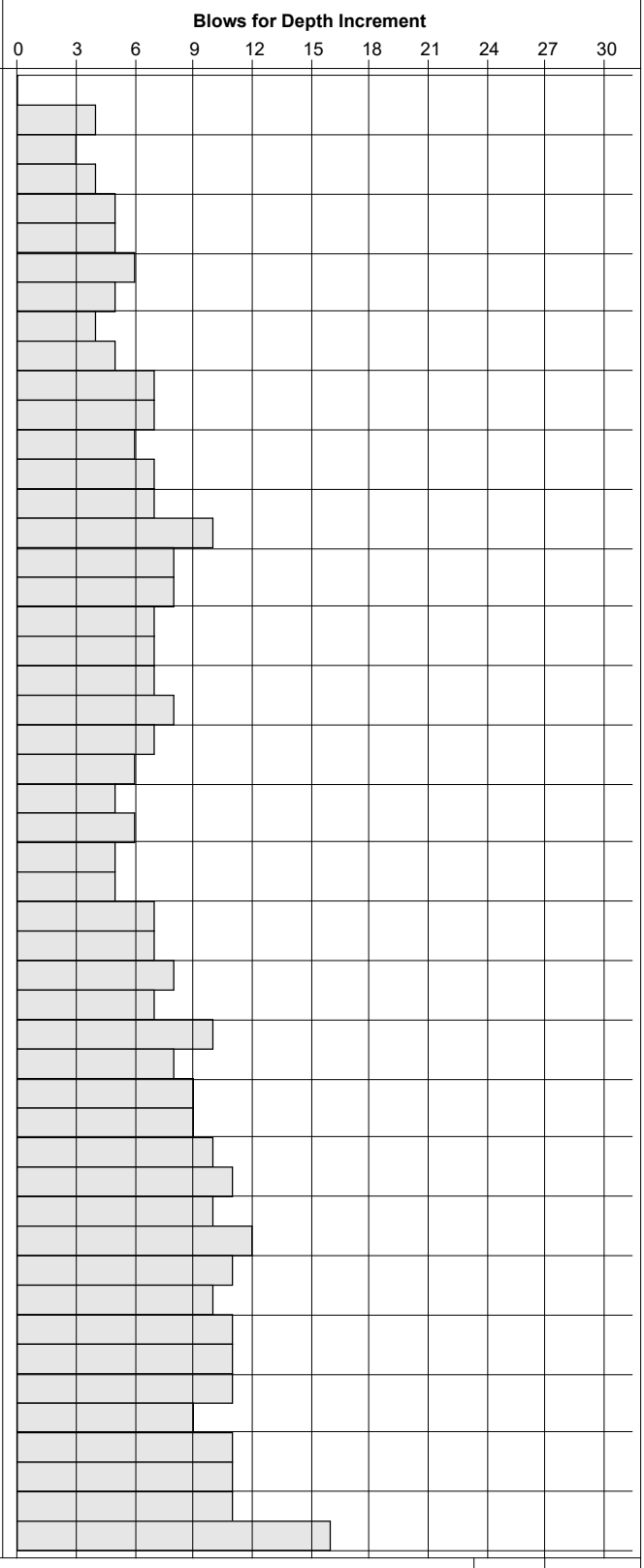
**Figure No.**
13642-03-24.DP119

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP120 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 25.94 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706002.3 E 776431.3 N | 10/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 25.94 | 0.00 |
| 0.10-0.20 | 4 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 5 | | | |
| 0.50-0.60 | 5 | | 25.44 | 0.50 |
| 0.60-0.70 | 6 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 7 | | 24.94 | 1.00 |
| 1.10-1.20 | 7 | | | |
| 1.20-1.30 | 6 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 10 | | 24.44 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 8 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 7 | | | |
| 2.00-2.10 | 7 | | 23.94 | 2.00 |
| 2.10-2.20 | 8 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 6 | | | |
| 2.40-2.50 | 5 | | | |
| 2.50-2.60 | 6 | | 23.44 | 2.50 |
| 2.60-2.70 | 5 | | | |
| 2.70-2.80 | 5 | | | |
| 2.80-2.90 | 7 | | | |
| 2.90-3.00 | 7 | | | |
| 3.00-3.10 | 8 | | 22.94 | 3.00 |
| 3.10-3.20 | 7 | | | |
| 3.20-3.30 | 10 | | | |
| 3.30-3.40 | 8 | | | |
| 3.40-3.50 | 9 | | | |
| 3.50-3.60 | 9 | | 22.44 | 3.50 |
| 3.60-3.70 | 10 | | | |
| 3.70-3.80 | 11 | | | |
| 3.80-3.90 | 10 | | | |
| 3.90-4.00 | 12 | | | |
| 4.00-4.10 | 11 | | 21.94 | 4.00 |
| 4.10-4.20 | 10 | | | |
| 4.20-4.30 | 11 | | | |
| 4.30-4.40 | 11 | | | |
| 4.40-4.50 | 11 | | | |
| 4.50-4.60 | 9 | | 21.44 | 4.50 |
| 4.60-4.70 | 11 | | | |
| 4.70-4.80 | 11 | | | |
| 4.80-4.90 | 11 | | | |
| 4.90-5.00 | 16 | | 20.94 | 5.00 |




**Remarks**
Refusal at 5.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

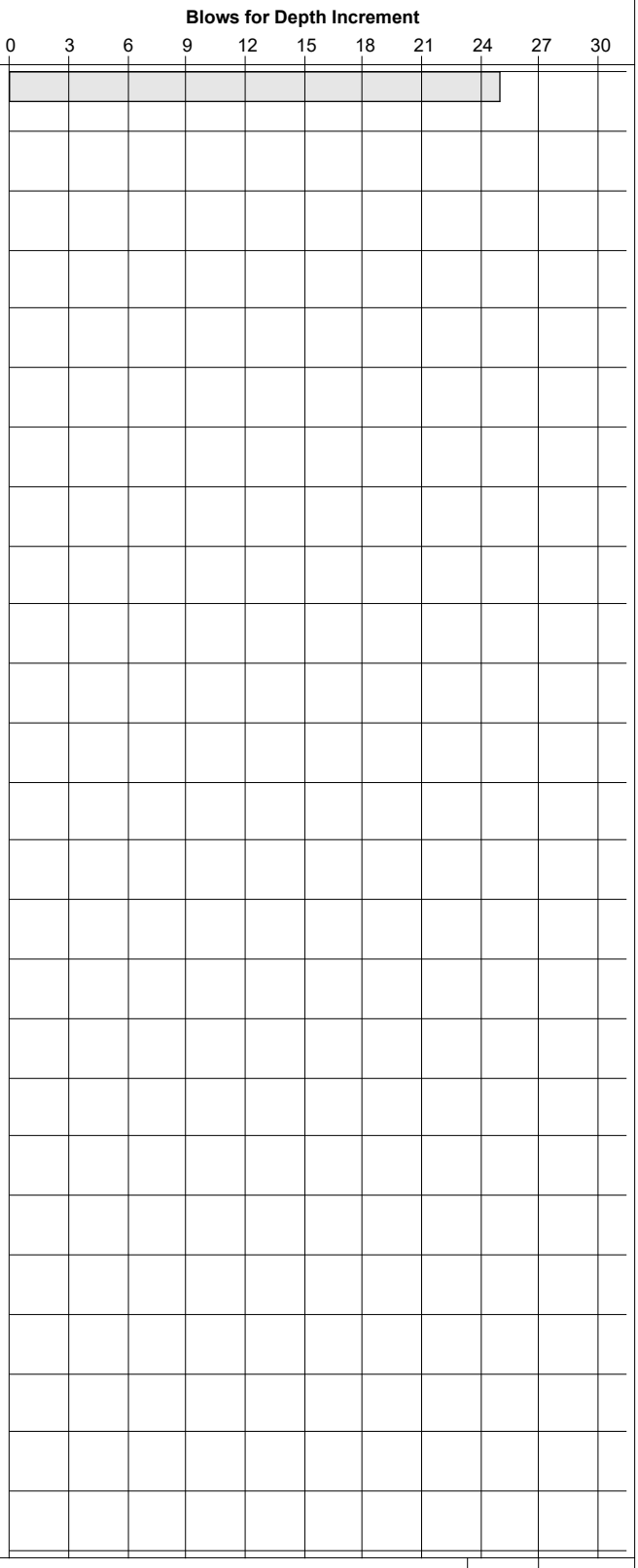
**Figure No.**
13642-03-24.DP120

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP120 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 25.94 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 706002.3 E 776431.3 N | 10/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 25 | | 20.94 | 5.00 |
| | | | 20.44 | 5.50 |
| | | | 19.94 | 6.00 |
| | | | 19.44 | 6.50 |
| | | | 18.94 | 7.00 |
| | | | 18.44 | 7.50 |
| | | | 17.94 | 8.00 |
| | | | 17.44 | 8.50 |
| | | | 16.94 | 9.00 |
| | | | 16.44 | 9.50 |
| | | | 15.94 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

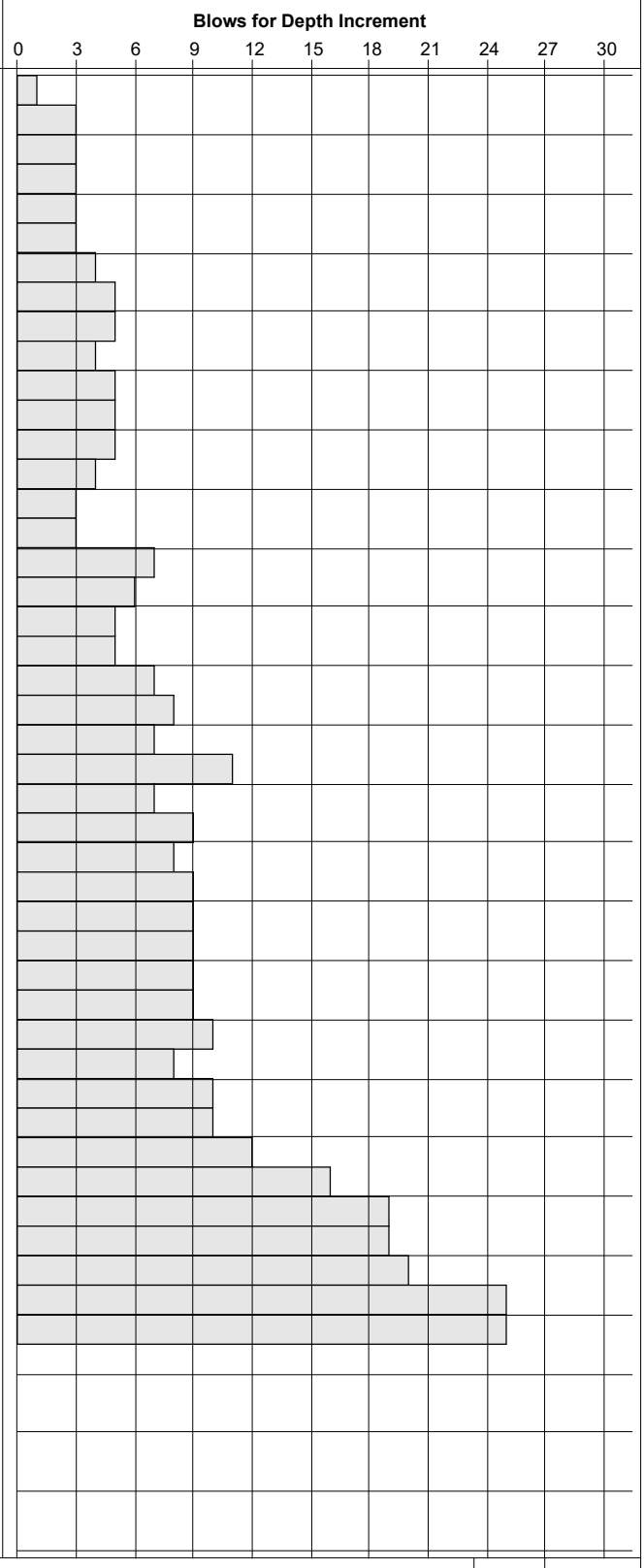
**Figure No.**
13642-03-24.DP120

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP122 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.08 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705898.9 E 776422.9 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 1 | | 29.08 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 28.58 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 5 | | 28.08 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 3 | | 27.58 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 5 | | | |
| 2.00-2.10 | 7 | | 27.08 | 2.00 |
| 2.10-2.20 | 8 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 11 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 9 | | 26.58 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 9 | | | |
| 2.80-2.90 | 9 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 9 | | 26.08 | 3.00 |
| 3.10-3.20 | 9 | | | |
| 3.20-3.30 | 10 | | | |
| 3.30-3.40 | 8 | | | |
| 3.40-3.50 | 10 | | | |
| 3.50-3.60 | 10 | | 25.58 | 3.50 |
| 3.60-3.70 | 12 | | | |
| 3.70-3.80 | 16 | | | |
| 3.80-3.90 | 19 | | | |
| 3.90-4.00 | 19 | | | |
| 4.00-4.10 | 20 | | 25.08 | 4.00 |
| 4.10-4.20 | 25 | | | |
| 4.20-4.30 | 25 | | | |
| | | | 24.58 | 4.50 |
| | | | 24.08 | 5.00 |




**Remarks**
Refusal at 4.30m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

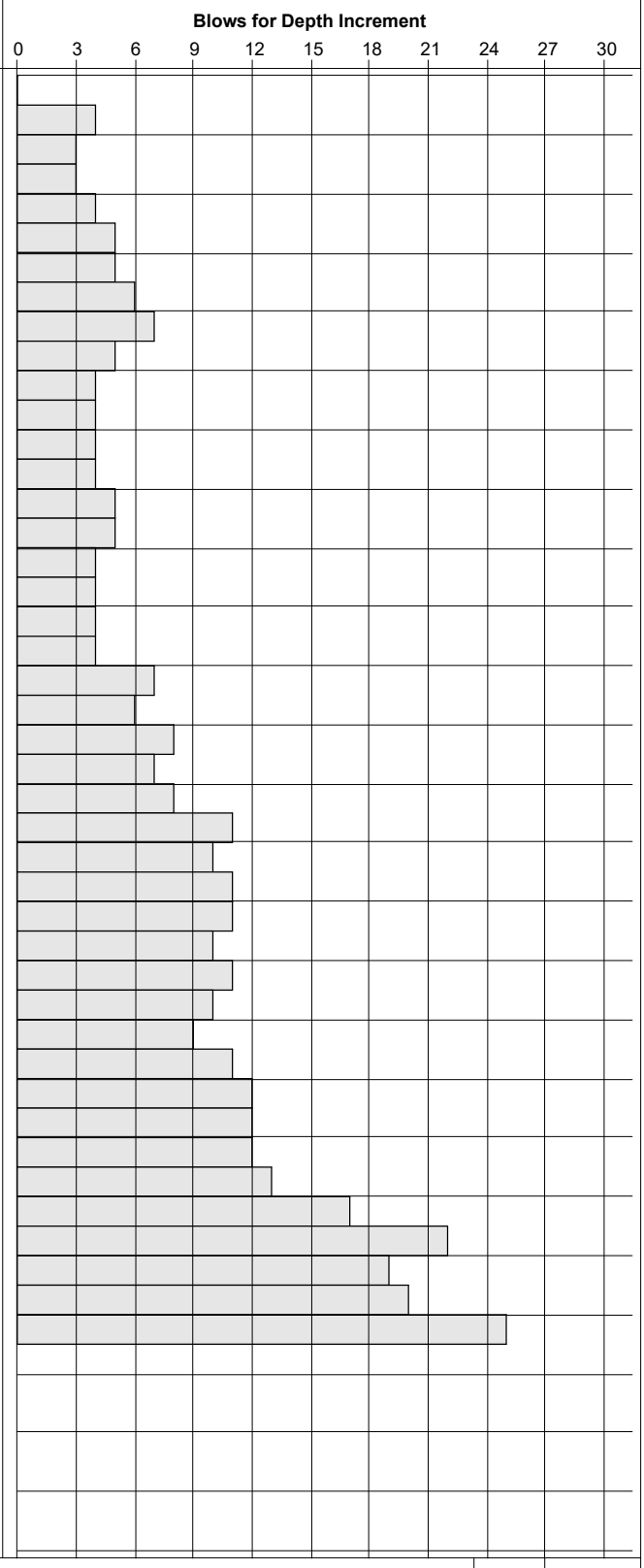
**Figure No.**
13642-03-24.DP125

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP123 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.56 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705952.8 E 776425.4 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.56 | 0.00 |
| 0.10-0.20 | 4 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 5 | | 28.06 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 7 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 4 | | 27.56 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 5 | | 27.06 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 7 | | 26.56 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 8 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 8 | | | |
| 2.50-2.60 | 11 | | 26.06 | 2.50 |
| 2.60-2.70 | 10 | | | |
| 2.70-2.80 | 11 | | | |
| 2.80-2.90 | 11 | | | |
| 2.90-3.00 | 10 | | | |
| 3.00-3.10 | 11 | | 25.56 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 9 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 12 | | | |
| 3.50-3.60 | 12 | | 25.06 | 3.50 |
| 3.60-3.70 | 12 | | | |
| 3.70-3.80 | 13 | | | |
| 3.80-3.90 | 17 | | | |
| 3.90-4.00 | 22 | | | |
| 4.00-4.10 | 19 | | 24.56 | 4.00 |
| 4.10-4.20 | 20 | | | |
| 4.20-4.30 | 25 | | | |
| | | | 24.06 | 4.50 |
| | | | 23.56 | 5.00 |




**Remarks**
Refusal at 4.30m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

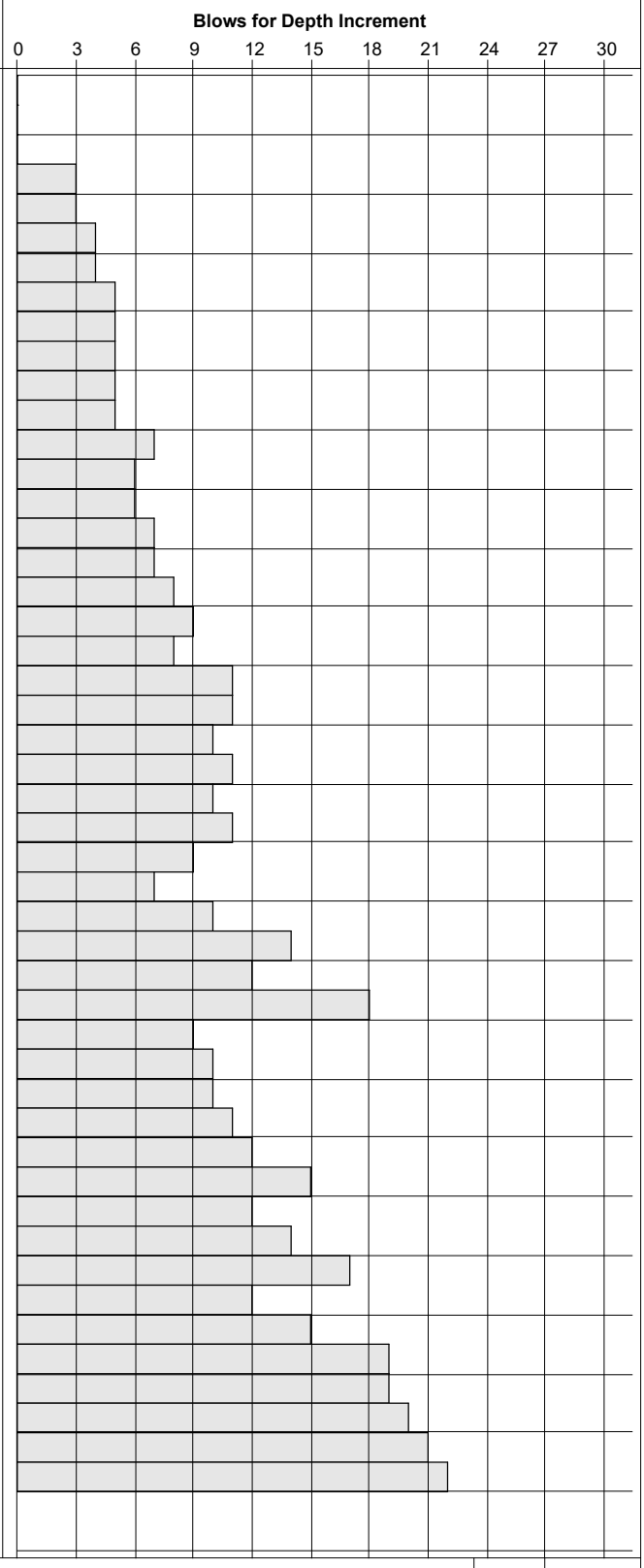
**Figure No.**
13642-03-24.DP125

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP124 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.05 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705922.6 E 776426.3 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.05 | 0.00 |
| 0.10-0.20 | 0 | | | |
| 0.20-0.30 | 0 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 28.55 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 5 | | 28.05 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 6 | | | |
| 1.40-1.50 | 6 | | | |
| 1.50-1.60 | 7 | | 27.55 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 8 | | | |
| 1.80-1.90 | 9 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 11 | | 27.05 | 2.00 |
| 2.10-2.20 | 11 | | | |
| 2.20-2.30 | 10 | | | |
| 2.30-2.40 | 11 | | | |
| 2.40-2.50 | 10 | | | |
| 2.50-2.60 | 11 | | 26.55 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 7 | | | |
| 2.80-2.90 | 10 | | | |
| 2.90-3.00 | 14 | | | |
| 3.00-3.10 | 12 | | 26.05 | 3.00 |
| 3.10-3.20 | 18 | | | |
| 3.20-3.30 | 9 | | | |
| 3.30-3.40 | 10 | | | |
| 3.40-3.50 | 10 | | | |
| 3.50-3.60 | 11 | | 25.55 | 3.50 |
| 3.60-3.70 | 12 | | | |
| 3.70-3.80 | 15 | | | |
| 3.80-3.90 | 12 | | | |
| 3.90-4.00 | 14 | | | |
| 4.00-4.10 | 17 | | 25.05 | 4.00 |
| 4.10-4.20 | 12 | | | |
| 4.20-4.30 | 15 | | | |
| 4.30-4.40 | 19 | | | |
| 4.40-4.50 | 19 | | | |
| 4.50-4.60 | 20 | | 24.55 | 4.50 |
| 4.60-4.70 | 21 | | | |
| 4.70-4.80 | 22 | | | |
| | | | 24.05 | 5.00 |




**Remarks**
Refusal at 4.80m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

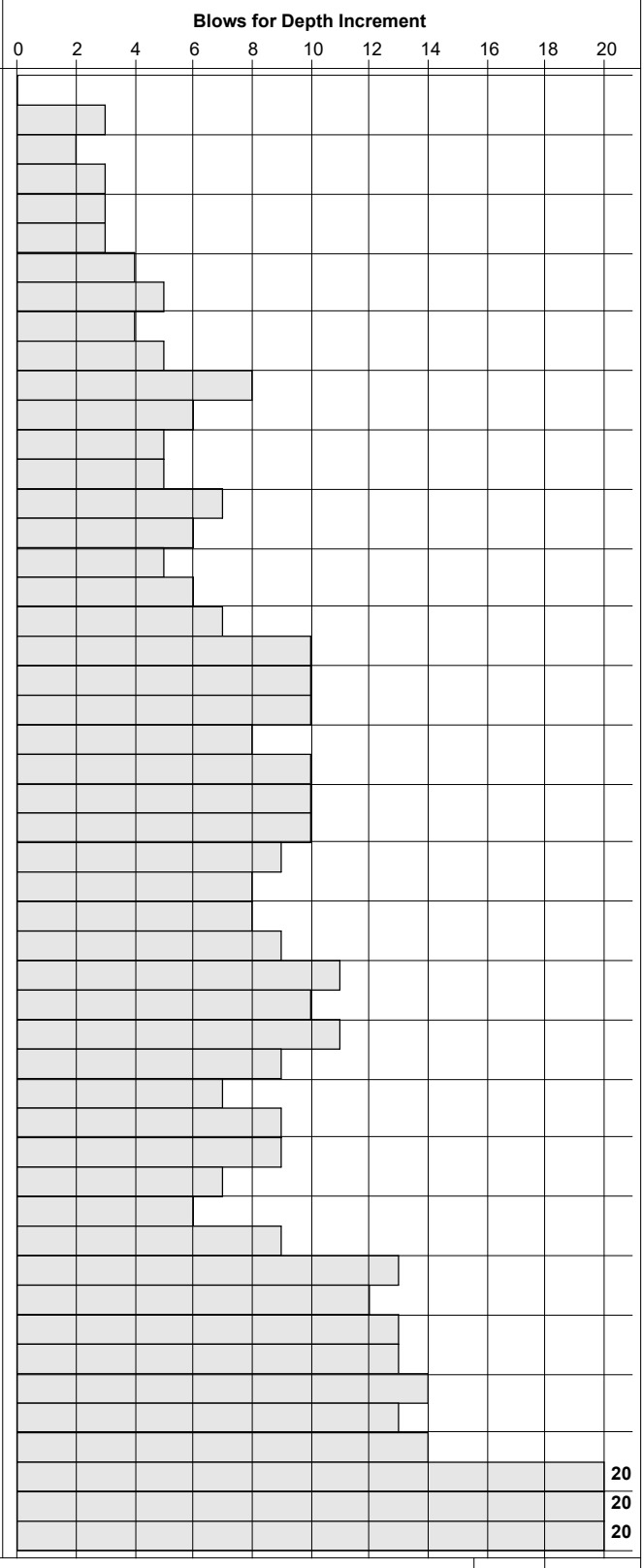
**Figure No.**
13642-03-24.DP124

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP125 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 29.07 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705876.6 E 776417.1 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 29.07 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 28.57 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 8 | | 28.07 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 6 | | 27.57 | 1.50 |
| 1.60-1.70 | 5 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 10 | | | |
| 2.00-2.10 | 10 | | 27.07 | 2.00 |
| 2.10-2.20 | 10 | | | |
| 2.20-2.30 | 8 | | | |
| 2.30-2.40 | 10 | | | |
| 2.40-2.50 | 10 | | | |
| 2.50-2.60 | 10 | | 26.57 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 8 | | | |
| 2.80-2.90 | 8 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 11 | | 26.07 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 11 | | | |
| 3.30-3.40 | 9 | | | |
| 3.40-3.50 | 7 | | | |
| 3.50-3.60 | 9 | | 25.57 | 3.50 |
| 3.60-3.70 | 9 | | | |
| 3.70-3.80 | 7 | | | |
| 3.80-3.90 | 6 | | | |
| 3.90-4.00 | 9 | | | |
| 4.00-4.10 | 13 | | 25.07 | 4.00 |
| 4.10-4.20 | 12 | | | |
| 4.20-4.30 | 13 | | | |
| 4.30-4.40 | 13 | | | |
| 4.40-4.50 | 14 | | | |
| 4.50-4.60 | 13 | | 24.57 | 4.50 |
| 4.60-4.70 | 14 | | | |
| 4.70-4.80 | 20 | | | |
| 4.80-4.90 | 20 | | | |
| 4.90-5.00 | 20 | | 24.07 | 5.00 |




**Remarks**
Refusal at 5.00m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

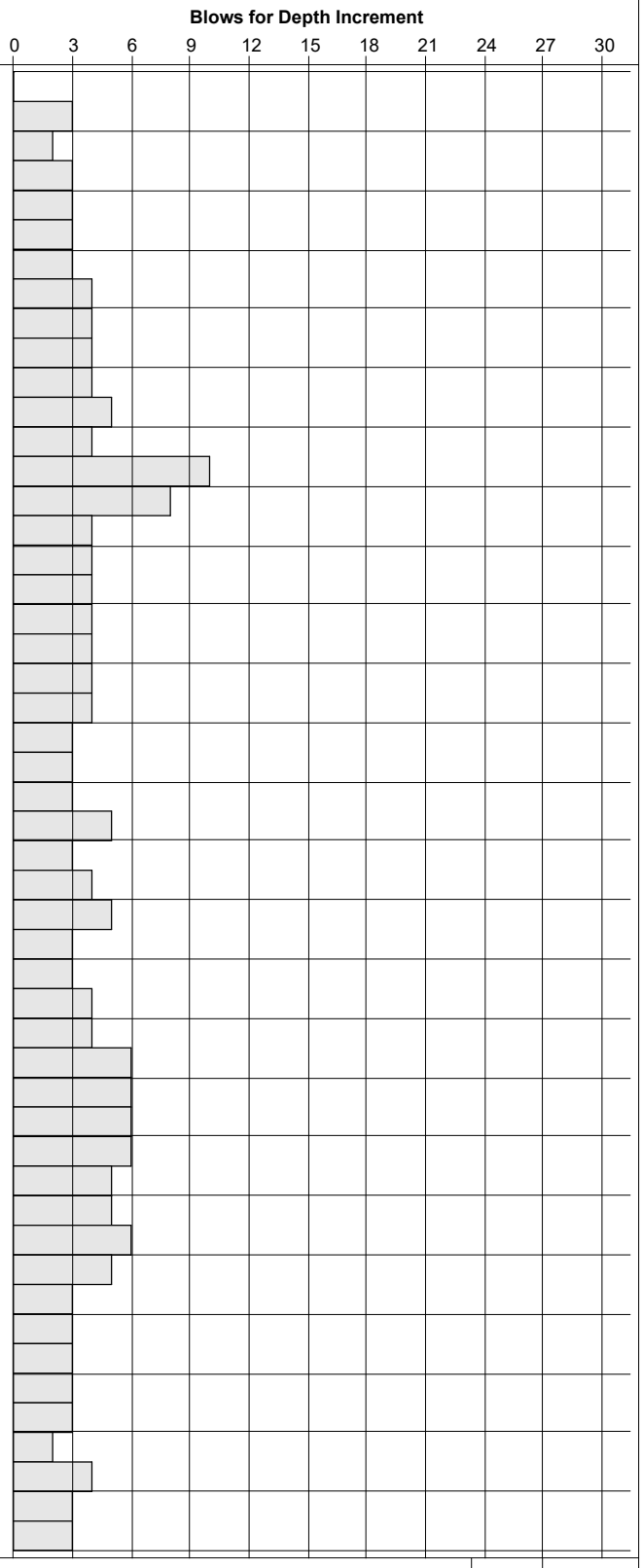
**Figure No.**
13642-03-24.DP125

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP126 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.35 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705895.1 E 776398.1 N | 10/04/2024 | Waterman Moylan | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.35 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 27.85 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 27.35 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 10 | | | |
| 1.40-1.50 | 8 | | | |
| 1.50-1.60 | 4 | | 26.85 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 4 | | 26.35 | 2.00 |
| 2.10-2.20 | 4 | | | |
| 2.20-2.30 | 3 | | | |
| 2.30-2.40 | 3 | | | |
| 2.40-2.50 | 3 | | | |
| 2.50-2.60 | 5 | | 25.85 | 2.50 |
| 2.60-2.70 | 3 | | | |
| 2.70-2.80 | 4 | | | |
| 2.80-2.90 | 5 | | | |
| 2.90-3.00 | 3 | | | |
| 3.00-3.10 | 3 | | 25.35 | 3.00 |
| 3.10-3.20 | 4 | | | |
| 3.20-3.30 | 4 | | | |
| 3.30-3.40 | 6 | | | |
| 3.40-3.50 | 6 | | | |
| 3.50-3.60 | 6 | | 24.85 | 3.50 |
| 3.60-3.70 | 6 | | | |
| 3.70-3.80 | 5 | | | |
| 3.80-3.90 | 5 | | | |
| 3.90-4.00 | 6 | | | |
| 4.00-4.10 | 5 | | 24.35 | 4.00 |
| 4.10-4.20 | 3 | | | |
| 4.20-4.30 | 3 | | | |
| 4.30-4.40 | 3 | | | |
| 4.40-4.50 | 3 | | | |
| 4.50-4.60 | 3 | | 23.85 | 4.50 |
| 4.60-4.70 | 2 | | | |
| 4.70-4.80 | 4 | | | |
| 4.80-4.90 | 3 | | | |
| 4.90-5.00 | 3 | | 23.35 | 5.00 |




**Remarks**
Refusal at 8.80m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

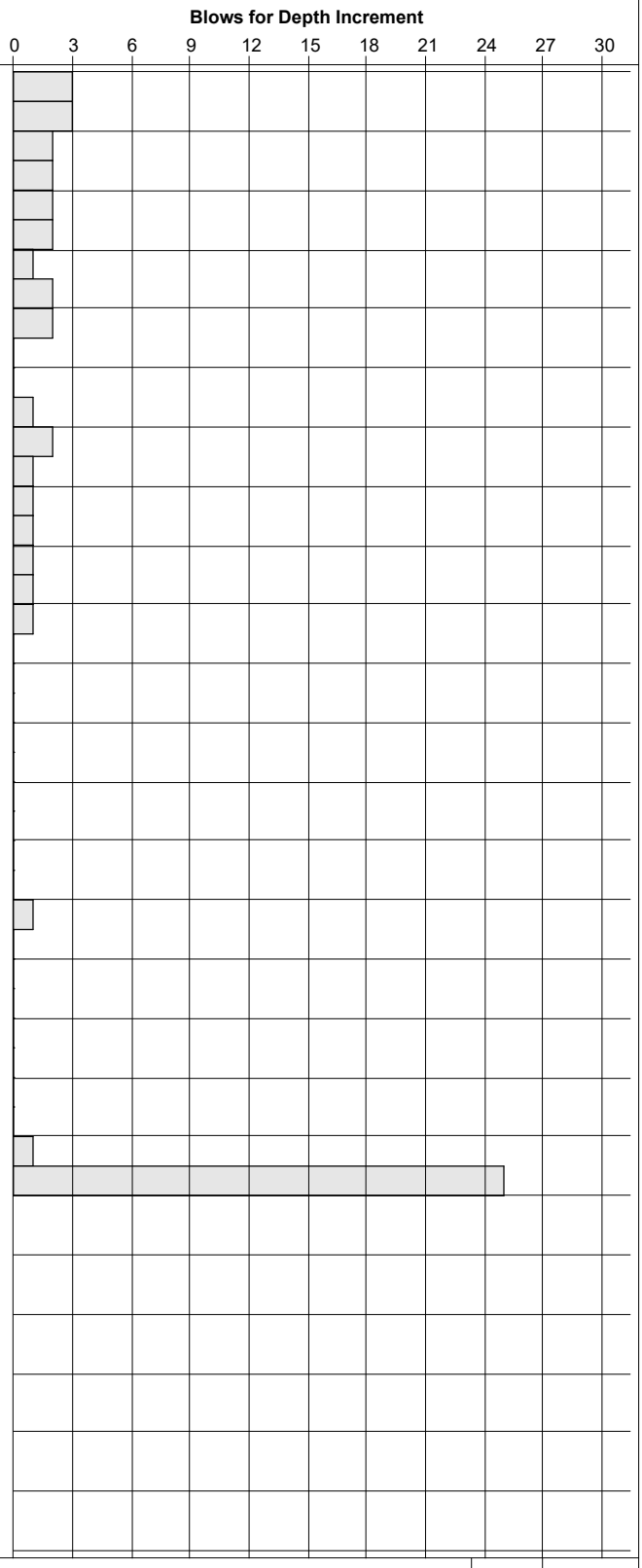
**Figure No.**
13642-03-24.DP126

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP126 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.35 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705895.1 E 776398.1 N | 10/04/2024 | Waterman Moylan | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 5.00-5.10 | 3 | | 23.35 | 5.00 |
| 5.10-5.20 | 3 | | | |
| 5.20-5.30 | 2 | | | |
| 5.30-5.40 | 2 | | | |
| 5.40-5.50 | 2 | | | |
| 5.50-5.60 | 2 | | 22.85 | 5.50 |
| 5.60-5.70 | 1 | | | |
| 5.70-5.80 | 2 | | | |
| 5.80-5.90 | 2 | | | |
| 5.90-6.00 | 0 | | | |
| 6.00-6.10 | 0 | | 22.35 | 6.00 |
| 6.10-6.20 | 1 | | | |
| 6.20-6.30 | 2 | | | |
| 6.30-6.40 | 1 | | | |
| 6.40-6.50 | 1 | | | |
| 6.50-6.60 | 1 | | 21.85 | 6.50 |
| 6.60-6.70 | 1 | | | |
| 6.70-6.80 | 1 | | | |
| 6.80-6.90 | 1 | | | |
| 6.90-7.00 | 0 | | | |
| 7.00-7.10 | 0 | | 21.35 | 7.00 |
| 7.10-7.20 | 0 | | | |
| 7.20-7.30 | 0 | | | |
| 7.30-7.40 | 0 | | | |
| 7.40-7.50 | 0 | | | |
| 7.50-7.60 | 0 | | 20.85 | 7.50 |
| 7.60-7.70 | 0 | | | |
| 7.70-7.80 | 0 | | | |
| 7.80-7.90 | 1 | | | |
| 7.90-8.00 | 0 | | | |
| 8.00-8.10 | 0 | | 20.35 | 8.00 |
| 8.10-8.20 | 0 | | | |
| 8.20-8.30 | 0 | | | |
| 8.30-8.40 | 0 | | | |
| 8.40-8.50 | 0 | | | |
| 8.50-8.60 | 0 | | 19.85 | 8.50 |
| 8.60-8.70 | 1 | | | |
| 8.70-8.80 | 25 | | | |
| | | | 19.35 | 9.00 |
| | | | 18.85 | 9.50 |
| | | | 18.35 | 10.00 |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

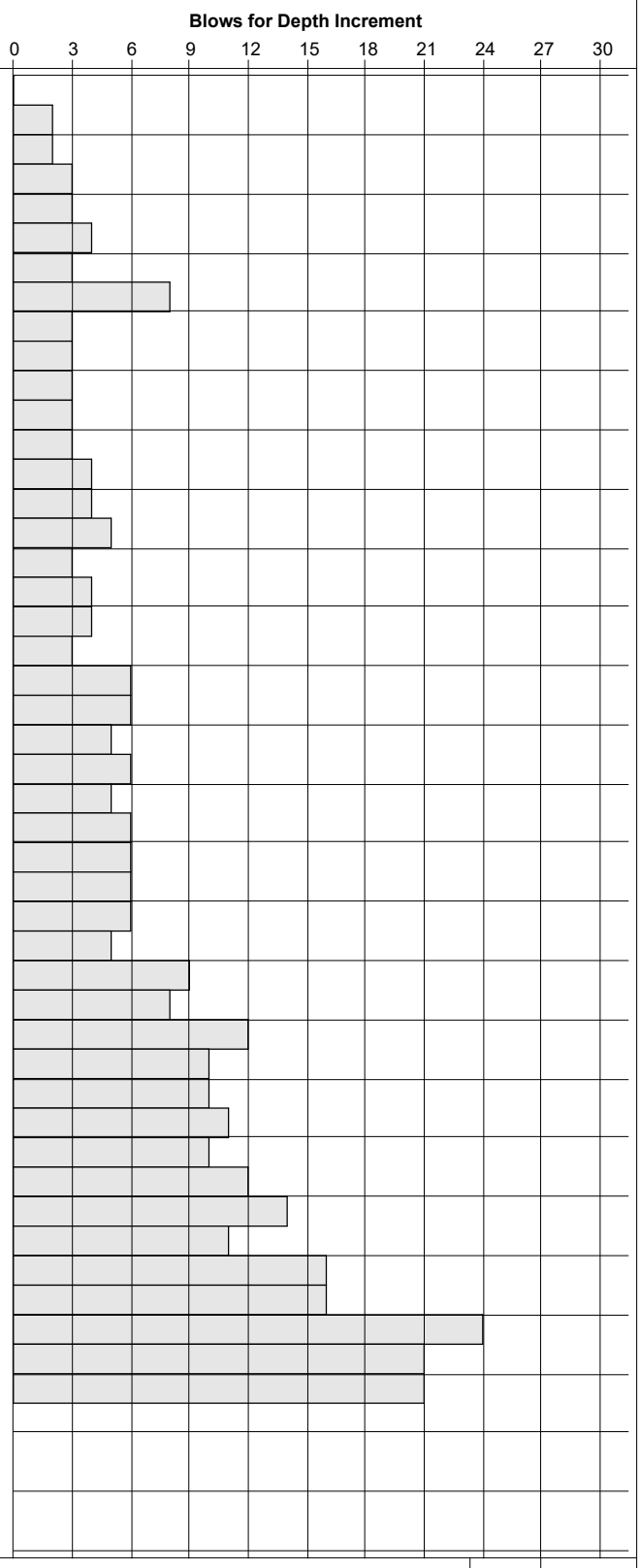
**Figure No.**
13642-03-24.DP126

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP127 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 28.62 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705928.9 E 776413.6 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 28.62 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 28.12 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 8 | | | |
| 0.80-0.90 | 3 | | | |
| 0.90-1.00 | 3 | | | |
| 1.00-1.10 | 3 | | 27.62 | 1.00 |
| 1.10-1.20 | 3 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 4 | | | |
| 1.40-1.50 | 4 | | | |
| 1.50-1.60 | 5 | | 27.12 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 6 | | 26.62 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 5 | | | |
| 2.30-2.40 | 6 | | | |
| 2.40-2.50 | 5 | | | |
| 2.50-2.60 | 6 | | 26.12 | 2.50 |
| 2.60-2.70 | 6 | | | |
| 2.70-2.80 | 6 | | | |
| 2.80-2.90 | 6 | | | |
| 2.90-3.00 | 5 | | | |
| 3.00-3.10 | 9 | | 25.62 | 3.00 |
| 3.10-3.20 | 8 | | | |
| 3.20-3.30 | 12 | | | |
| 3.30-3.40 | 10 | | | |
| 3.40-3.50 | 10 | | | |
| 3.50-3.60 | 11 | | 25.12 | 3.50 |
| 3.60-3.70 | 10 | | | |
| 3.70-3.80 | 12 | | | |
| 3.80-3.90 | 14 | | | |
| 3.90-4.00 | 11 | | | |
| 4.00-4.10 | 16 | | 24.62 | 4.00 |
| 4.10-4.20 | 16 | | | |
| 4.20-4.30 | 24 | | | |
| 4.30-4.40 | 21 | | | |
| 4.40-4.50 | 21 | | 24.12 | 4.50 |
| | | | 23.62 | 5.00 |




**Remarks**
Refusal at 4.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

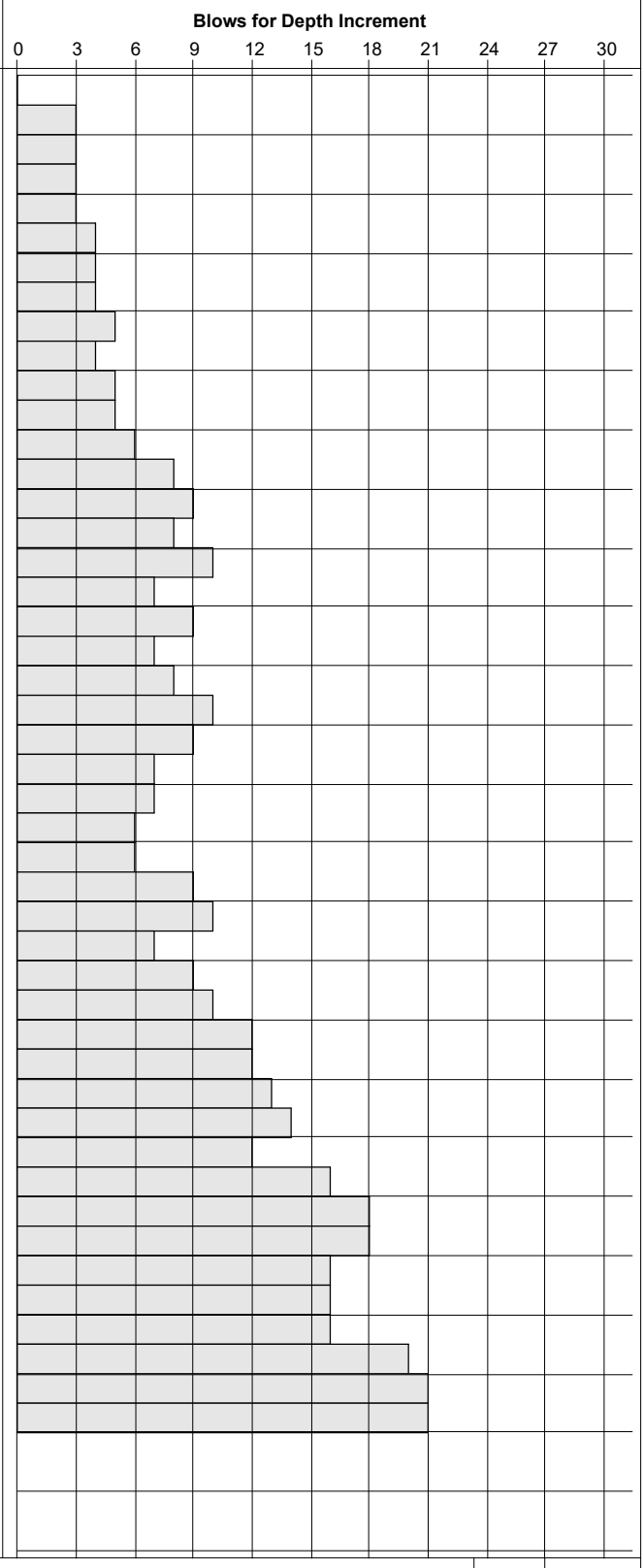
**Figure No.**
13642-03-24.DP127

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP128 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 27.84 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705975.3 E 776417.7 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 27.84 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 27.34 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 4 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 5 | | 26.84 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 6 | | | |
| 1.30-1.40 | 8 | | | |
| 1.40-1.50 | 9 | | | |
| 1.50-1.60 | 8 | | 26.34 | 1.50 |
| 1.60-1.70 | 10 | | | |
| 1.70-1.80 | 7 | | | |
| 1.80-1.90 | 9 | | | |
| 1.90-2.00 | 7 | | | |
| 2.00-2.10 | 8 | | 25.84 | 2.00 |
| 2.10-2.20 | 10 | | | |
| 2.20-2.30 | 9 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 6 | | 25.34 | 2.50 |
| 2.60-2.70 | 6 | | | |
| 2.70-2.80 | 9 | | | |
| 2.80-2.90 | 10 | | | |
| 2.90-3.00 | 7 | | | |
| 3.00-3.10 | 9 | | 24.84 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 12 | | | |
| 3.30-3.40 | 12 | | | |
| 3.40-3.50 | 13 | | | |
| 3.50-3.60 | 14 | | 24.34 | 3.50 |
| 3.60-3.70 | 12 | | | |
| 3.70-3.80 | 16 | | | |
| 3.80-3.90 | 18 | | | |
| 3.90-4.00 | 18 | | | |
| 4.00-4.10 | 16 | | 23.84 | 4.00 |
| 4.10-4.20 | 16 | | | |
| 4.20-4.30 | 16 | | | |
| 4.30-4.40 | 20 | | | |
| 4.40-4.50 | 21 | | | |
| 4.50-4.60 | 21 | | 23.34 | 4.50 |
| | | | 22.84 | 5.00 |




**Remarks**
Refusal at 4.60m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

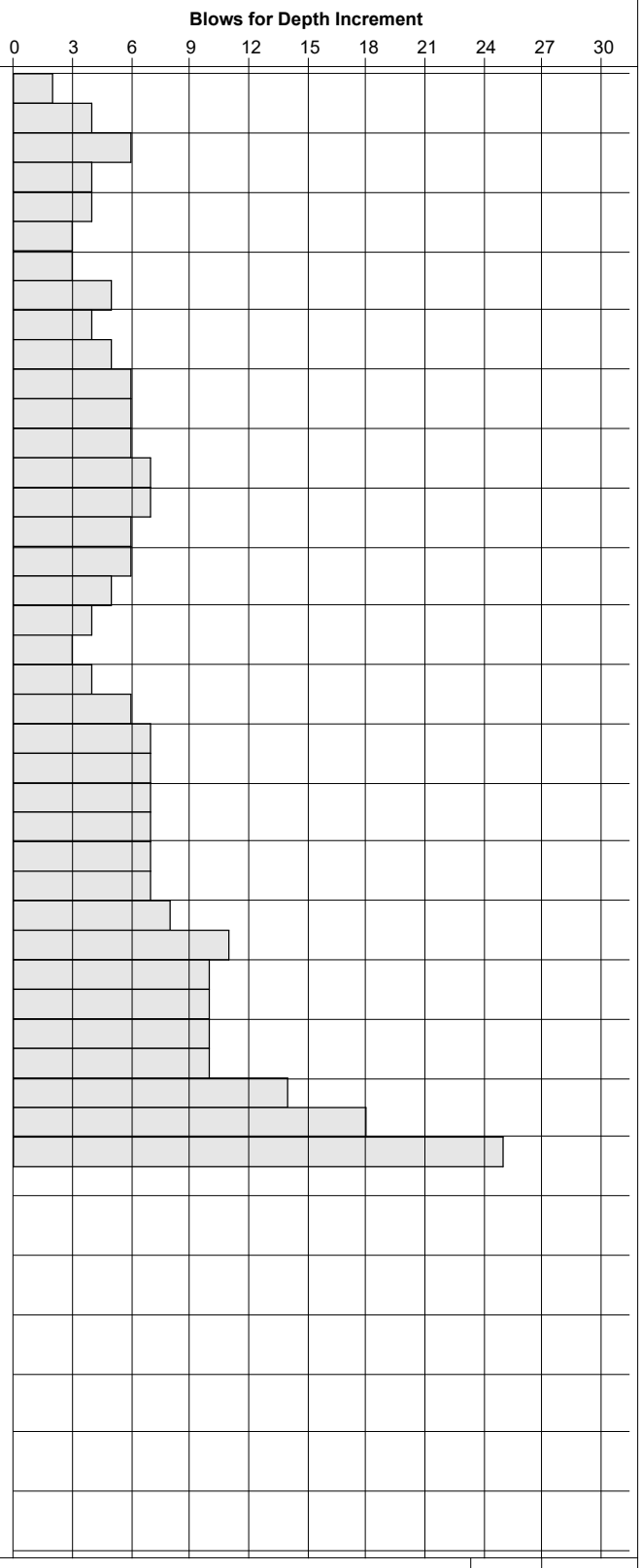
**Figure No.**
13642-03-24.DP128

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP129 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 25.38 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705998.8 E 776411.2 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 25.38 | 0.00 |
| 0.10-0.20 | 4 | | | |
| 0.20-0.30 | 6 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 3 | | 24.88 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 6 | | 24.38 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 6 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 6 | | 23.88 | 1.50 |
| 1.60-1.70 | 6 | | | |
| 1.70-1.80 | 5 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 4 | | 23.38 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 7 | | 22.88 | 2.50 |
| 2.60-2.70 | 7 | | | |
| 2.70-2.80 | 7 | | | |
| 2.80-2.90 | 8 | | | |
| 2.90-3.00 | 11 | | | |
| 3.00-3.10 | 10 | | 22.38 | 3.00 |
| 3.10-3.20 | 10 | | | |
| 3.20-3.30 | 10 | | | |
| 3.30-3.40 | 10 | | | |
| 3.40-3.50 | 14 | | | |
| 3.50-3.60 | 18 | | 21.88 | 3.50 |
| 3.60-3.70 | 25 | | | |
| | | | 21.38 | 4.00 |
| | | | 20.88 | 4.50 |
| | | | 20.38 | 5.00 |




**Remarks**
Refusal at 3.70m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

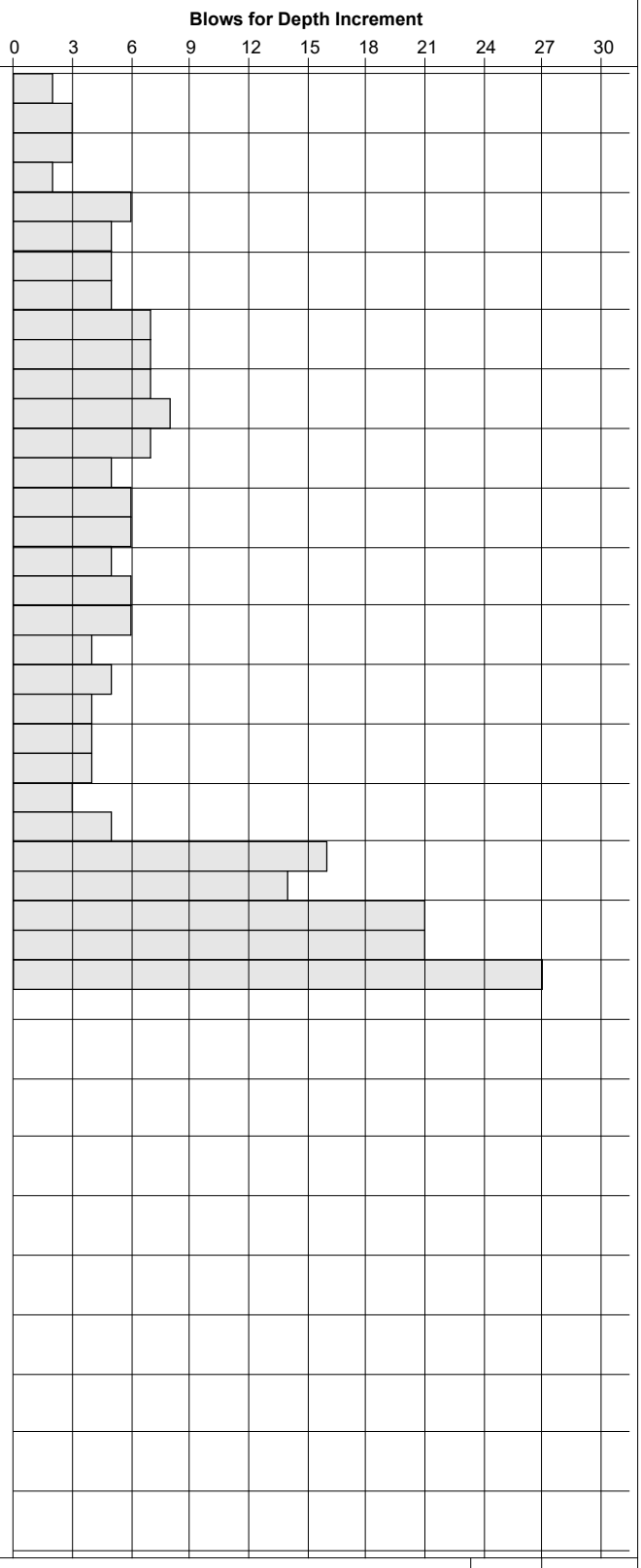
**Figure No.**
13642-03-24.DP129

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP130 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 27.45 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705871.6 E 776374.5 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 27.45 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 2 | | | |
| 0.40-0.50 | 6 | | | |
| 0.50-0.60 | 5 | | 26.95 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 7 | | | |
| 0.90-1.00 | 7 | | | |
| 1.00-1.10 | 7 | | 26.45 | 1.00 |
| 1.10-1.20 | 8 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 6 | | | |
| 1.50-1.60 | 6 | | 25.95 | 1.50 |
| 1.60-1.70 | 5 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 6 | | | |
| 1.90-2.00 | 4 | | | |
| 2.00-2.10 | 5 | | 25.45 | 2.00 |
| 2.10-2.20 | 4 | | | |
| 2.20-2.30 | 4 | | | |
| 2.30-2.40 | 4 | | | |
| 2.40-2.50 | 3 | | | |
| 2.50-2.60 | 5 | | 24.95 | 2.50 |
| 2.60-2.70 | 16 | | | |
| 2.70-2.80 | 14 | | | |
| 2.80-2.90 | 21 | | | |
| 2.90-3.00 | 21 | | | |
| 3.00-3.10 | 27 | | 24.45 | 3.00 |
| | | | 23.95 | 3.50 |
| | | | 23.45 | 4.00 |
| | | | 22.95 | 4.50 |
| | | | 22.45 | 5.00 |




**Remarks**
Refusal at 3.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

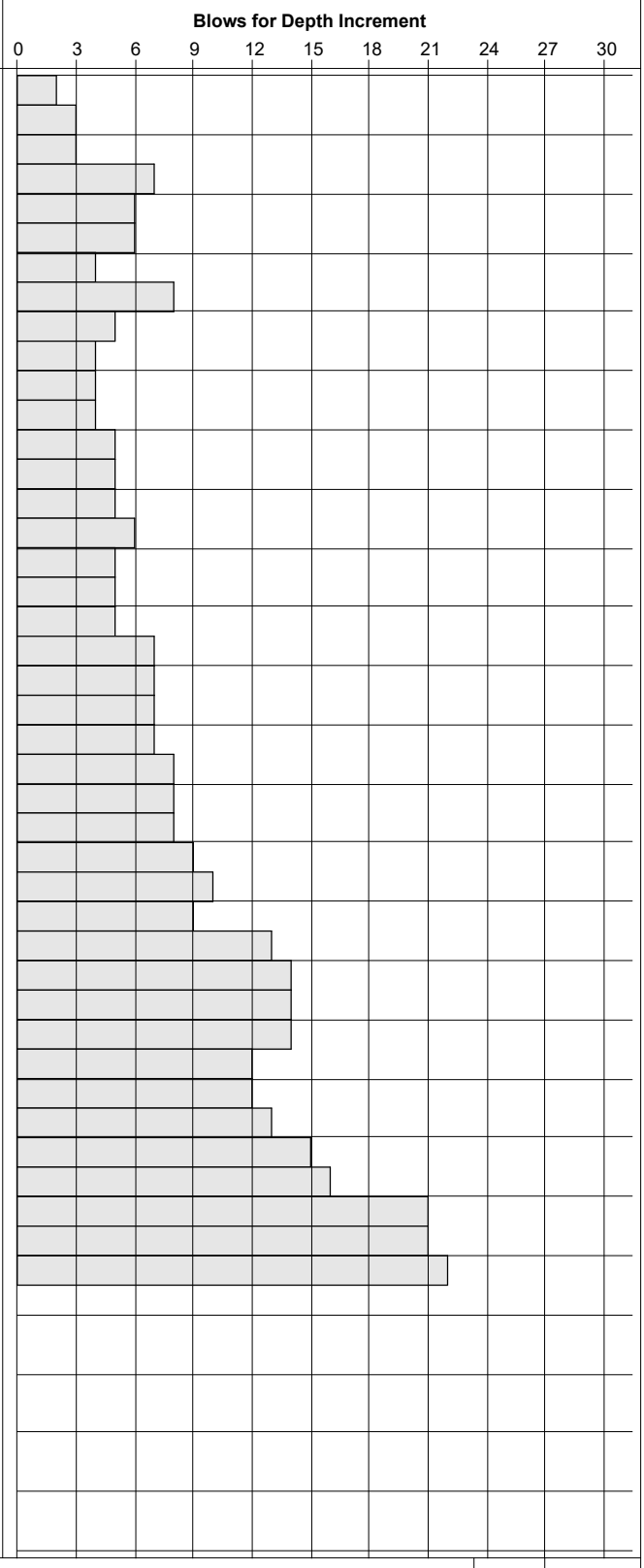
**Figure No.**
13642-03-24.DP130

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP131 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 27.64 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705895.8 E 776378.4 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 27.64 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 7 | | | |
| 0.40-0.50 | 6 | | | |
| 0.50-0.60 | 6 | | 27.14 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 8 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 26.64 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 6 | | 26.14 | 1.50 |
| 1.60-1.70 | 5 | | | |
| 1.70-1.80 | 5 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 7 | | | |
| 2.00-2.10 | 7 | | 25.64 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 8 | | | |
| 2.50-2.60 | 8 | | 25.14 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 10 | | | |
| 2.80-2.90 | 9 | | | |
| 2.90-3.00 | 13 | | | |
| 3.00-3.10 | 14 | | 24.64 | 3.00 |
| 3.10-3.20 | 14 | | | |
| 3.20-3.30 | 14 | | | |
| 3.30-3.40 | 12 | | | |
| 3.40-3.50 | 12 | | | |
| 3.50-3.60 | 13 | | 24.14 | 3.50 |
| 3.60-3.70 | 15 | | | |
| 3.70-3.80 | 16 | | | |
| 3.80-3.90 | 21 | | | |
| 3.90-4.00 | 21 | | | |
| 4.00-4.10 | 22 | | 23.64 | 4.00 |
| | | | 23.14 | 4.50 |
| | | | 22.64 | 5.00 |




**Remarks**
Refusal at 4.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

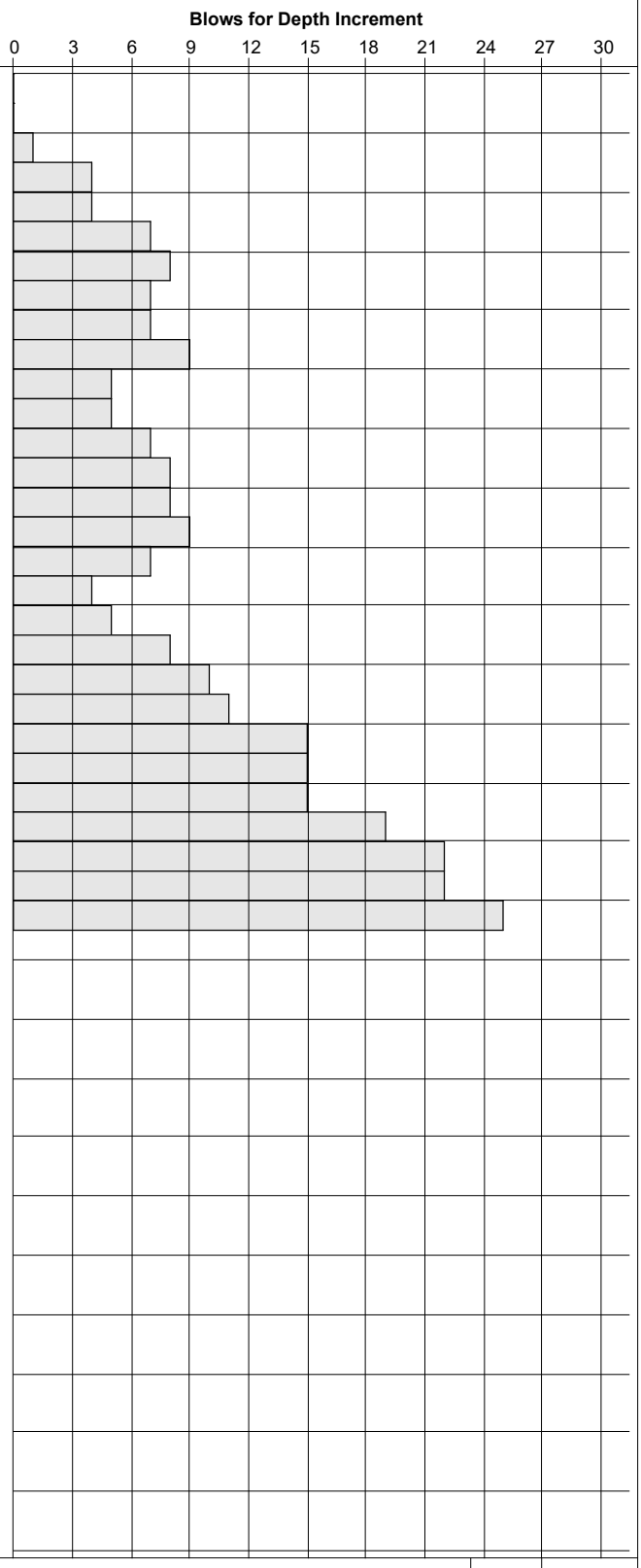
**Figure No.**
13642-03-24.DP131

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP132 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 27.63 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705905.4 E 776378.6 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 27.63 | 0.00 |
| 0.10-0.20 | 0 | | | |
| 0.20-0.30 | 1 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 7 | | 27.13 | 0.50 |
| 0.60-0.70 | 8 | | | |
| 0.70-0.80 | 7 | | | |
| 0.80-0.90 | 7 | | | |
| 0.90-1.00 | 9 | | | |
| 1.00-1.10 | 5 | | 26.63 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 8 | | | |
| 1.40-1.50 | 8 | | | |
| 1.50-1.60 | 9 | | 26.13 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 5 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 10 | | 25.63 | 2.00 |
| 2.10-2.20 | 11 | | | |
| 2.20-2.30 | 15 | | | |
| 2.30-2.40 | 15 | | | |
| 2.40-2.50 | 15 | | | |
| 2.50-2.60 | 19 | | 25.13 | 2.50 |
| 2.60-2.70 | 22 | | | |
| 2.70-2.80 | 22 | | | |
| 2.80-2.90 | 25 | | | |
| | | | 24.63 | 3.00 |
| | | | 24.13 | 3.50 |
| | | | 23.63 | 4.00 |
| | | | 23.13 | 4.50 |
| | | | 22.63 | 5.00 |




**Remarks**
Refusal at 2.90m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

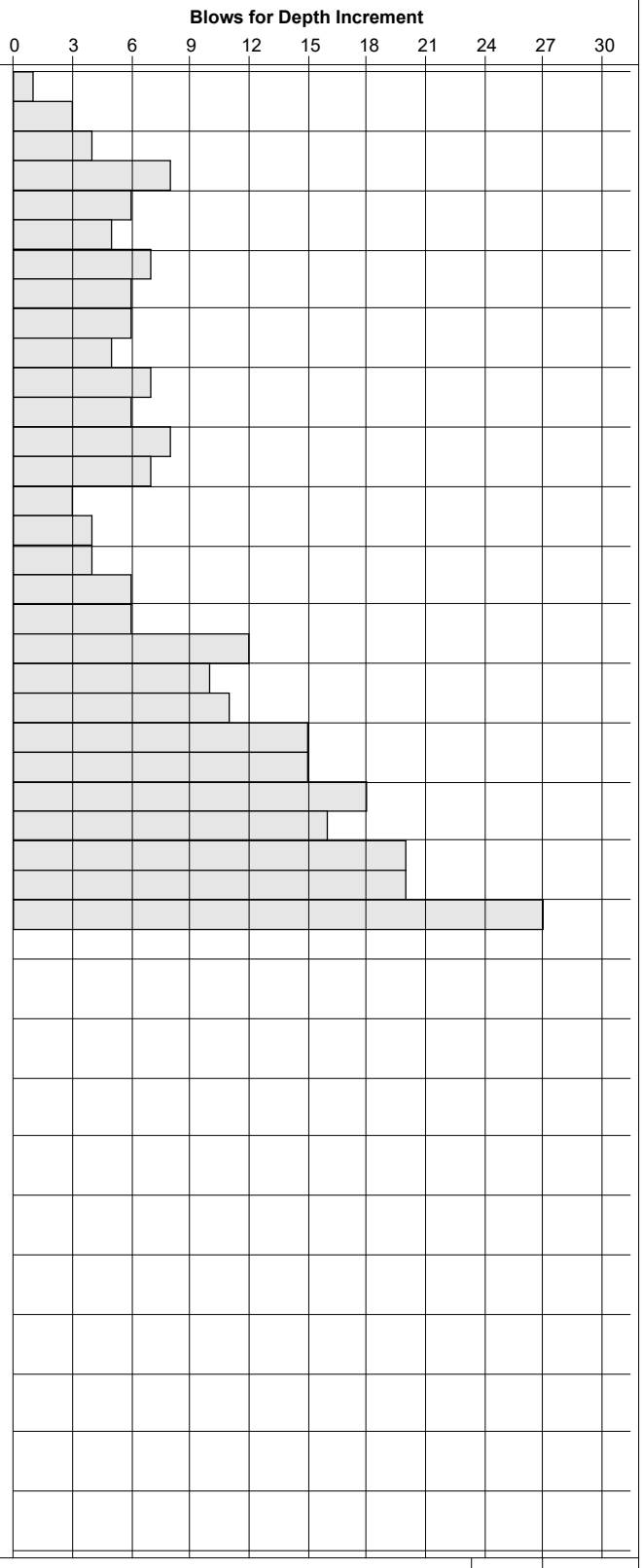
**Figure No.**
13642-03-24.DP132

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP133 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 26.45 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705888.4 E 776354.3 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 1 | | 26.45 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 8 | | | |
| 0.40-0.50 | 6 | | | |
| 0.50-0.60 | 5 | | 25.95 | 0.50 |
| 0.60-0.70 | 7 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 5 | | | |
| 1.00-1.10 | 7 | | 25.45 | 1.00 |
| 1.10-1.20 | 6 | | | |
| 1.20-1.30 | 8 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 4 | | 24.95 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 6 | | | |
| 1.90-2.00 | 12 | | | |
| 2.00-2.10 | 10 | | 24.45 | 2.00 |
| 2.10-2.20 | 11 | | | |
| 2.20-2.30 | 15 | | | |
| 2.30-2.40 | 15 | | | |
| 2.40-2.50 | 18 | | | |
| 2.50-2.60 | 16 | | 23.95 | 2.50 |
| 2.60-2.70 | 20 | | | |
| 2.70-2.80 | 20 | | | |
| 2.80-2.90 | 27 | | | |
| | | | 23.45 | 3.00 |
| | | | 22.95 | 3.50 |
| | | | 22.45 | 4.00 |
| | | | 21.95 | 4.50 |
| | | | 21.45 | 5.00 |




**Remarks**
Refusal at 2.90m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

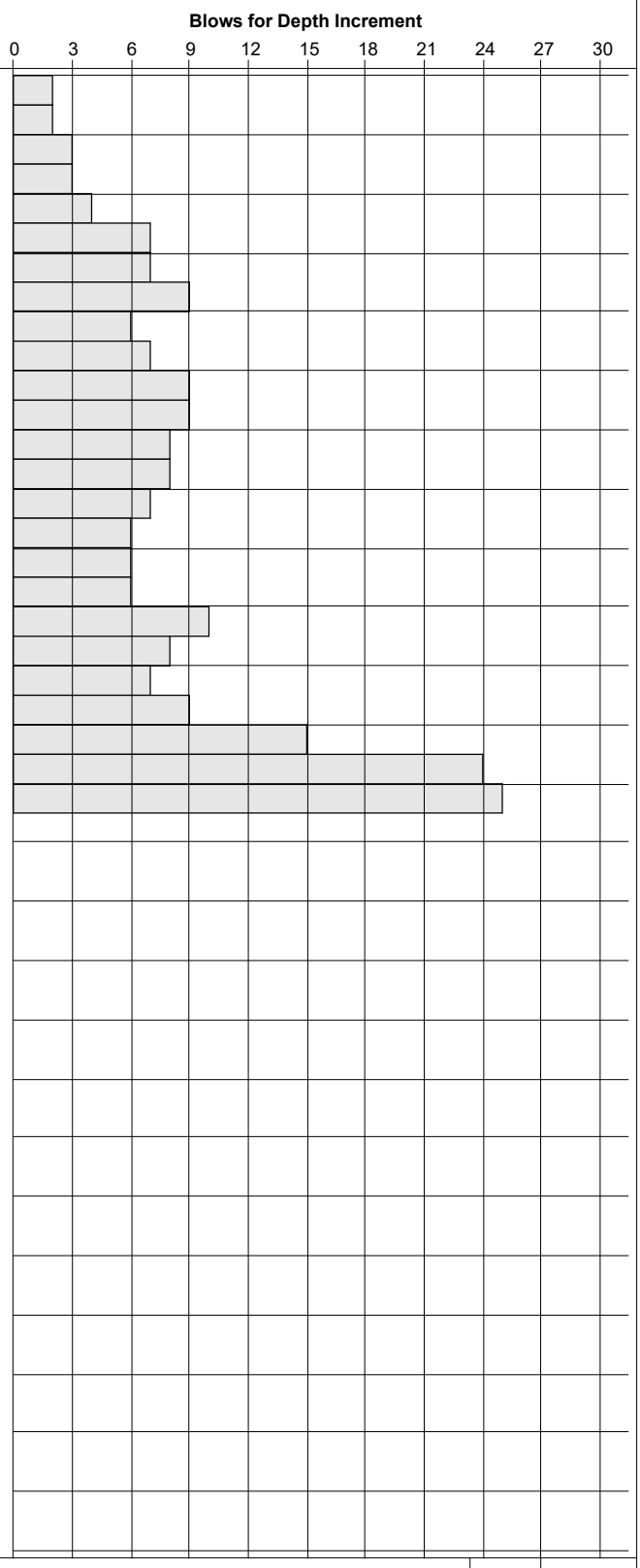
**Figure No.**
13642-03-24.DP133

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP134 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 25.66 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705866.6 E 776335.4 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 25.66 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 7 | | 25.16 | 0.50 |
| 0.60-0.70 | 7 | | | |
| 0.70-0.80 | 9 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 7 | | | |
| 1.00-1.10 | 9 | | 24.66 | 1.00 |
| 1.10-1.20 | 9 | | | |
| 1.20-1.30 | 8 | | | |
| 1.30-1.40 | 8 | | | |
| 1.40-1.50 | 7 | | | |
| 1.50-1.60 | 6 | | 24.16 | 1.50 |
| 1.60-1.70 | 6 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 10 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 7 | | 23.66 | 2.00 |
| 2.10-2.20 | 9 | | | |
| 2.20-2.30 | 15 | | | |
| 2.30-2.40 | 24 | | | |
| 2.40-2.50 | 25 | | 23.16 | 2.50 |
| | | | 22.66 | 3.00 |
| | | | 22.16 | 3.50 |
| | | | 21.66 | 4.00 |
| | | | 21.16 | 4.50 |
| | | | 20.66 | 5.00 |




**Remarks**
Refusal at 2.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

**Figure No.**
13642-03-24.DP134

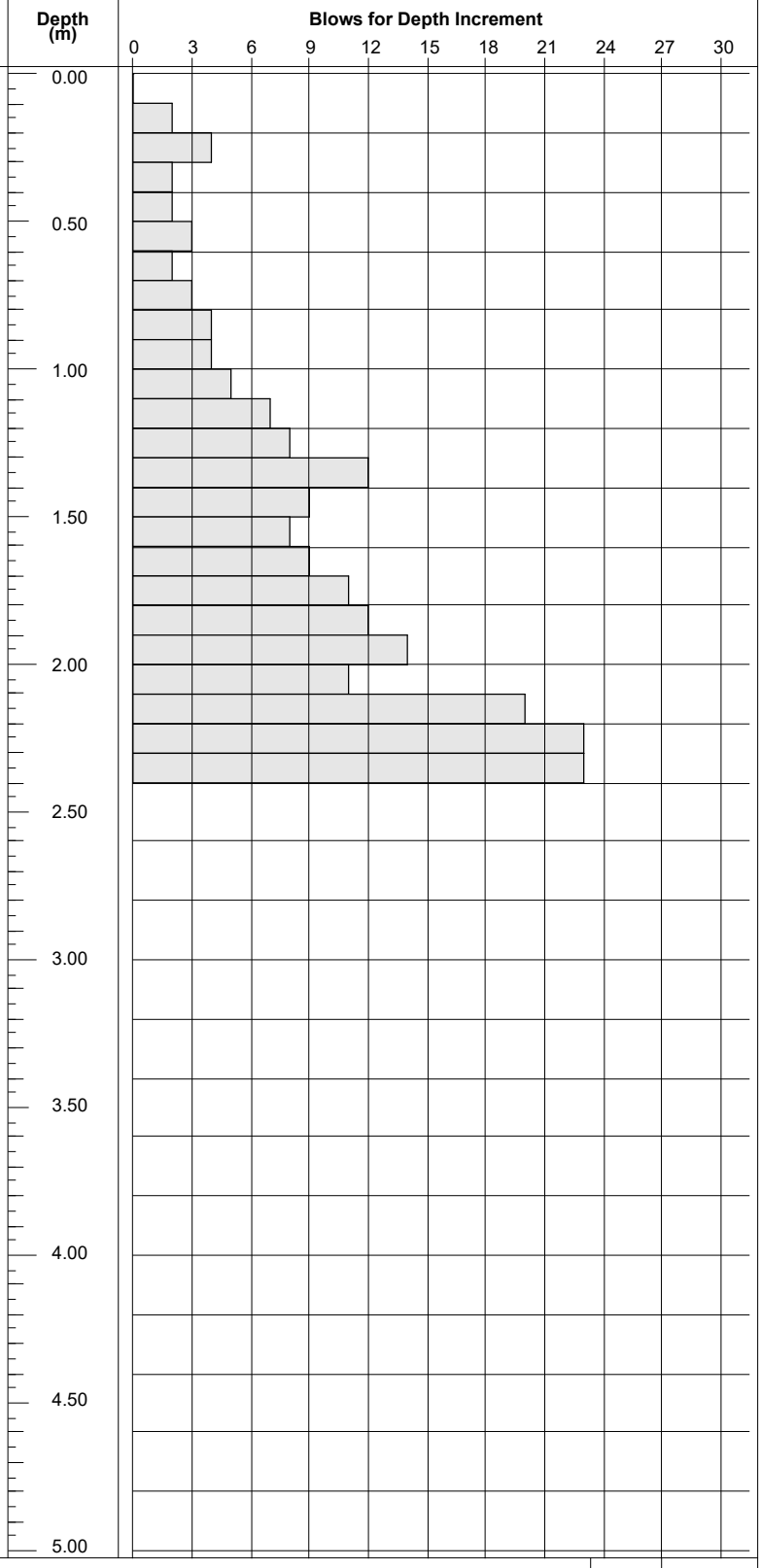
# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP135 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | | | 13642-03-24 |

| Location | Dates | Engineer | Sheet |
|---|---|---|---|
| | 12/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) |
|---|---|---|---|
| 0.00-0.10 | 0 | | |
| 0.10-0.20 | 2 | | |
| 0.20-0.30 | 4 | | |
| 0.30-0.40 | 2 | | |
| 0.40-0.50 | 2 | | |
| 0.50-0.60 | 3 | | |
| 0.60-0.70 | 2 | | |
| 0.70-0.80 | 3 | | |
| 0.80-0.90 | 4 | | |
| 0.90-1.00 | 4 | | |
| 1.00-1.10 | 5 | | |
| 1.10-1.20 | 7 | | |
| 1.20-1.30 | 8 | | |
| 1.30-1.40 | 12 | | |
| 1.40-1.50 | 9 | | |
| 1.50-1.60 | 8 | | |
| 1.60-1.70 | 9 | | |
| 1.70-1.80 | 11 | | |
| 1.80-1.90 | 12 | | |
| 1.90-2.00 | 14 | | |
| 2.00-2.10 | 11 | | |
| 2.10-2.20 | 20 | | |
| 2.20-2.30 | 23 | | |
| 2.30-2.40 | 23 | | |




**Remarks**
Refusal at 2.40m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

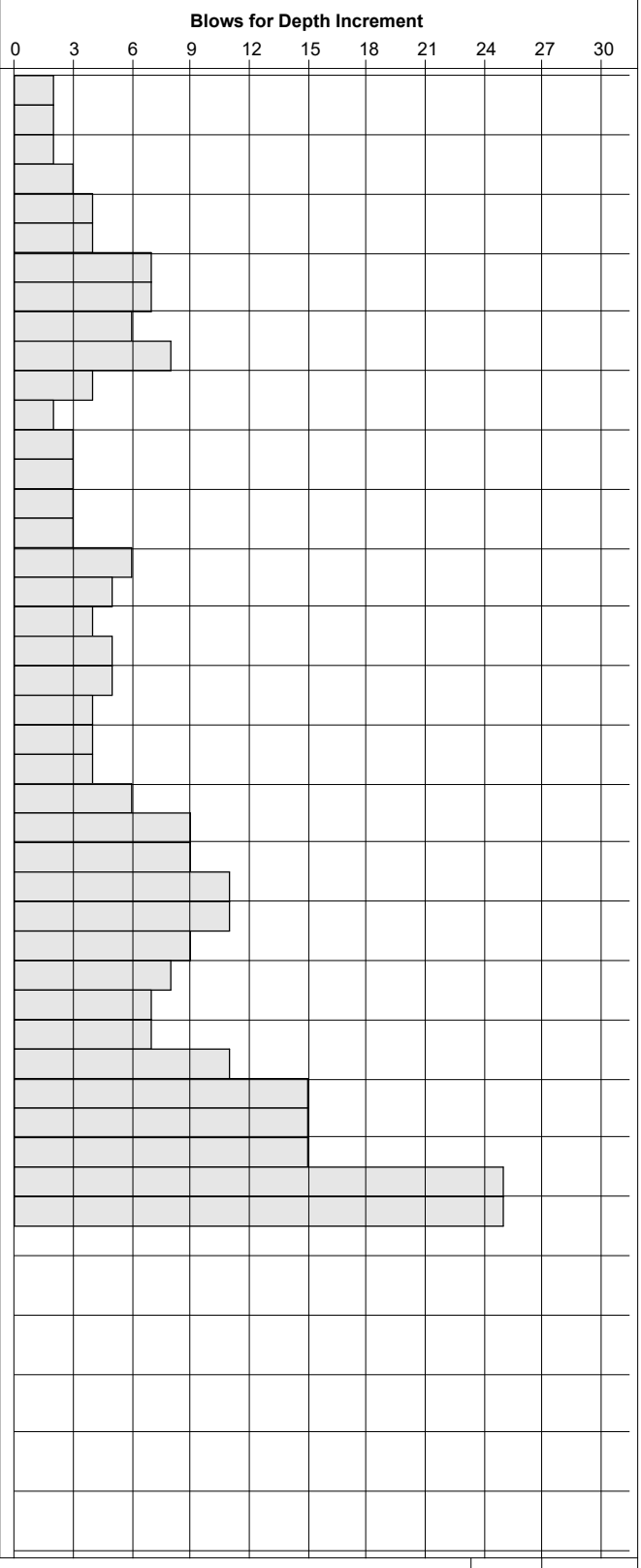
**Figure No.**
13642-03-24.DP135

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP137 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 24.56 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705861.5 E 776312.8 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 24.56 | 0.00 |
| 0.10-0.20 | 2 | | | |
| 0.20-0.30 | 2 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 4 | | 24.06 | 0.50 |
| 0.60-0.70 | 7 | | | |
| 0.70-0.80 | 7 | | | |
| 0.80-0.90 | 6 | | | |
| 0.90-1.00 | 8 | | | |
| 1.00-1.10 | 4 | | 23.56 | 1.00 |
| 1.10-1.20 | 2 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 3 | | | |
| 1.40-1.50 | 3 | | | |
| 1.50-1.60 | 3 | | 23.06 | 1.50 |
| 1.60-1.70 | 6 | | | |
| 1.70-1.80 | 5 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 5 | | | |
| 2.00-2.10 | 5 | | 22.56 | 2.00 |
| 2.10-2.20 | 4 | | | |
| 2.20-2.30 | 4 | | | |
| 2.30-2.40 | 4 | | | |
| 2.40-2.50 | 6 | | | |
| 2.50-2.60 | 9 | | 22.06 | 2.50 |
| 2.60-2.70 | 9 | | | |
| 2.70-2.80 | 11 | | | |
| 2.80-2.90 | 11 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 8 | | 21.56 | 3.00 |
| 3.10-3.20 | 7 | | | |
| 3.20-3.30 | 7 | | | |
| 3.30-3.40 | 11 | | | |
| 3.40-3.50 | 15 | | | |
| 3.50-3.60 | 15 | | 21.06 | 3.50 |
| 3.60-3.70 | 15 | | | |
| 3.70-3.80 | 25 | | | |
| 3.80-3.90 | 25 | | | |
| | | | 20.56 | 4.00 |
| | | | 20.06 | 4.50 |
| | | | 19.56 | 5.00 |




**Remarks**
Refusal at 3.90m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

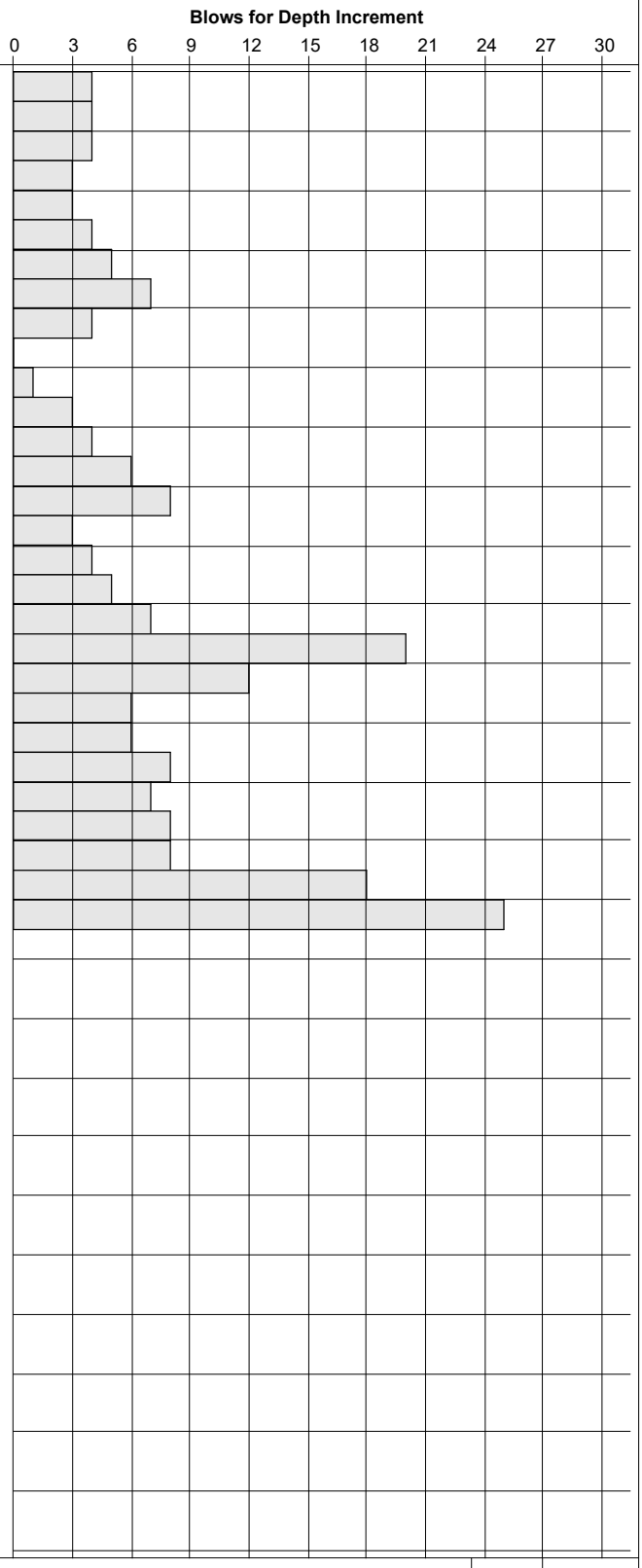
**Figure No.**
13642-03-24.DP137

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP138 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 23.90 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705892.3 E 776299.5 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 4 | | 23.90 | 0.00 |
| 0.10-0.20 | 4 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 4 | | 23.40 | 0.50 |
| 0.60-0.70 | 5 | | | |
| 0.70-0.80 | 7 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 0 | | | |
| 1.00-1.10 | 1 | | 22.90 | 1.00 |
| 1.10-1.20 | 3 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 6 | | | |
| 1.40-1.50 | 8 | | | |
| 1.50-1.60 | 3 | | 22.40 | 1.50 |
| 1.60-1.70 | 4 | | | |
| 1.70-1.80 | 5 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 20 | | | |
| 2.00-2.10 | 12 | | 21.90 | 2.00 |
| 2.10-2.20 | 6 | | | |
| 2.20-2.30 | 6 | | | |
| 2.30-2.40 | 8 | | | |
| 2.40-2.50 | 7 | | | |
| 2.50-2.60 | 8 | | 21.40 | 2.50 |
| 2.60-2.70 | 8 | | | |
| 2.70-2.80 | 18 | | | |
| 2.80-2.90 | 25 | | | |
| | | | 20.90 | 3.00 |
| | | | 20.40 | 3.50 |
| | | | 19.90 | 4.00 |
| | | | 19.40 | 4.50 |
| | | | 18.90 | 5.00 |




**Remarks**
Refusal at 2.90m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

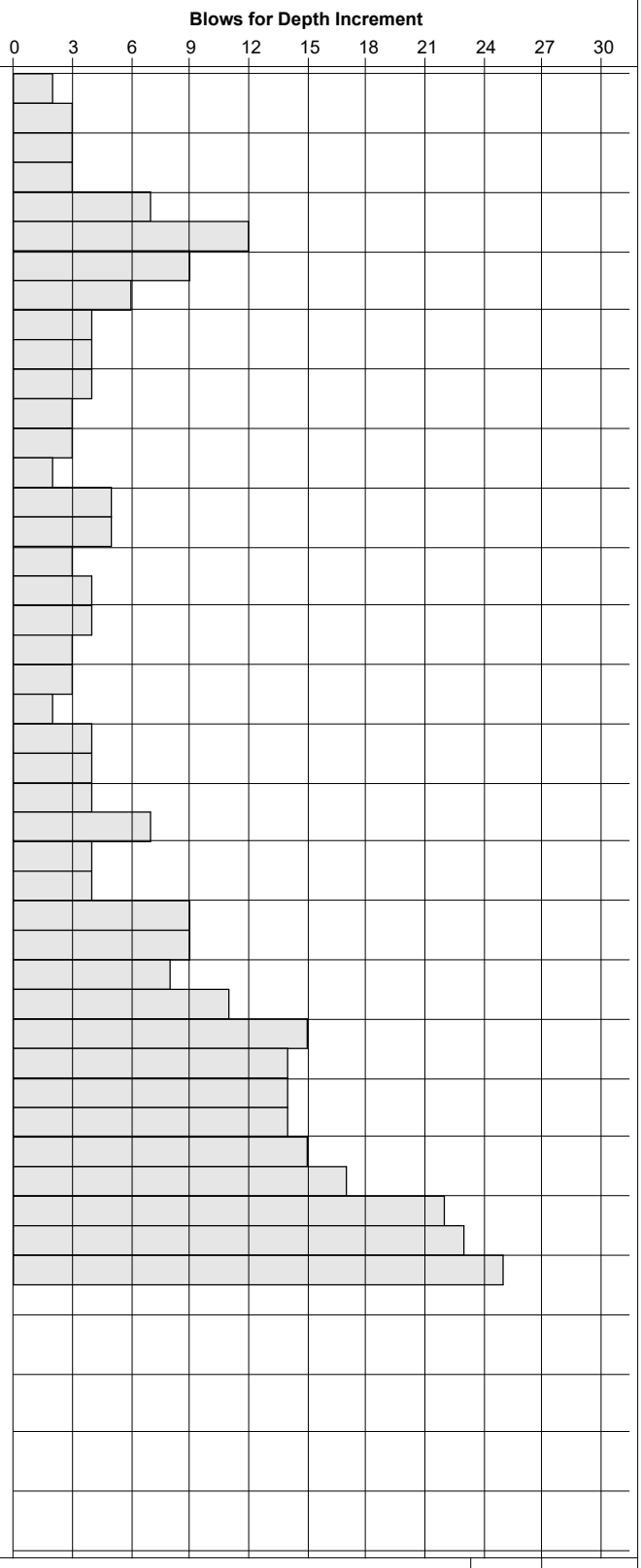
**Figure No.**
13642-03-24.DP138

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP140 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 22.73 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705859.6 E 776274.6 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 2 | | 22.73 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 7 | | | |
| 0.50-0.60 | 12 | | 22.23 | 0.50 |
| 0.60-0.70 | 9 | | | |
| 0.70-0.80 | 6 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 21.73 | 1.00 |
| 1.10-1.20 | 3 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 2 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 5 | | 21.23 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 4 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 20.73 | 2.00 |
| 2.10-2.20 | 2 | | | |
| 2.20-2.30 | 4 | | | |
| 2.30-2.40 | 4 | | | |
| 2.40-2.50 | 4 | | | |
| 2.50-2.60 | 7 | | 20.23 | 2.50 |
| 2.60-2.70 | 4 | | | |
| 2.70-2.80 | 4 | | | |
| 2.80-2.90 | 9 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 8 | | 19.73 | 3.00 |
| 3.10-3.20 | 11 | | | |
| 3.20-3.30 | 15 | | | |
| 3.30-3.40 | 14 | | | |
| 3.40-3.50 | 14 | | | |
| 3.50-3.60 | 14 | | 19.23 | 3.50 |
| 3.60-3.70 | 15 | | | |
| 3.70-3.80 | 17 | | | |
| 3.80-3.90 | 22 | | | |
| 3.90-4.00 | 23 | | | |
| 4.00-4.10 | 25 | | 18.73 | 4.00 |
| | | | 18.23 | 4.50 |
| | | | 17.73 | 5.00 |




**Remarks**
Refusal at 4.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

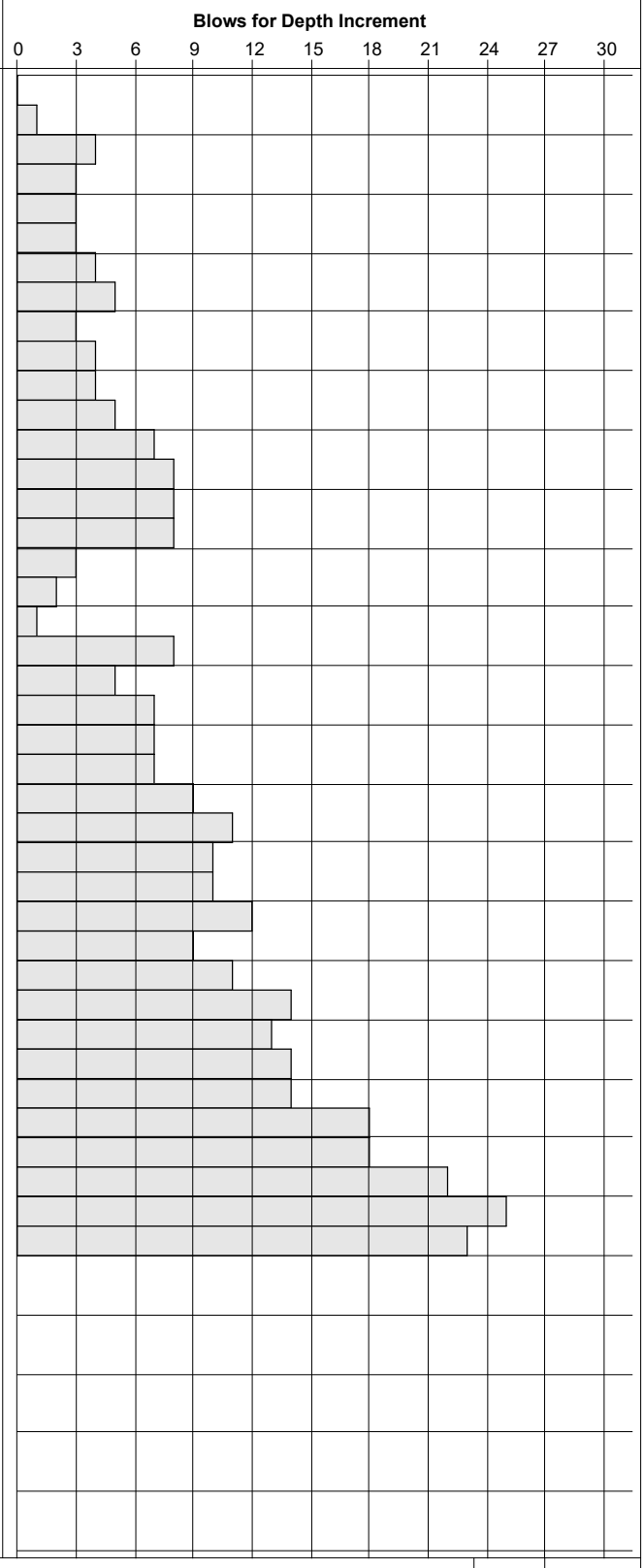
**Figure No.**
13642-03-24.DP140

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP141 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 23.71 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705917.3 E 776293.3 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 23.71 | 0.00 |
| 0.10-0.20 | 1 | | | |
| 0.20-0.30 | 4 | | | |
| 0.30-0.40 | 3 | | | |
| 0.40-0.50 | 3 | | | |
| 0.50-0.60 | 3 | | 23.21 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 3 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 22.71 | 1.00 |
| 1.10-1.20 | 5 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 8 | | | |
| 1.40-1.50 | 8 | | | |
| 1.50-1.60 | 8 | | 22.21 | 1.50 |
| 1.60-1.70 | 3 | | | |
| 1.70-1.80 | 2 | | | |
| 1.80-1.90 | 1 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 5 | | 21.71 | 2.00 |
| 2.10-2.20 | 7 | | | |
| 2.20-2.30 | 7 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 9 | | | |
| 2.50-2.60 | 11 | | 21.21 | 2.50 |
| 2.60-2.70 | 10 | | | |
| 2.70-2.80 | 10 | | | |
| 2.80-2.90 | 12 | | | |
| 2.90-3.00 | 9 | | | |
| 3.00-3.10 | 11 | | 20.71 | 3.00 |
| 3.10-3.20 | 14 | | | |
| 3.20-3.30 | 13 | | | |
| 3.30-3.40 | 14 | | | |
| 3.40-3.50 | 14 | | | |
| 3.50-3.60 | 18 | | 20.21 | 3.50 |
| 3.60-3.70 | 18 | | | |
| 3.70-3.80 | 22 | | | |
| 3.80-3.90 | 25 | | | |
| 3.90-4.00 | 23 | | 19.71 | 4.00 |
| | | | 19.21 | 4.50 |
| | | | 18.71 | 5.00 |




**Remarks**
Refusal at 4.00m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

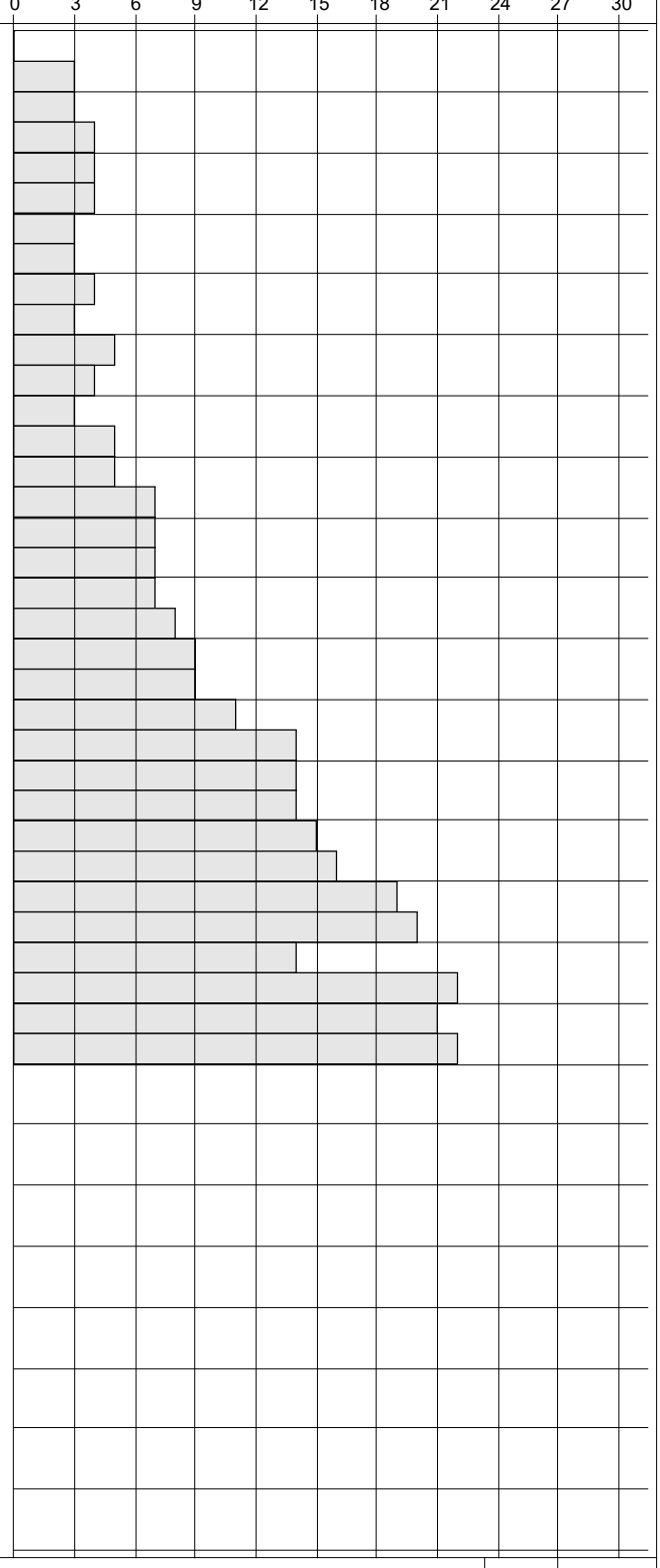
**Figure No.**
13642-03-24.DP141

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP142 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 23.57 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705924.8 E 776287.4 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 0 | | 23.57 | 0.00 |
| 0.10-0.20 | 3 | | | |
| 0.20-0.30 | 3 | | | |
| 0.30-0.40 | 4 | | | |
| 0.40-0.50 | 4 | | | |
| 0.50-0.60 | 4 | | 23.07 | 0.50 |
| 0.60-0.70 | 3 | | | |
| 0.70-0.80 | 3 | | | |
| 0.80-0.90 | 4 | | | |
| 0.90-1.00 | 3 | | | |
| 1.00-1.10 | 5 | | 22.57 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 3 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 7 | | 22.07 | 1.50 |
| 1.60-1.70 | 7 | | | |
| 1.70-1.80 | 7 | | | |
| 1.80-1.90 | 7 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 9 | | 21.57 | 2.00 |
| 2.10-2.20 | 9 | | | |
| 2.20-2.30 | 11 | | | |
| 2.30-2.40 | 14 | | | |
| 2.40-2.50 | 14 | | | |
| 2.50-2.60 | 14 | | 21.07 | 2.50 |
| 2.60-2.70 | 15 | | | |
| 2.70-2.80 | 16 | | | |
| 2.80-2.90 | 19 | | | |
| 2.90-3.00 | 20 | | | |
| 3.00-3.10 | 14 | | 20.57 | 3.00 |
| 3.10-3.20 | 22 | | | |
| 3.20-3.30 | 21 | | | |
| 3.30-3.40 | 22 | | | |
| | | | 20.07 | 3.50 |
| | | | 19.57 | 4.00 |
| | | | 19.07 | 4.50 |
| | | | 18.57 | 5.00 |




**Remarks**
Refusal at 3.40m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

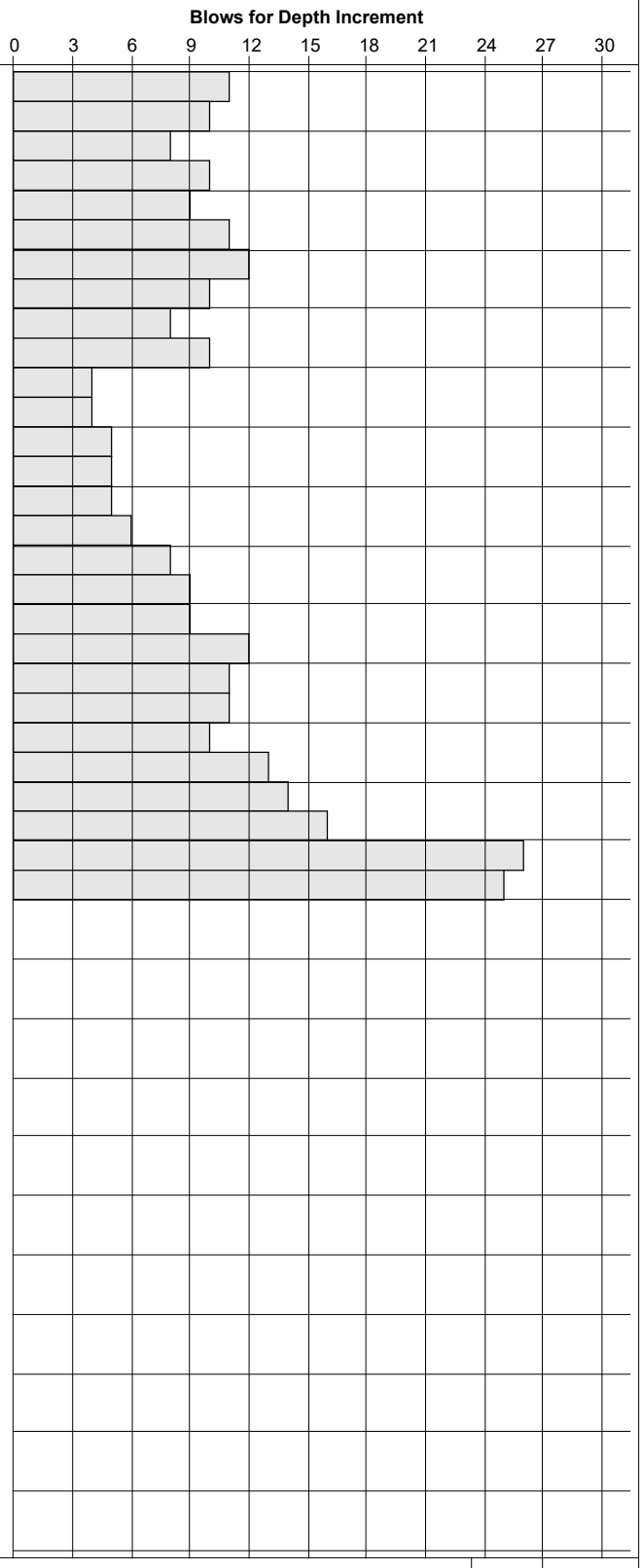
**Figure No.**
13642-03-24.DP142

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP146 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 21.76 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705899.6 E 776240.4 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 11 | | 21.76 | 0.00 |
| 0.10-0.20 | 10 | | | |
| 0.20-0.30 | 8 | | | |
| 0.30-0.40 | 10 | | | |
| 0.40-0.50 | 9 | | | |
| 0.50-0.60 | 11 | | 21.26 | 0.50 |
| 0.60-0.70 | 12 | | | |
| 0.70-0.80 | 10 | | | |
| 0.80-0.90 | 8 | | | |
| 0.90-1.00 | 10 | | | |
| 1.00-1.10 | 4 | | 20.76 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 5 | | | |
| 1.30-1.40 | 5 | | | |
| 1.40-1.50 | 5 | | | |
| 1.50-1.60 | 6 | | 20.26 | 1.50 |
| 1.60-1.70 | 8 | | | |
| 1.70-1.80 | 9 | | | |
| 1.80-1.90 | 9 | | | |
| 1.90-2.00 | 12 | | | |
| 2.00-2.10 | 11 | | 19.76 | 2.00 |
| 2.10-2.20 | 11 | | | |
| 2.20-2.30 | 10 | | | |
| 2.30-2.40 | 13 | | | |
| 2.40-2.50 | 14 | | | |
| 2.50-2.60 | 16 | | 19.26 | 2.50 |
| 2.60-2.70 | 26 | | | |
| 2.70-2.80 | 25 | | | |
| | | | 18.76 | 3.00 |
| | | | 18.26 | 3.50 |
| | | | 17.76 | 4.00 |
| | | | 17.26 | 4.50 |
| | | | 16.76 | 5.00 |




**Remarks**
Refusal at 2.80m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

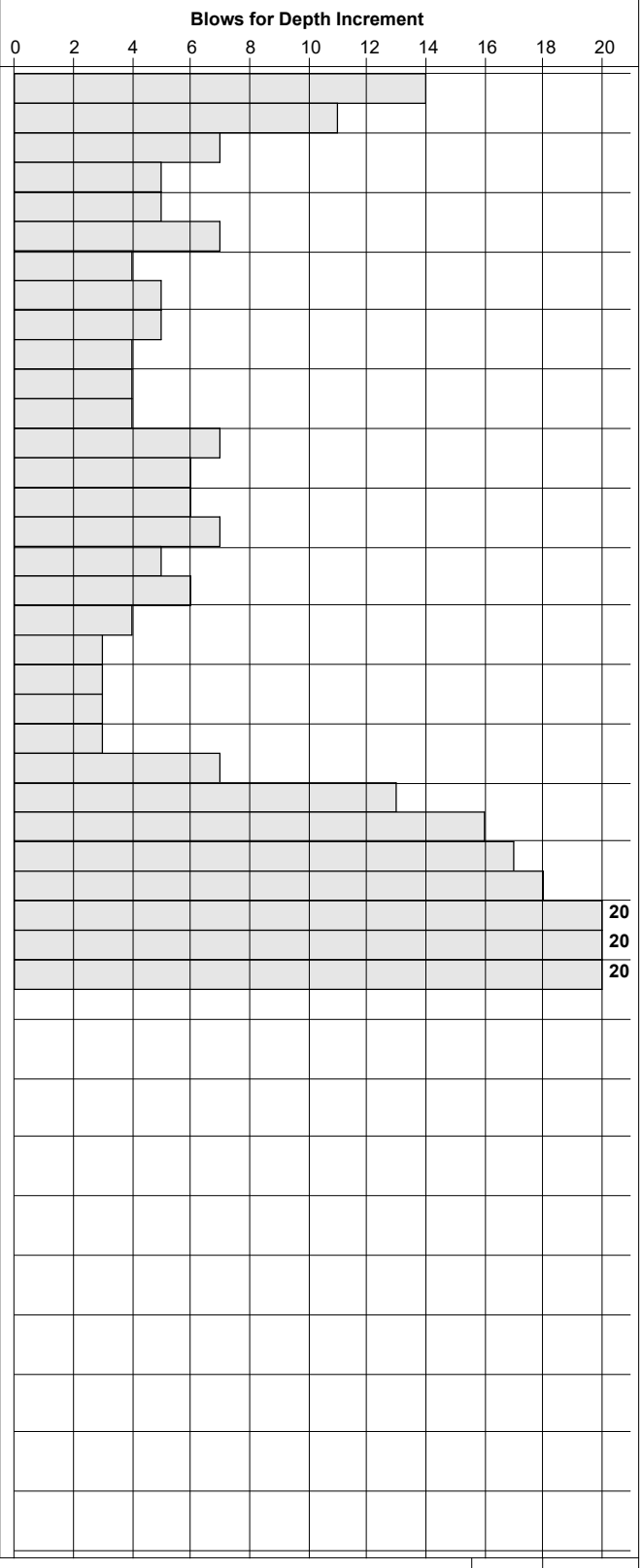
**Figure No.**
13642-03-24.DP146

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP149 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 21.03 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705911.1 E 776215.3 N | 09/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 14 | | 21.03 | 0.00 |
| 0.10-0.20 | 11 | | | |
| 0.20-0.30 | 7 | | | |
| 0.30-0.40 | 5 | | | |
| 0.40-0.50 | 5 | | | |
| 0.50-0.60 | 7 | | 20.53 | 0.50 |
| 0.60-0.70 | 4 | | | |
| 0.70-0.80 | 5 | | | |
| 0.80-0.90 | 5 | | | |
| 0.90-1.00 | 4 | | | |
| 1.00-1.10 | 4 | | 20.03 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 7 | | | |
| 1.30-1.40 | 6 | | | |
| 1.40-1.50 | 6 | | | |
| 1.50-1.60 | 7 | | 19.53 | 1.50 |
| 1.60-1.70 | 5 | | | |
| 1.70-1.80 | 6 | | | |
| 1.80-1.90 | 4 | | | |
| 1.90-2.00 | 3 | | | |
| 2.00-2.10 | 3 | | 19.03 | 2.00 |
| 2.10-2.20 | 3 | | | |
| 2.20-2.30 | 3 | | | |
| 2.30-2.40 | 7 | | | |
| 2.40-2.50 | 13 | | | |
| 2.50-2.60 | 16 | | 18.53 | 2.50 |
| 2.60-2.70 | 17 | | | |
| 2.70-2.80 | 18 | | | |
| 2.80-2.90 | 20 | | | |
| 2.90-3.00 | 20 | | | |
| 3.00-3.10 | 20 | | 18.03 | 3.00 |
| | | | 17.53 | 3.50 |
| | | | 17.03 | 4.00 |
| | | | 16.53 | 4.50 |
| | | | 16.03 | 5.00 |




**Remarks**
Refusal at 3.10m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

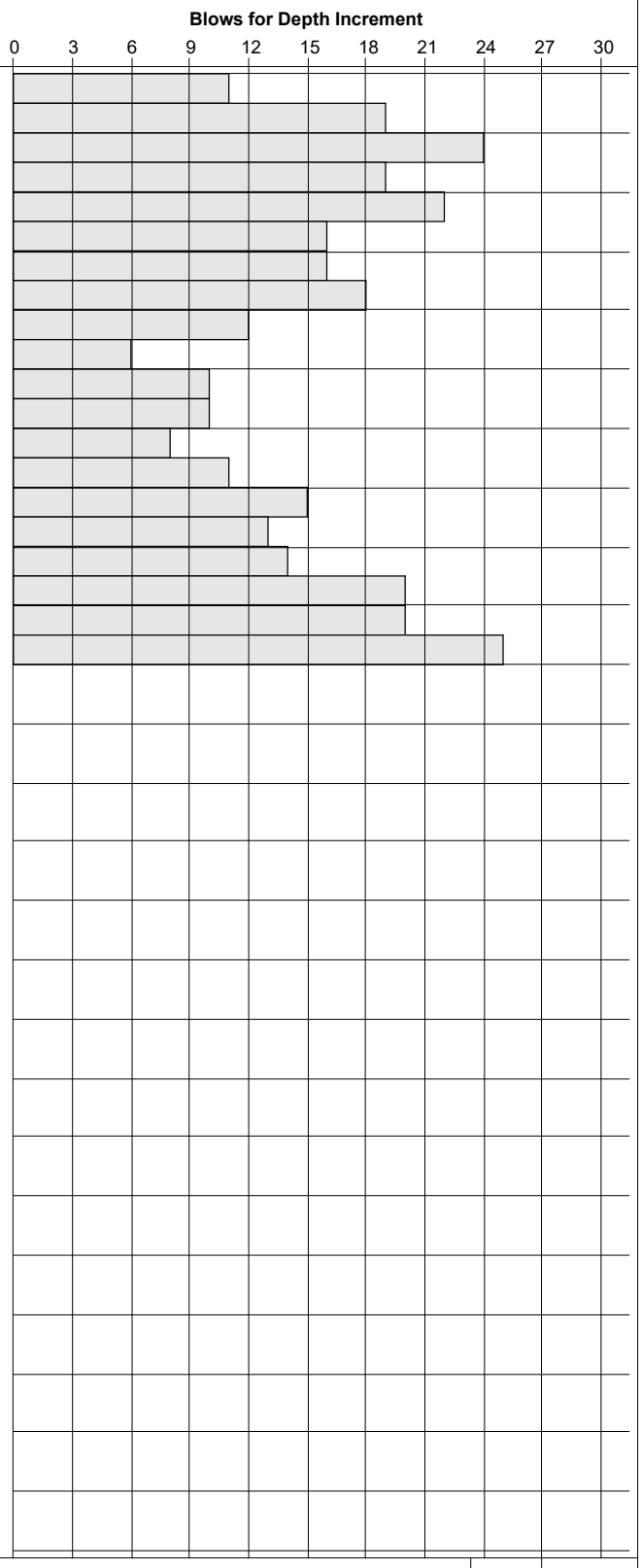
**Figure No.**
13642-03-24.DP149

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP150 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 21.40 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705956.3 E 776214.4 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 11 | | 21.40 | 0.00 |
| 0.10-0.20 | 19 | | | |
| 0.20-0.30 | 24 | | | |
| 0.30-0.40 | 19 | | | |
| 0.40-0.50 | 22 | | | |
| 0.50-0.60 | 16 | | 20.90 | 0.50 |
| 0.60-0.70 | 16 | | | |
| 0.70-0.80 | 18 | | | |
| 0.80-0.90 | 12 | | | |
| 0.90-1.00 | 6 | | | |
| 1.00-1.10 | 10 | | 20.40 | 1.00 |
| 1.10-1.20 | 10 | | | |
| 1.20-1.30 | 8 | | | |
| 1.30-1.40 | 11 | | | |
| 1.40-1.50 | 15 | | | |
| 1.50-1.60 | 13 | | 19.90 | 1.50 |
| 1.60-1.70 | 14 | | | |
| 1.70-1.80 | 20 | | | |
| 1.80-1.90 | 20 | | | |
| 1.90-2.00 | 25 | | 19.40 | 2.00 |
| | | | 18.90 | 2.50 |
| | | | 18.40 | 3.00 |
| | | | 17.90 | 3.50 |
| | | | 17.40 | 4.00 |
| | | | 16.90 | 4.50 |
| | | | 16.40 | 5.00 |




**Remarks**
Refusal at 2.00m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

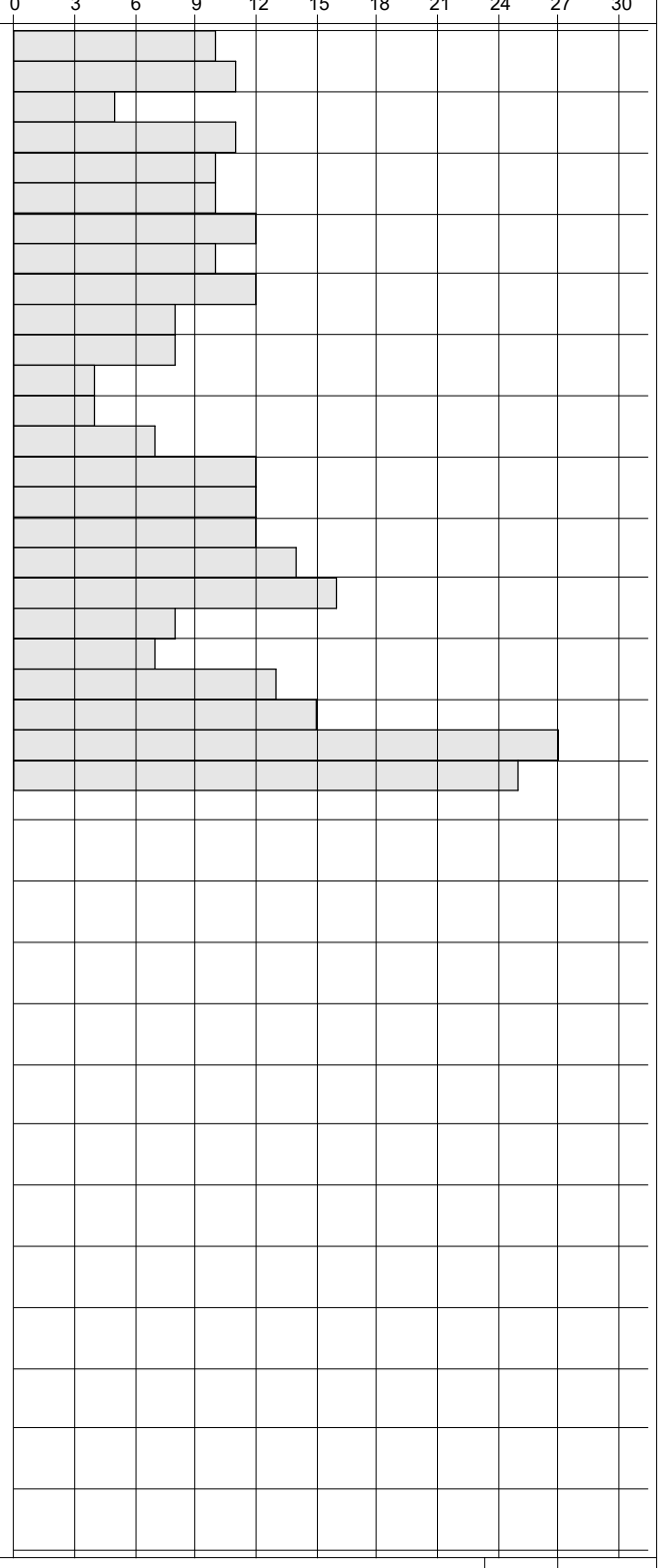
**Figure No.**
13642-03-24.DP150

# Ground Investigations Ireland Ltd
www.gii.ie

| Site | Probe Number |
|---|---|
| Old Slane Road Phase 2 | DP151 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe Heavy (DPH), Fall Height 500mm, Hamm Weight 50kg | Diameter 43.7mm, Angle 90° | 20.43 | | 13642-03-24 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | 705956.3 E 776185.3 N | 10/04/2024 | Waterman Moylan | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) | Depth (m) |
|---|---|---|---|---|
| 0.00-0.10 | 10 | | 20.43 | 0.00 |
| 0.10-0.20 | 11 | | | |
| 0.20-0.30 | 5 | | | |
| 0.30-0.40 | 11 | | | |
| 0.40-0.50 | 10 | | | |
| 0.50-0.60 | 10 | | 19.93 | 0.50 |
| 0.60-0.70 | 12 | | | |
| 0.70-0.80 | 10 | | | |
| 0.80-0.90 | 12 | | | |
| 0.90-1.00 | 8 | | | |
| 1.00-1.10 | 8 | | 19.43 | 1.00 |
| 1.10-1.20 | 4 | | | |
| 1.20-1.30 | 4 | | | |
| 1.30-1.40 | 7 | | | |
| 1.40-1.50 | 12 | | | |
| 1.50-1.60 | 12 | | 18.93 | 1.50 |
| 1.60-1.70 | 12 | | | |
| 1.70-1.80 | 14 | | | |
| 1.80-1.90 | 16 | | | |
| 1.90-2.00 | 8 | | | |
| 2.00-2.10 | 7 | | 18.43 | 2.00 |
| 2.10-2.20 | 13 | | | |
| 2.20-2.30 | 15 | | | |
| 2.30-2.40 | 27 | | | |
| 2.40-2.50 | 25 | | 17.93 | 2.50 |
| | | | 17.43 | 3.00 |
| | | | 16.93 | 3.50 |
| | | | 16.43 | 4.00 |
| | | | 15.93 | 4.50 |
| | | | 15.43 | 5.00 |




**Remarks**
Refusal at 2.50m BGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SB |

**Figure No.**
13642-03-24.DP151

# **APPENDIX 5** – Laboratory Testing

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

Ground Investigations Ireland
Catherinestown House
Hazelhatch Road
Newcastle
Co. Dublin
Ireland
D22 K5P8

| | |
|---|---|
| **Attention :** | James Cashen |
| **Date :** | 2nd May, 2024 |
| **Your reference :** | 13643-03-24 |
| **Our reference :** | Test Report 24/6758 Batch 1 |
| **Location :** | Old Slane Road |
| **Date samples received :** | 19th April, 2024 |
| **Status :** | Final Report |
| **Issue :** | 202405021600 |

Four samples were received for analysis on 19th April, 2024 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 11.946 kg of CO2

Scope 1&2&3 emissions - 28.232 kg of CO2

**Authorised By:**

**Phil Sommerton BSc**
**Senior Project Manager**

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| EMT Sample No. | 1-4 | 5 | 6 | 7-10 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP115 | TP138 | TP140 | | | | | | | | | |
| Depth | 0.70 | 1.00 | 1.00 | 0.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | T | T | V J T | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | 16/04/2024 | 16/04/2024 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 1 | 1 | 1 | 1 | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | 19/04/2024 | 19/04/2024 | | | | | | | | | |
| Antimony | 2 | - | - | 1 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Arsenic # | 10.5 | - | - | 13.5 | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Barium # | 115 | - | - | 129 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Cadmium # | 0.3 | - | - | 1.6 | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Chromium # | 61.0 | - | - | 31.9 | | | | | | | <0.5 | mg/kg | TM30/PM15 |
| Copper # | 25 | - | - | 28 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Lead # | 14 | - | - | 12 | | | | | | | <5 | mg/kg | TM30/PM15 |
| Mercury # | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Molybdenum # | 3.0 | - | - | 1.3 | | | | | | | <0.1 | mg/kg | TM30/PM15 |
| Nickel # | 40.5 | - | - | 63.1 | | | | | | | <0.7 | mg/kg | TM30/PM15 |
| Selenium # | <1 | - | - | <1 | | | | | | | <1 | mg/kg | TM30/PM15 |
| Zinc # | 60 | - | - | 106 | | | | | | | <5 | mg/kg | TM30/PM15 |
| PAH MS | | | | | | | | | | | | | |
| Naphthalene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Acenaphthylene | <0.03 | - | - | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Acenaphthene # | <0.05 | - | - | <0.05 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Fluorene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Phenanthrene # | <0.03 | - | - | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Anthracene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Fluoranthene # | <0.03 | - | - | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Pyrene # | <0.03 | - | - | <0.03 | | | | | | | <0.03 | mg/kg | TM4/PM8 |
| Benzo(a)anthracene # | <0.06 | - | - | <0.06 | | | | | | | <0.06 | mg/kg | TM4/PM8 |
| Chrysene # | <0.02 | - | - | <0.02 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(bk)fluoranthene # | <0.07 | - | - | <0.07 | | | | | | | <0.07 | mg/kg | TM4/PM8 |
| Benzo(a)pyrene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Indeno(123cd)pyrene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Dibenzo(ah)anthracene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Benzo(ghi)perylene # | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| Coronene | <0.04 | - | - | <0.04 | | | | | | | <0.04 | mg/kg | TM4/PM8 |
| PAH 6 Total # | <0.22 | - | - | <0.22 | | | | | | | <0.22 | mg/kg | TM4/PM8 |
| PAH 17 Total | <0.64 | - | - | <0.64 | | | | | | | <0.64 | mg/kg | TM4/PM8 |
| Benzo(b)fluoranthene | <0.05 | - | - | <0.05 | | | | | | | <0.05 | mg/kg | TM4/PM8 |
| Benzo(k)fluoranthene | <0.02 | - | - | <0.02 | | | | | | | <0.02 | mg/kg | TM4/PM8 |
| Benzo(j)fluoranthene | <1 | - | - | <1 | | | | | | | <1 | mg/kg | TM4/PM8 |
| PAH Surrogate % Recovery | 89 | - | - | 93 | | | | | | | <0 | % | TM4/PM8 |
| Mineral Oil (C10-C40) (EH_CU_1D_AL) | <30 | - | - | <30 | | | | | | | <30 | mg/kg | TM5/PM8/PM16 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| EMT Sample No. | 1-4 | 5 | 6 | 7-10 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP115 | TP138 | TP140 | | | | | | | | | |
| Depth | 0.70 | 1.00 | 1.00 | 0.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | T | T | V J T | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | 16/04/2024 | 16/04/2024 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 1 | 1 | 1 | 1 | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | 19/04/2024 | 19/04/2024 | | | | | | | | | |
| TPH CWG | | | | | | | | | | | | | |
| **Aliphatics** | | | | | | | | | | | | | |
| >C5-C6 (HS_1D_AL)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C6-C8 (HS_1D_AL)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C8-C10 (HS_1D_AL) | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C12 (EH_CU_1D_AL)# | <0.2 | - | - | <0.2 | | | | | | | <0.2 | mg/kg | TM5/PM8/PM16 |
| >C12-C16 (EH_CU_1D_AL)# | <4 | - | - | <4 | | | | | | | <4 | mg/kg | TM5/PM8/PM16 |
| >C16-C21 (EH_CU_1D_AL)# | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| >C21-C35 (EH_CU_1D_AL)# | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| >C35-C40 (EH_CU_1D_AL) | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| Total aliphatics C5-40 (EH_CU+HS_1D_AL) | <26 | - | - | <26 | | | | | | | <26 | mg/kg | TM5/TM36/PM8/PM12/PM16 |
| >C6-C10 (HS_1D_AL) | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >C10-C25 (EH_CU_1D_AL) | <10 | - | - | <10 | | | | | | | <10 | mg/kg | TM5/PM8/PM16 |
| >C25-C35 (EH_CU_1D_AL) | <10 | - | - | <10 | | | | | | | <10 | mg/kg | TM5/PM8/PM16 |
| **Aromatics** | | | | | | | | | | | | | |
| >C5-EC7 (HS_1D_AR)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC7-EC8 (HS_1D_AR)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC8-EC10 (HS_1D_AR)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC12 (EH_CU_1D_AR)# | <0.2 | - | - | <0.2 | | | | | | | <0.2 | mg/kg | TM5/PM8/PM16 |
| >EC12-EC16 (EH_CU_1D_AR)# | <4 | - | - | <4 | | | | | | | <4 | mg/kg | TM5/PM8/PM16 |
| >EC16-EC21 (EH_CU_1D_AR)# | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| >EC21-EC35 (EH_CU_1D_AR)# | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| >EC35-EC40 (EH_CU_1D_AR) | <7 | - | - | <7 | | | | | | | <7 | mg/kg | TM5/PM8/PM16 |
| Total aromatics C5-40 (EH_CU+HS_1D_AR) | <26 | - | - | <26 | | | | | | | <26 | mg/kg | TM5/TM36/PM8/PM12/PM16 |
| Total aliphatics and aromatics(C5-40) (EH_CU+HS_1D_Total) | <52 | - | - | <52 | | | | | | | <52 | mg/kg | TM5/TM36/PM8/PM12/PM16 |
| >EC6-EC10 (HS_1D_AR)# | <0.1 | - | - | <0.1 | | | | | | | <0.1 | mg/kg | TM36/PM12 |
| >EC10-EC25 (EH_CU_1D_AR) | <10 | - | - | <10 | | | | | | | <10 | mg/kg | TM5/PM8/PM16 |
| >EC25-EC35 (EH_CU_1D_AR) | <10 | - | - | <10 | | | | | | | <10 | mg/kg | TM5/PM8/PM16 |
| | | | | | | | | | | | | | |
| MTBE# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| Benzene# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| Toluene# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| Ethylbenzene# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| m/p-Xylene# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| o-Xylene# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM36/PM12 |
| | | | | | | | | | | | | | |
| PCB 28# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 52# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 101# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 118# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 138# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 153# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| PCB 180# | <5 | - | - | <5 | | | | | | | <5 | ug/kg | TM17/PM8 |
| Total 7 PCBs# | <35 | - | - | <35 | | | | | | | <35 | ug/kg | TM17/PM8 |

Please see attached notes for all abbreviations and acronyms

## Element Materials Technology

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report : Solid**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| EMT Sample No. | 1-4 | 5 | 6 | 7-10 | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP115 | TP138 | TP140 | | | | | | | | | |
| Depth | 0.70 | 1.00 | 1.00 | 0.50 | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | T | T | V J T | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | 16/04/2024 | 16/04/2024 | | | | | | | | | |
| Sample Type | Soil | Soil | Soil | Soil | | | | | | | | | |
| Batch Number | 1 | 1 | 1 | 1 | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | 19/04/2024 | 19/04/2024 | | | | | | | | | |
| Natural Moisture Content | 10.1 | - | - | 11.8 | | | | | | | <0.1 | % | PM4/PM0 |
| Moisture Content (% Wet Weight) | 9.2 | - | - | 10.5 | | | | | | | <0.1 | % | PM4/PM0 |
| Hexavalent Chromium # | <0.3 | - | - | <0.3 | | | | | | | <0.3 | mg/kg | TM38/PM20 |
| Sulphate as SO4 (2:1 Ext) # | - | 0.0026 | 0.0034 | - | | | | | | | <0.0015 | g/l | TM38/PM20 |
| Chromium III | 61.0 | - | - | 31.9 | | | | | | | <0.5 | mg/kg | NONE/NONE |
| Total Organic Carbon # | 0.22 | - | - | 0.14 | | | | | | | <0.02 | % | TM21/PM24 |
| pH # | 8.35 | 7.89 | 7.53 | 8.44 | | | | | | | <0.01 | pH units | TM73/PM11 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

| EMT Sample No. | 1-4 | 7-10 | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP140 | | | | | | | | | | | |
| Depth | 0.70 | 0.50 | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | | | | | | | | | | | |
| Dissolved Antimony # | <0.002 | <0.002 | | | | | | | | | <0.002 | mg/l | TM30/PM17 |
| Dissolved Antimony (A10) # | <0.02 | <0.02 | | | | | | | | | <0.02 | mg/kg | TM30/PM17 |
| Dissolved Arsenic # | <0.0025 | <0.0025 | | | | | | | | | <0.0025 | mg/l | TM30/PM17 |
| Dissolved Arsenic (A10) # | <0.025 | <0.025 | | | | | | | | | <0.025 | mg/kg | TM30/PM17 |
| Dissolved Barium # | 0.056 | 0.005 | | | | | | | | | <0.003 | mg/l | TM30/PM17 |
| Dissolved Barium (A10) # | 0.56 | 0.05 | | | | | | | | | <0.03 | mg/kg | TM30/PM17 |
| Dissolved Cadmium # | <0.0005 | <0.0005 | | | | | | | | | <0.0005 | mg/l | TM30/PM17 |
| Dissolved Cadmium (A10) # | <0.005 | <0.005 | | | | | | | | | <0.005 | mg/kg | TM30/PM17 |
| Dissolved Chromium # | <0.0015 | <0.0015 | | | | | | | | | <0.0015 | mg/l | TM30/PM17 |
| Dissolved Chromium (A10) # | <0.015 | <0.015 | | | | | | | | | <0.015 | mg/kg | TM30/PM17 |
| Dissolved Copper # | <0.007 | <0.007 | | | | | | | | | <0.007 | mg/l | TM30/PM17 |
| Dissolved Copper (A10) # | <0.07 | <0.07 | | | | | | | | | <0.07 | mg/kg | TM30/PM17 |
| Dissolved Lead # | <0.005 | <0.005 | | | | | | | | | <0.005 | mg/l | TM30/PM17 |
| Dissolved Lead (A10) # | <0.05 | <0.05 | | | | | | | | | <0.05 | mg/kg | TM30/PM17 |
| Dissolved Molybdenum # | <0.002 | <0.002 | | | | | | | | | <0.002 | mg/l | TM30/PM17 |
| Dissolved Molybdenum (A10) # | <0.02 | <0.02 | | | | | | | | | <0.02 | mg/kg | TM30/PM17 |
| Dissolved Nickel # | <0.002 | <0.002 | | | | | | | | | <0.002 | mg/l | TM30/PM17 |
| Dissolved Nickel (A10) # | <0.02 | <0.02 | | | | | | | | | <0.02 | mg/kg | TM30/PM17 |
| Dissolved Selenium # | <0.003 | <0.003 | | | | | | | | | <0.003 | mg/l | TM30/PM17 |
| Dissolved Selenium (A10) # | <0.03 | <0.03 | | | | | | | | | <0.03 | mg/kg | TM30/PM17 |
| Dissolved Zinc # | <0.003 | 0.004 | | | | | | | | | <0.003 | mg/l | TM30/PM17 |
| Dissolved Zinc (A10) # | <0.03 | 0.04 | | | | | | | | | <0.03 | mg/kg | TM30/PM17 |
| Mercury Dissolved by CVAF # | <0.00001 | <0.00001 | | | | | | | | | <0.00001 | mg/l | TM61/PM0 |
| Mercury Dissolved by CVAF # | <0.0001 | <0.0001 | | | | | | | | | <0.0001 | mg/kg | TM61/PM0 |
| Phenol | <0.01 | <0.01 | | | | | | | | | <0.01 | mg/l | TM26/PM0 |
| Phenol | <0.1 | <0.1 | | | | | | | | | <0.1 | mg/kg | TM26/PM0 |
| Fluoride | <0.3 | <0.3 | | | | | | | | | <0.3 | mg/l | TM173/PM0 |
| Fluoride | <3 | <3 | | | | | | | | | <3 | mg/kg | TM173/PM0 |
| Sulphate as SO4 # | 21.7 | 0.7 | | | | | | | | | <0.5 | mg/l | TM38/PM0 |
| Sulphate as SO4 # | 217 | 7 | | | | | | | | | <5 | mg/kg | TM38/PM0 |
| Mass of raw test portion | 0.1013 | 0.1013 | | | | | | | | | | kg | NONE/PM17 |
| Chloride # | 0.5 | 0.5 | | | | | | | | | <0.3 | mg/l | TM38/PM0 |
| Chloride # | 5 | 5 | | | | | | | | | <3 | mg/kg | TM38/PM0 |
| Mass of dried test portion | 0.09 | 0.09 | | | | | | | | | | kg | NONE/PM17 |
| Dissolved Organic Carbon | <2 | <2 | | | | | | | | | <2 | mg/l | TM60/PM0 |
| Dissolved Organic Carbon | <20 | <20 | | | | | | | | | <20 | mg/kg | TM60/PM0 |
| pH | 7.94 | 8.08 | | | | | | | | | <0.01 | pH units | TM73/PM0 |

## Element Materials Technology

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report : CEN 10:1 1 Batch**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

| EMT Sample No. | 1-4 | 7-10 | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP140 | | | | | | | | | | | |
| Depth | 0.70 | 0.50 | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | | | | | | | | | | | |
| Total Dissolved Solids # | 75 | 69 | | | | | | | | | <35 | mg/l | TM20/PM0 |
| Total Dissolved Solids # | 750 | 690 | | | | | | | | | <350 | mg/kg | TM20/PM0 |

Please see attached notes for all abbreviations and acronyms

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen
**EMT Job No:** 24/6758

**Report :** **EN12457_2**

**Solids:** V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

| EMT Sample No. | 1-4 | 7-10 | | | | | | | | | Inert | Stable Non-reactive | Hazardous | LOD LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | TP100 | TP140 | | | | | | | | | | | | | | |
| Depth | 0.70 | 0.50 | | | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | | | | |
| Containers | V J T | V J T | | | | | | | | | | | | | | |
| Sample Date | 16/04/2024 | 16/04/2024 | | | | | | | | | | | | | | |
| Sample Type | Soil | Soil | | | | | | | | | | | | | | |
| Batch Number | 1 | 1 | | | | | | | | | | | | | | |
| Date of Receipt | 19/04/2024 | 19/04/2024 | | | | | | | | | | | | | | |
| **Solid Waste Analysis** | | | | | | | | | | | | | | | | |
| Total Organic Carbon # | 0.22 | 0.14 | | | | | | | | | 3 | 5 | 6 | <0.02 | % | TM21/PM24 |
| Sum of BTEX | <0.025 | <0.025 | | | | | | | | | 6 | - | - | <0.025 | mg/kg | TM36/PM12 |
| Sum of 7 PCBs # | <0.035 | <0.035 | | | | | | | | | 1 | - | - | <0.035 | mg/kg | TM17/PM8 |
| Mineral Oil | <30 | <30 | | | | | | | | | 500 | - | - | <30 | mg/kg | TM5/PM8/PM16 |
| PAH Sum of 6 # | <0.22 | <0.22 | | | | | | | | | - | - | - | <0.22 | mg/kg | TM4/PM8 |
| PAH Sum of 17 | <0.64 | <0.64 | | | | | | | | | 100 | - | - | <0.64 | mg/kg | TM4/PM8 |
| **CEN 10:1 Leachate** | | | | | | | | | | | | | | | | |
| Arsenic # | <0.025 | <0.025 | | | | | | | | | 0.5 | 2 | 25 | <0.025 | mg/kg | TM30/PM17 |
| Barium # | 0.56 | 0.05 | | | | | | | | | 20 | 100 | 300 | <0.03 | mg/kg | TM30/PM17 |
| Cadmium # | <0.005 | <0.005 | | | | | | | | | 0.04 | 1 | 5 | <0.005 | mg/kg | TM30/PM17 |
| Chromium # | <0.015 | <0.015 | | | | | | | | | 0.5 | 10 | 70 | <0.015 | mg/kg | TM30/PM17 |
| Copper # | <0.07 | <0.07 | | | | | | | | | 2 | 50 | 100 | <0.07 | mg/kg | TM30/PM17 |
| Mercury # | <0.0001 | <0.0001 | | | | | | | | | 0.01 | 0.2 | 2 | <0.0001 | mg/kg | TM61/PM0 |
| Molybdenum # | <0.02 | <0.02 | | | | | | | | | 0.5 | 10 | 30 | <0.02 | mg/kg | TM30/PM17 |
| Nickel # | <0.02 | <0.02 | | | | | | | | | 0.4 | 10 | 40 | <0.02 | mg/kg | TM30/PM17 |
| Lead # | <0.05 | <0.05 | | | | | | | | | 0.5 | 10 | 50 | <0.05 | mg/kg | TM30/PM17 |
| Antimony # | <0.02 | <0.02 | | | | | | | | | 0.06 | 0.7 | 5 | <0.02 | mg/kg | TM30/PM17 |
| Selenium # | <0.03 | <0.03 | | | | | | | | | 0.1 | 0.5 | 7 | <0.03 | mg/kg | TM30/PM17 |
| Zinc # | <0.03 | 0.04 | | | | | | | | | 4 | 50 | 200 | <0.03 | mg/kg | TM30/PM17 |
| Total Dissolved Solids # | 750 | 690 | | | | | | | | | 4000 | 60000 | 100000 | <350 | mg/kg | TM20/PM0 |
| Dissolved Organic Carbon | <20 | <20 | | | | | | | | | 500 | 800 | 1000 | <20 | mg/kg | TM60/PM0 |
| Mass of raw test portion | 0.1013 | 0.1013 | | | | | | | | | - | - | - | | kg | NONE/PM17 |
| Dry Matter Content Ratio | 88.5 | 88.5 | | | | | | | | | - | - | - | <0.1 | % | NONE/PM4 |
| Leachant Volume | 0.888 | 0.888 | | | | | | | | | - | - | - | | l | NONE/PM17 |
| Moisture Content 105C (% Dry Weight) | 12.9 | 13.1 | | | | | | | | | - | - | - | <0.1 | % | PM4/PM0 |
| pH # | 8.35 | 8.44 | | | | | | | | | - | - | - | <0.01 | pH units | TM73/PM11 |
| Phenol | <0.1 | <0.1 | | | | | | | | | 1 | - | - | <0.1 | mg/kg | TM26/PM0 |
| Fluoride | <3 | <3 | | | | | | | | | 10 | 150 | 500 | <3 | mg/kg | TM173/PM0 |
| Sulphate as SO4 # | 217 | 7 | | | | | | | | | 1000 | 20000 | 50000 | <5 | mg/kg | TM38/PM0 |
| Chloride # | 5 | 5 | | | | | | | | | 800 | 15000 | 25000 | <3 | mg/kg | TM38/PM0 |

**Client Name:** Ground Investigations Ireland

**Reference:** 13643-03-24

**Location:** Old Slane Road

**Contact:** James Cashen

**Matrix : Solid**

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | EPH Interpretation |
|---|---|---|---|---|---|
| 24/6758 | 1 | TP100 | 0.70 | 1-4 | No interpretation possible |
| 24/6758 | 1 | TP140 | 0.50 | 7-10 | No interpretation possible |

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen

**Note:**

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analyst Name | Date Of Analysis | Analysis | Result |
|---|---|---|---|---|---|---|---|---|
| 24/6758 | 1 | TP100 | 0.70 | 4 | Charlotte Taylor | 30/04/2024 | **General Description (Bulk Analysis)** | brown soil/stones |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Fibres** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Fibres (2)** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos ACM** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Type** | NAD |
| 24/6758 | 1 | TP140 | 0.50 | 10 | Charlotte Taylor | 30/04/2024 | **General Description (Bulk Analysis)** | brown soil/stones |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Fibres** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Fibres (2)** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos ACM** | NAD |
| | | | | | Charlotte Taylor | 30/04/2024 | **Asbestos Type** | NAD |

# Element Materials Technology

**Notification of Deviating Samples**

**Client Name:** Ground Investigations Ireland
**Reference:** 13643-03-24
**Location:** Old Slane Road
**Contact:** James Cashen

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 24/6758 | | | | | | |

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.**
**It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.**

# NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***EMT Job No.:*** 24/6758

**SOILS and ASH**

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 35°C ±5°C.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

**WATERS**

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil is quoted, this refers to Total Aliphatics C10-C40.

**STACK EMISSIONS**

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

**DEVIATING SAMPLES**

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

**SURROGATES**

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

**DILUTIONS**

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

**BLANKS**

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

**NOTE**

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

**REPORTS FROM THE SOUTH AFRICA LABORATORY**

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

**Measurement Uncertainty**

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

**Customer Provided Information**

Sample ID and depth is information provided by the customer.

**Age of Diesel**

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).
Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

**Tentatively Identified Compounds (TICs)**

Where Tentatively Identified Compounds (TICs) are reported, up to 10 Tentatively Identified Compounds will be listed where there is found to be a greater than 80% match with the NIST library. The reported concentration is determined semi-quantitively, with a matrix specific limit of detection. Note, other compounds may be present but are not reported.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS Ref No. 4225) accredited - UK. |
| SA | ISO17025 (SANAS Ref No.T0729) accredited - South Africa |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| >> | Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher. |
| * | Analysis subcontracted to an Element Materials Technology approved laboratory. |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |
| | |

**HWOL ACRONYMS AND OPERATORS USED**

| | |
|---|---|
| HS | Headspace Analysis. |
| EH | Extractable Hydrocarbons - i.e. everything extracted by the solvent. |
| CU | Clean-up - e.g. by florisil, silica gel. |
| 1D | GC - Single coil gas chromatography. |
| Total | Aliphatics & Aromatics. |
| AL | Aliphatics only. |
| AR | Aromatics only. |
| 2D | GC-GC - Double coil gas chromatography. |
| #1 | EH_Total but with humics mathematically subtracted |
| #2 | EU_Total but with fatty acids mathematically subtracted |
| _ | Operator - underscore to separate acronyms (exception for +). |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |
| MS | Mass Spectrometry. |

**EMT Job No:** 24/6758

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990. | PM0 | No preparation is required. | | | AR | |
| TM4 | Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | | | AR | Yes |
| TM4 | Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM5 | Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present. | PM16 | Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | |
| TM5 | Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present. | PM8/PM16 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | | | AR | Yes |
| TM5 | Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present. | PM8/PM16 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE. | Yes | | AR | Yes |
| TM5/TM36 | please refer to TM5 and TM36 for method details | PM8/PM12/PM16 | please refer to PM8/PM16 and PM12 for method details | | | AR | Yes |
| TM17 | Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS. | PM8 | End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required. | Yes | | AR | Yes |
| TM20 | Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM21 | Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil. | PM24 | Preparation of Soil and Marine Sediment Samples for Total Organic Carbon. | Yes | | AD | Yes |

**EMT Job No:** 24/6758

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM26 | Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection. | PM0 | No preparation is required. | | | AR | Yes |
| TM30 | Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | | | AD | Yes |
| TM30 | Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996 | PM15 | Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground. | Yes | | AD | Yes |
| TM30 | Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996 | PM17 | Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | Yes | | AR | Yes |
| TM36 | Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested. | PM12 | Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis. | | | AR | Yes |
| TM36 | Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested. | PM12 | Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM38 | Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AD | Yes |
| TM38 | Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I | PM20 | Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker. | Yes | | AR | Yes |
| TM60 | TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1. | PM0 | No preparation is required. | | | AR | Yes |

**EMT Job No:** 24/6758

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM61 | Determination of Mercury by Cold Vapour Atomic Fluorescence - WATERS: Modified USEPA Method 245.7, Rev 2, Feb 2005. SOILS: Modified USEPA Method 7471B, Rev.2, Feb 2007 | PM0 | No preparation is required. | Yes | | AR | Yes |
| TM65 | Asbestos Bulk Identification method based on HSG 248 Second edition (2021) | PM42 | Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065. | Yes | | AR | |
| TM73 | Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser. | PM0 | No preparation is required. | | | AR | Yes |
| TM73 | Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser. | PM11 | Extraction of as received solid samples using one part solid to 2.5 parts deionised water. | Yes | | AR | No |
| TM173 | Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998) | PM0 | No preparation is required. | | | AR | Yes |
| NONE | No Method Code | NONE | No Method Code | | | AD | Yes |
| NONE | No Method Code | PM17 | Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio. | | | | |
| NONE | No Method Code | PM4 | Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990. | | | AR | |
| | | | | | | | |
| | | | | | | | |

# LABORATORY REPORT

**Contract Number: PSL24/2901**

Report Date: 23 May 2024

Client's Reference: 13642-03-24

Client Name: Ground Investigations Ireland Ltd
Catherinestown House
Hazelhatch Road
Newcastle
Co Dublin
D22 YD52

**For the attention of: Scott Bradshaw**

Contract Title: Old Slane Road

Date Received: 24/4/2024
Date Commenced: 24/4/2024
Date Completed: 23/5/2024

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

| | | |
|---|---|---|
| A Watkins<br>(Managing Director) | R Berriman<br>(Associate Director) | S Royle<br>(Laboratory Manager) |
| L Knight<br>(Assistant Laboratory Manager) | S Eyre<br>(Senior Technician) | T Watkins<br>(Senior Technician) |



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# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Description of Sample |
|---|---|---|---|---|---|
| TP101 | | B | 2.20 | | Brown clayey very sandy GRAVEL. |
| TP138 | | B | 1.50 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR07 | | B | 0.60 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR08 | | B | 0.60 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR09 | | B | 0.50 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR10 | | B | 0.40 | | Brown sandy slightly gravelly CLAY. |
| CBR11 | | B | 0.50 | | Brown sandy slightly gravelly CLAY. |
| CBR12 | | B | 0.50 | | Brown sandy slightly gravelly CLAY. |
| CBR13 | | B | 0.50 | | Brown sandy slightly gravelly CLAY. |
| CBR14 | | B | 0.60 | | Brown sandy gravelly CLAY. |
| CBR15 | | B | 0.60 | | Brown sandy gravelly CLAY. |
| CBR16 | | B | 0.70 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR17 | | B | 0.70 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR18 | | B | 0.50 | | Brown slightly sandy slightly gravelly CLAY. |
| CBR19 | | B | 0.50 | | Brown slightly gravelly slightly sandy CLAY. |
| CBR20 | | B | 0.50 | | Brown sandy gravelly CLAY. |
| CBR21 | | B | 0.60 | | Brown slightly sandy very gravelly CLAY. |
| CBR22 | | B | 0.60 | | Brown sandy slightly gravelly CLAY. |
| CBR23 | | B | 0.60 | | Brown sandy slightly gravelly CLAY. |

# SUMMARY OF SOIL CLASSIFICATION TESTS

**(BS1377 : PART 2 : 1990)**

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Moisture Content % Clause 3.2 | Linear Shrinkage % Clause 6.5 | Particle Density $Mg/m^3$ Clause 8.2 | Liquid Limit % Clause 4.3/4 | Plastic Limit % Clause 5.3 | Plasticity Index % Clause 5.4 | Passing .425mm % | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TP101 | | B | 2.20 | | 11 | | | | NP | | | |
| TP138 | | B | 1.50 | | 18 | | | 39 | 19 | 20 | 83 | Intermediate Plasticity CI |
| | | | | | | | | | | | | |
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**SYMBOLS : NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PREMIA GROUP COMPANY

**Old Slane Road**

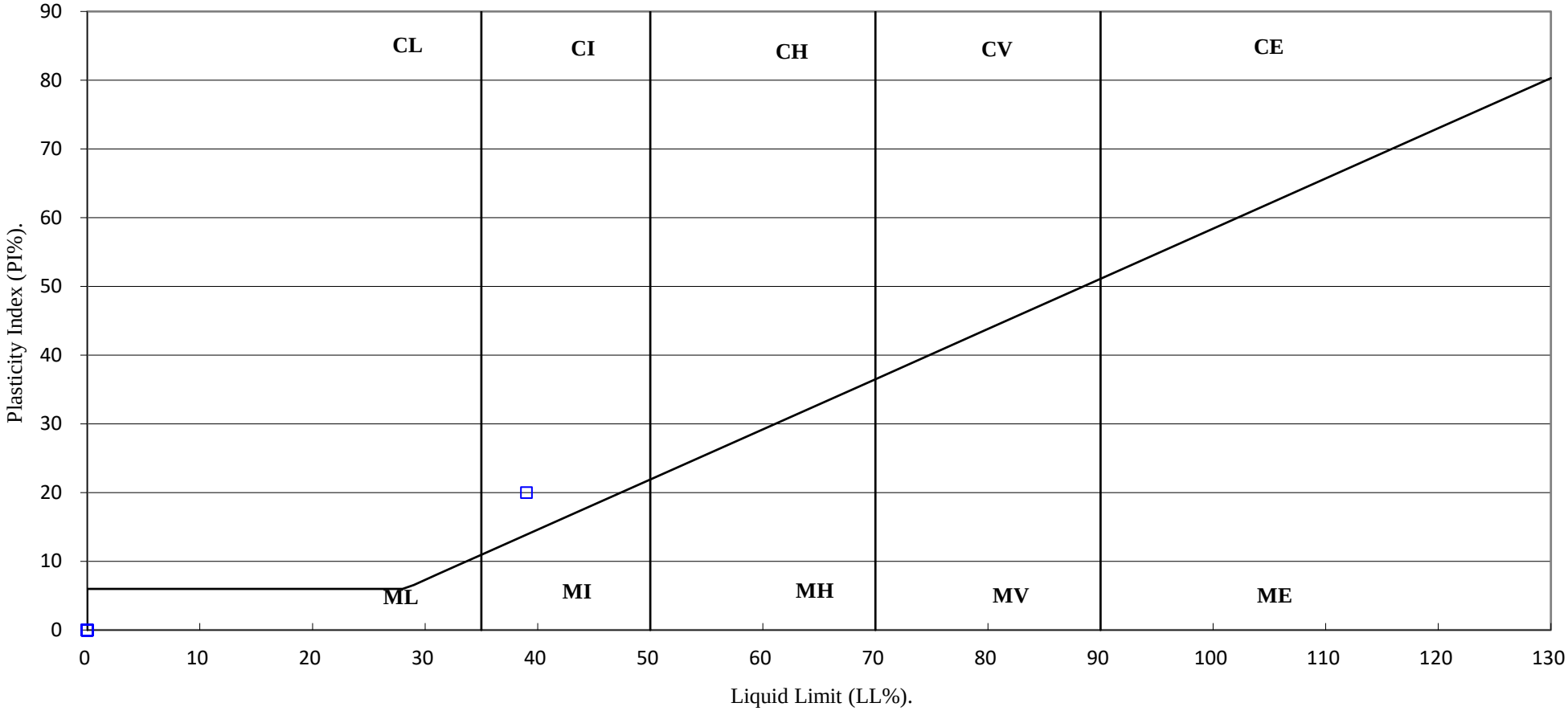
**Contract No:**

**PSL24/2901**

**Client Ref:**

**13642-03-24**

# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.




| | | |
|---|---|---|
| UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PREMIER GROUP COMPANY | **Old Slane Road** | **Contract No:** |
| | | **PSL24/2901** |
| | | **Client Ref:** |
| | | **13642-03-24** |

# PARTICLE SIZE DISTRIBUTION TEST

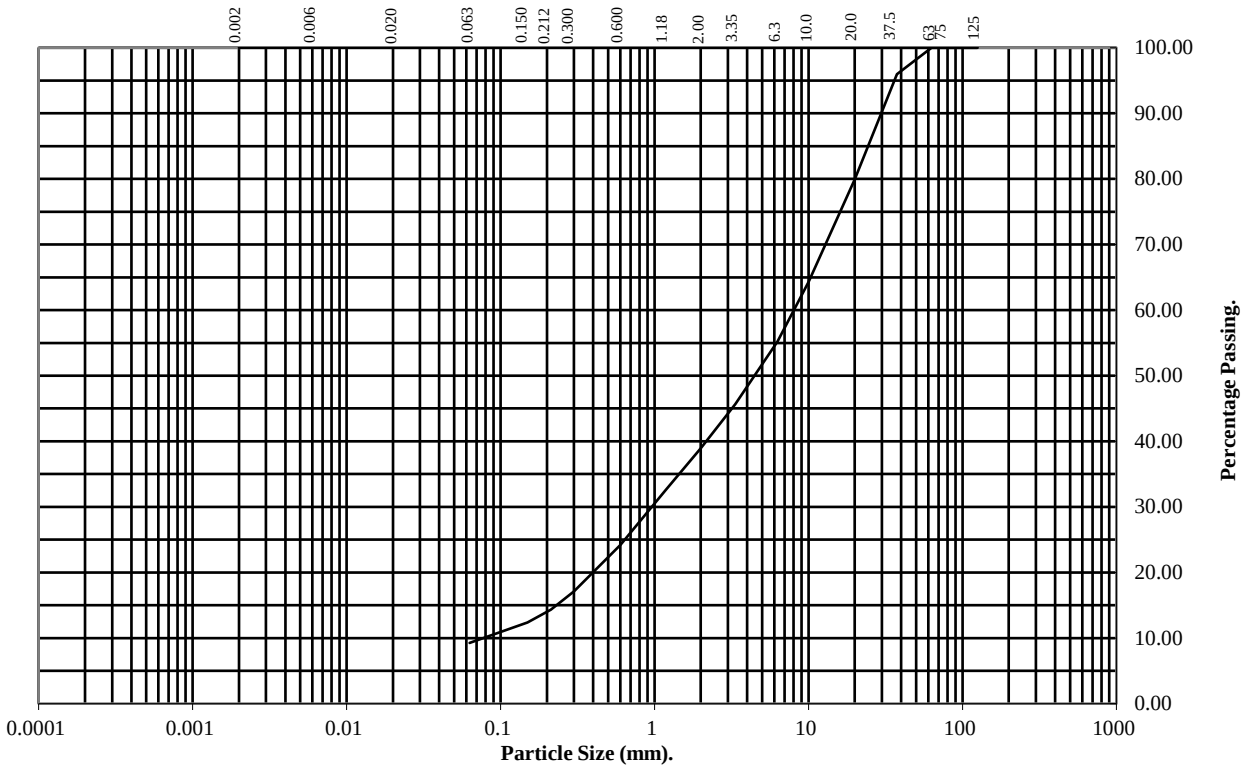
**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

**Hole Number:** **TP101** **Top Depth (m):** **2.20**

**Sample Number:** **Base Depth(m):**

**Sample Type:** **B**




| BS Test Sieve (mm) | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 96 |
| 20 | 80 |
| 10 | 64 |
| 6.3 | 55 |
| 3.35 | 46 |
| 2 | 39 |
| 1.18 | 33 |
| 0.6 | 24 |
| 0.3 | 17 |
| 0.212 | 14 |
| 0.15 | 12 |
| 0.063 | 9 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 61 |
| Sand | 30 |
| Silt/Clay | 9 |

**Remarks:**
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHOENIX GROUP COMPANY

**Old Slane Road**

**Contract No:** **PSL24/2901**

**Client Ref:** **13642-03-24**

# PARTICLE SIZE DISTRIBUTION TEST

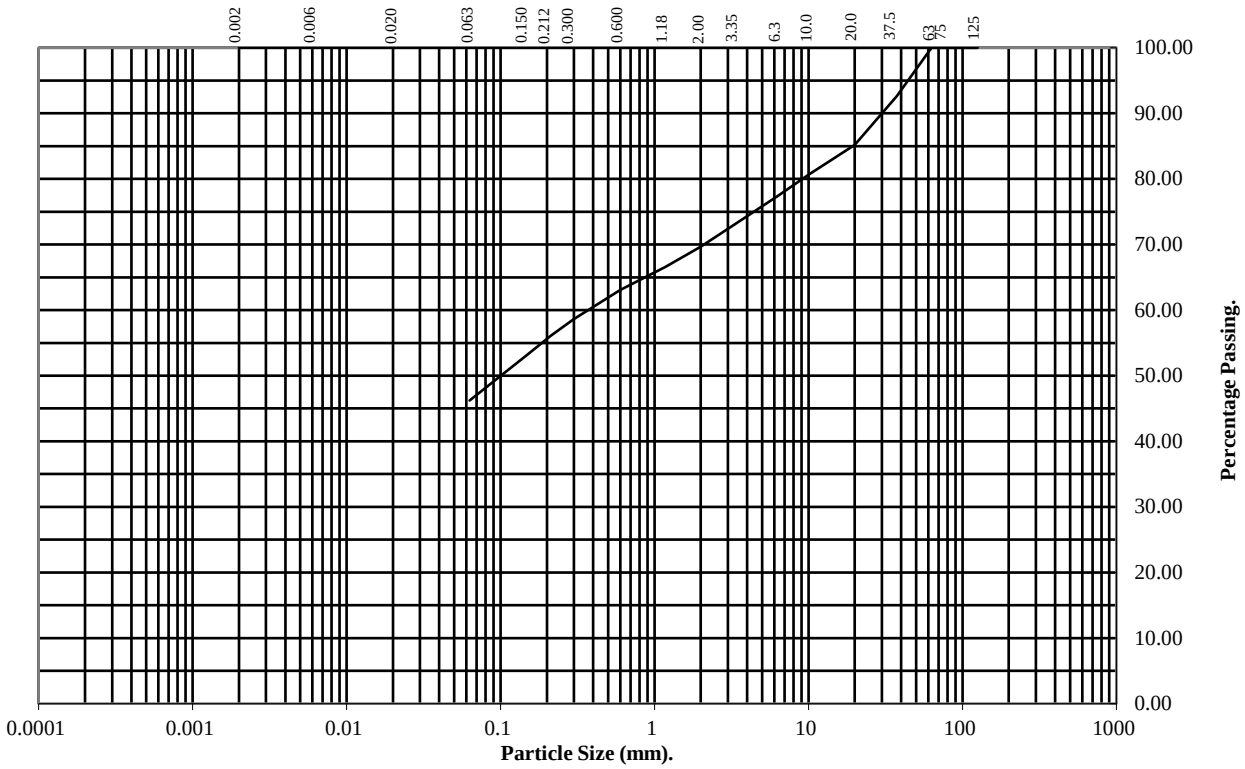
**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

**Hole Number:** **TP138** **Top Depth (m):** **1.50**

**Sample Number:** **Base Depth(m):**

**Sample Type:** **B**




| BS Test Sieve (mm) | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 93 |
| 20 | 85 |
| 10 | 81 |
| 6.3 | 77 |
| 3.35 | 73 |
| 2 | 70 |
| 1.18 | 67 |
| 0.6 | 63 |
| 0.3 | 59 |
| 0.212 | 56 |
| 0.15 | 53 |
| 0.063 | 46 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 30 |
| Sand | 24 |
| Silt/Clay | 46 |

**Remarks:**
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHOENIX GROUP COMPANY

**Old Slane Road**

**Contract No:** **PSL24/2901**

**Client Ref:** **13642-03-24**

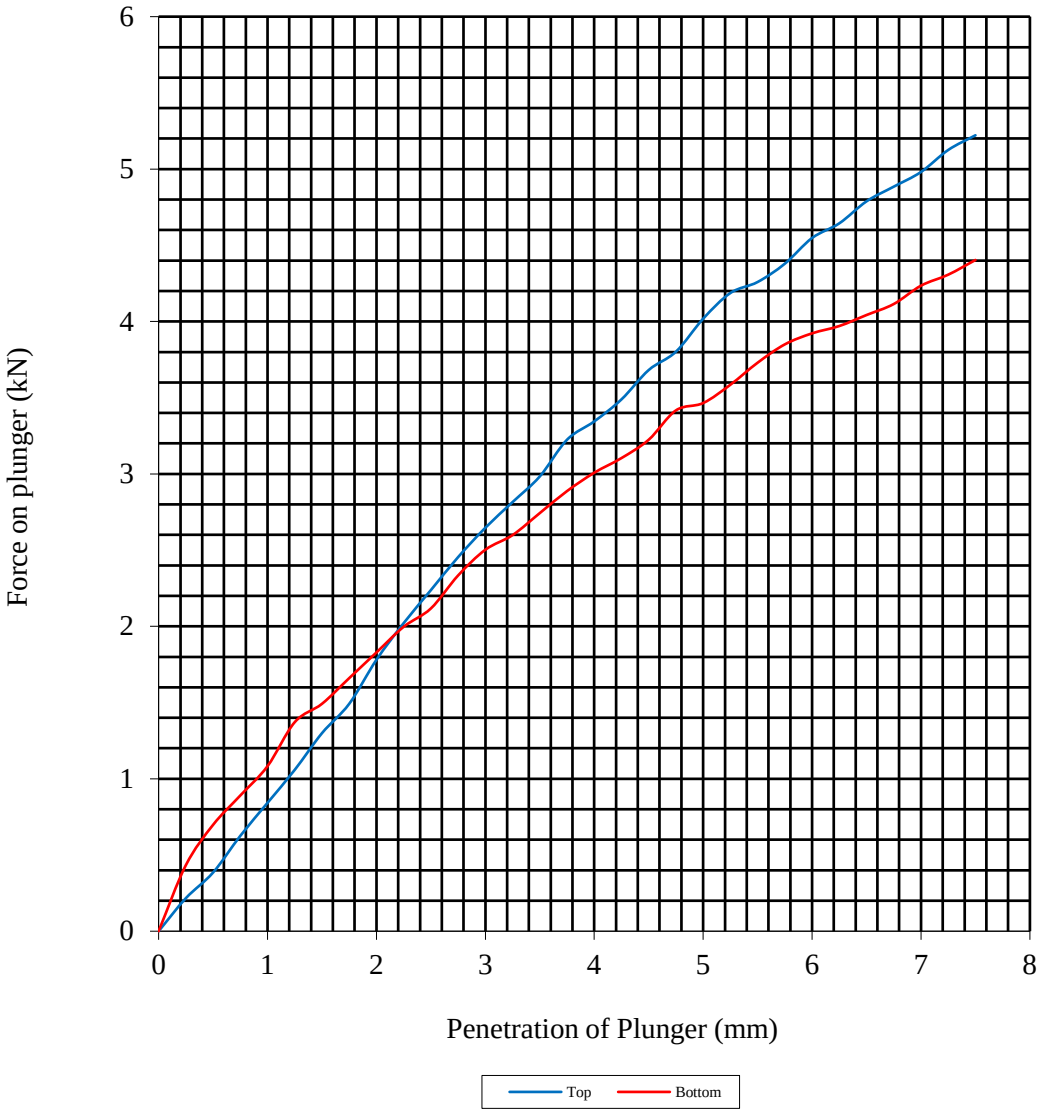
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR07 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 18 | Surcharge Kg: | 4.20 | Sample Top | 18 | Sample Top | 20.1 |
| Bulk Density Mg/m3: | 2.05 | Soaking Time hrs | 0 | Sample Bottom | 18 | Sample Bottom | 17.3 |
| Dry Density Mg/m3: | 1.74 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 3 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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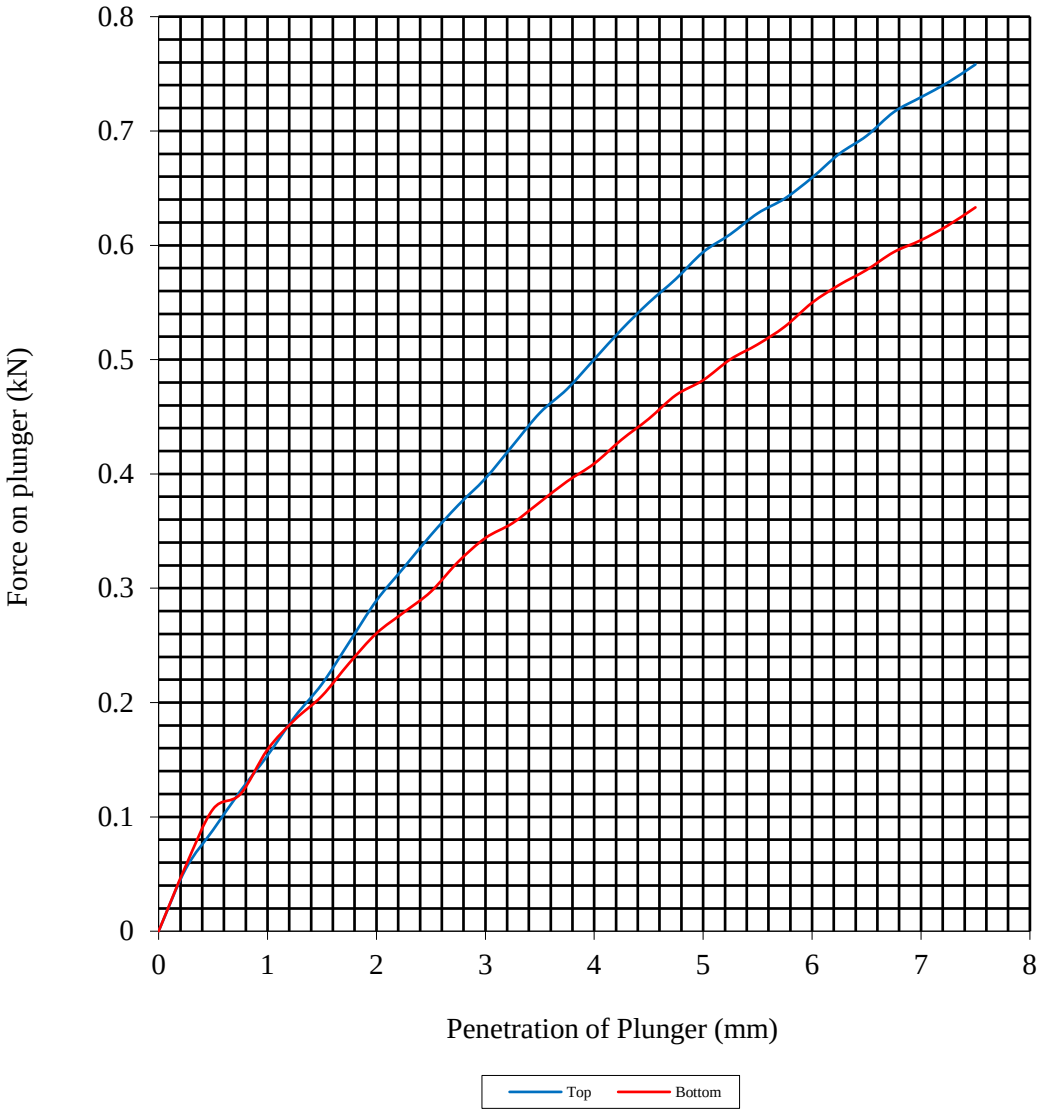
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR08 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 20 | Surcharge Kg: | 4.20 | Sample Top | 20 | Sample Top | 3.0 |
| Bulk Density Mg/m3: | 2.08 | Soaking Time hrs | 0 | Sample Bottom | 20 | Sample Bottom | 2.4 |
| Dry Density Mg/m3: | 1.73 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 2 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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**Client Ref:** 13642-03-24

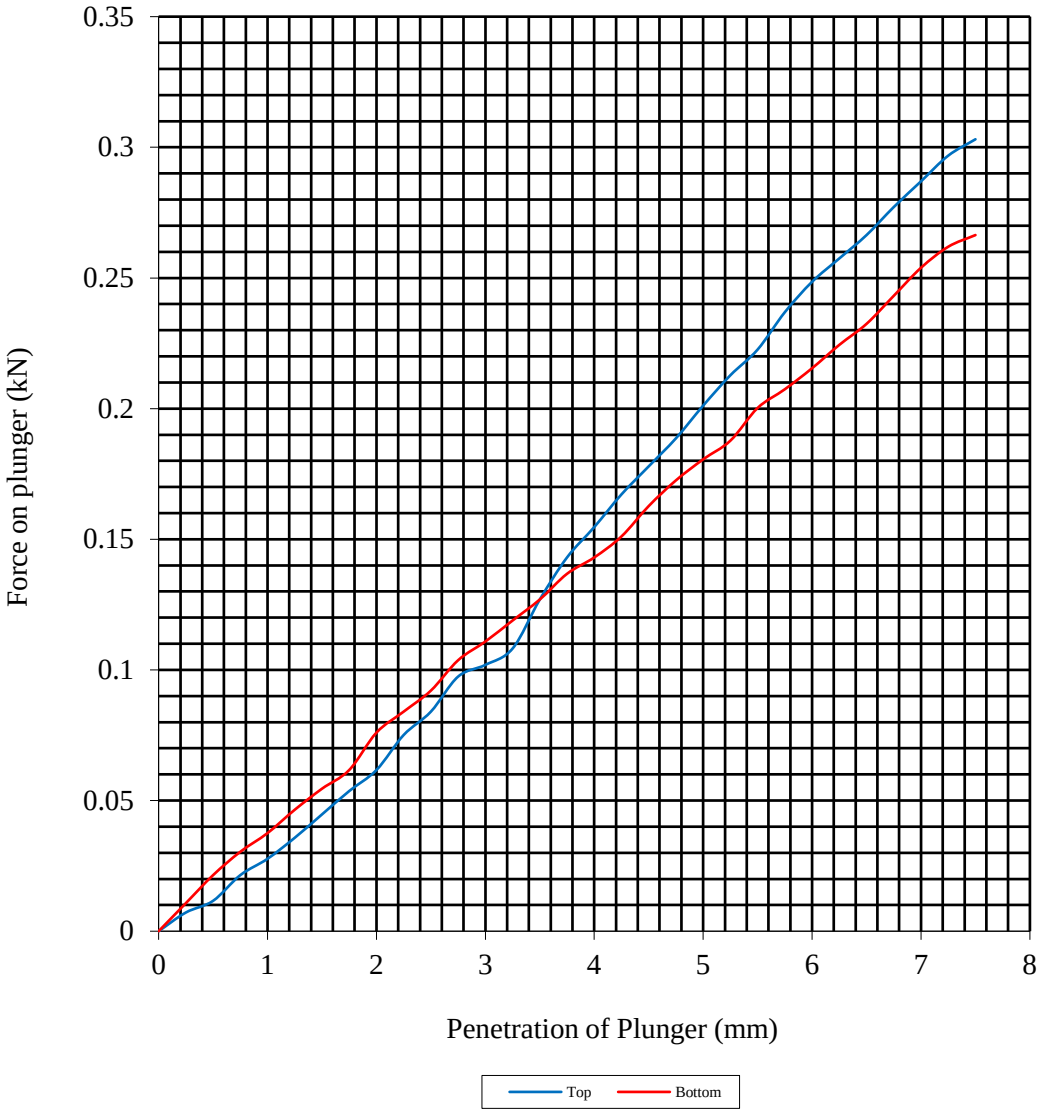
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR09 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 26 | Surcharge Kg: | 4.20 | Sample Top | 26 | Sample Top | 1.0 |
| Bulk Density Mg/m3: | 1.92 | Soaking Time hrs | 0 | Sample Bottom | 26 | Sample Bottom | 0.9 |
| Dry Density Mg/m3: | 1.52 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 4 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Old Slane Road**

**Contract No:**
**PSL24/2901**
**Client Ref:**
**13642-03-24**

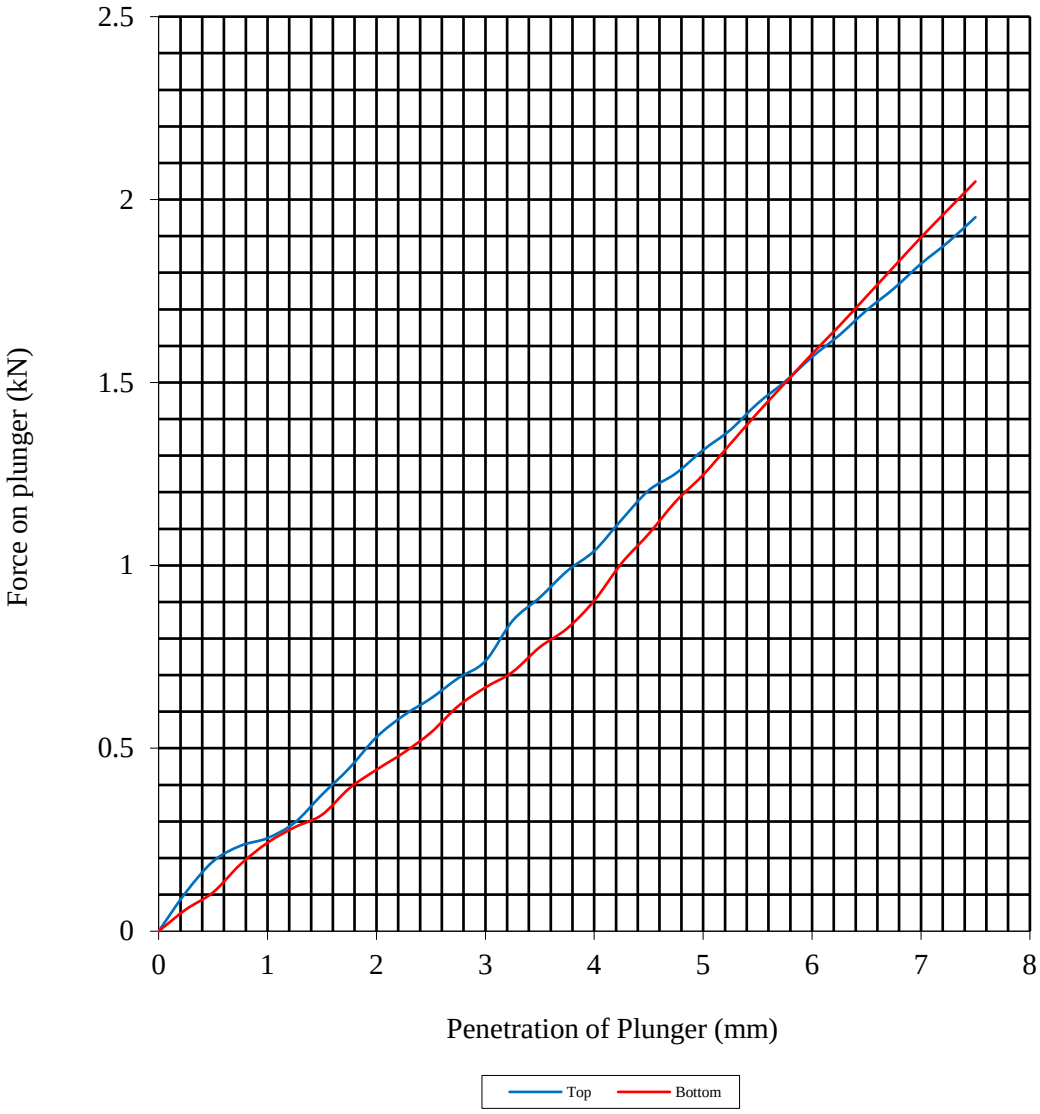
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR10 **Top Depth (m):** 0.40

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 19 | Surcharge Kg: | 4.20 | Sample Top | 19 | Sample Top | 6.6 |
| Bulk Density Mg/m3: | 2.07 | Soaking Time hrs | 0 | Sample Bottom | 19 | Sample Bottom | 6.2 |
| Dry Density Mg/m3: | 1.75 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 6 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Old Slane Road**

**Contract No:** PSL24/2901

**Client Ref:** 13642-03-24

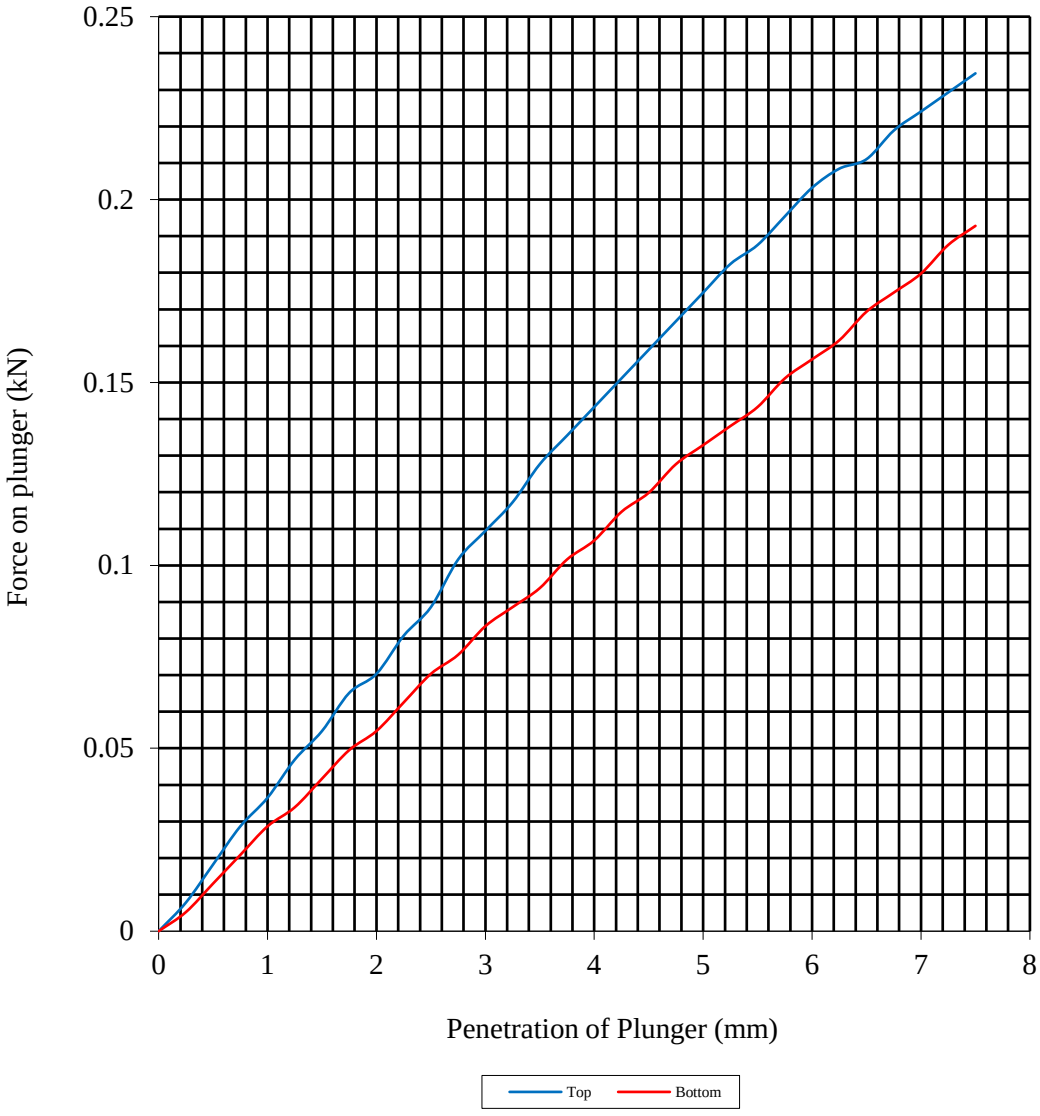
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR11 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 21 | Surcharge Kg: | 4.20 | Sample Top | 21 | Sample Top | 0.9 |
| Bulk Density Mg/m3: | 2.05 | Soaking Time hrs | 0 | Sample Bottom | 21 | Sample Bottom | 0.7 |
| Dry Density Mg/m3: | 1.69 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 2 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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**Old Slane Road**

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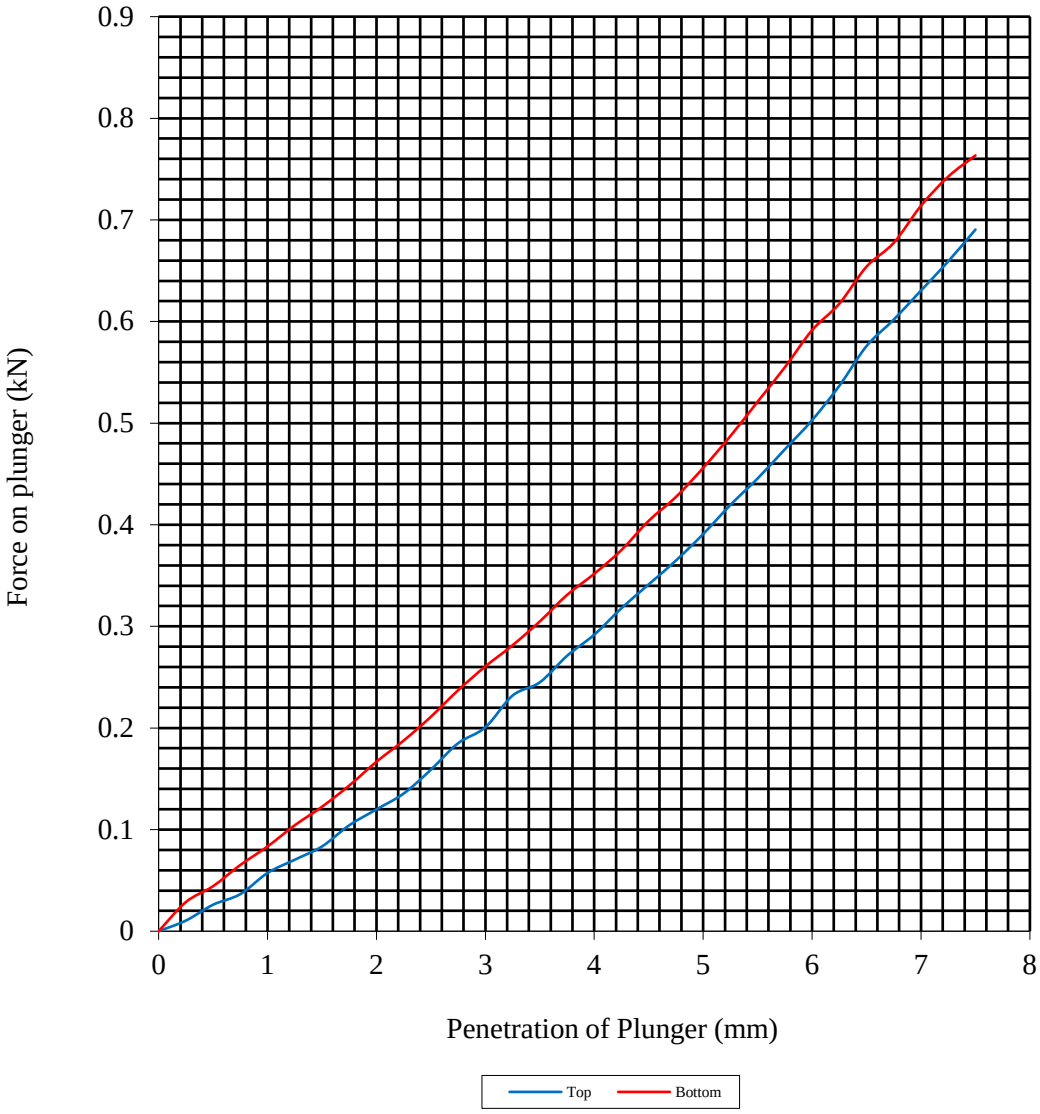
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR12 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 16 | Surcharge Kg: | 4.20 | Sample Top | 17 | Sample Top | 2.0 |
| Bulk Density Mg/m3: | 2.18 | Soaking Time hrs | 0 | Sample Bottom | 16 | Sample Bottom | 2.3 |
| Dry Density Mg/m3: | 1.87 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 6 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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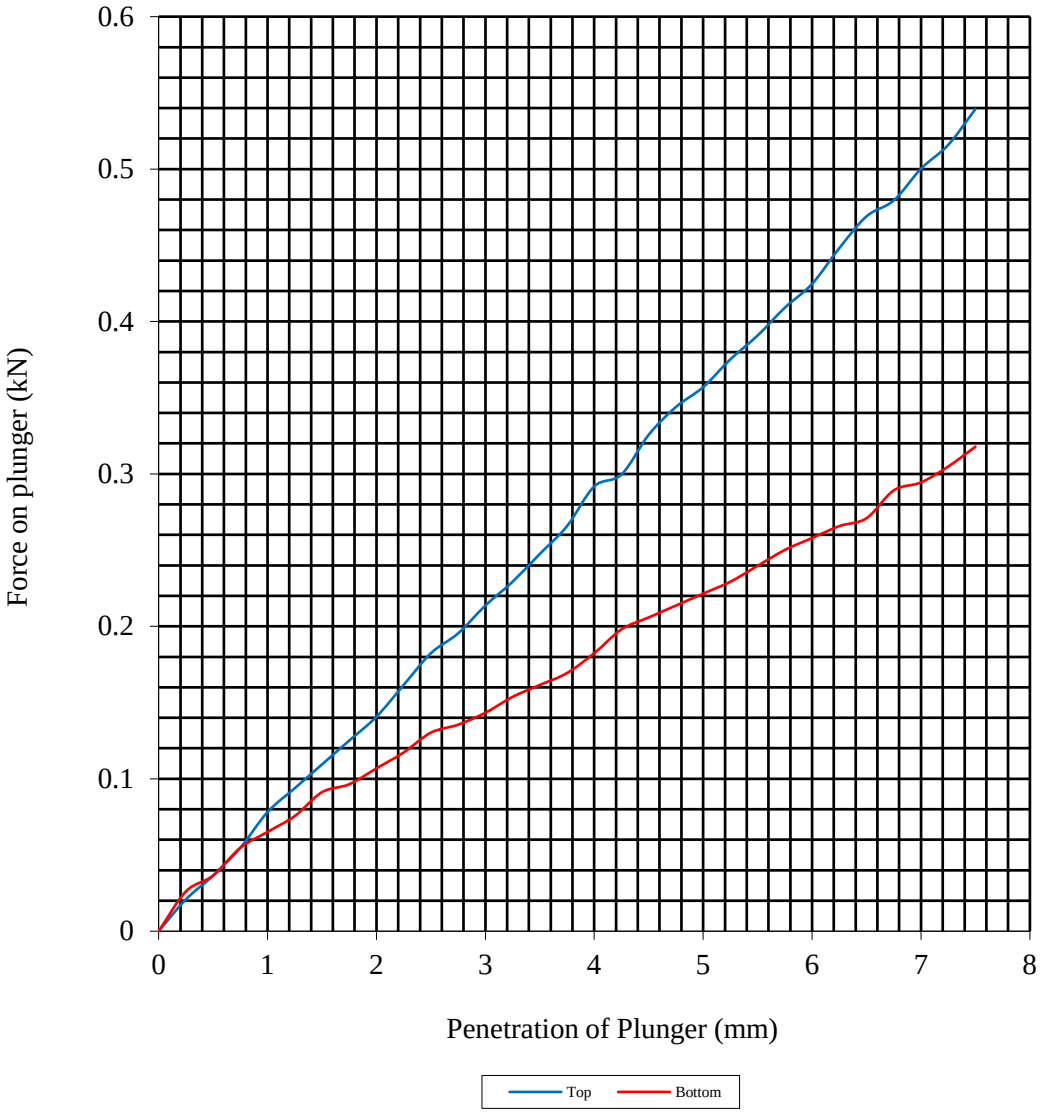
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR13 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 21 | Surcharge Kg: | 4.20 | Sample Top | 21 | Sample Top | 1.8 |
| Bulk Density Mg/m3: | 2.07 | Soaking Time hrs | 0 | Sample Bottom | 21 | Sample Bottom | 1.1 |
| Dry Density Mg/m3: | 1.71 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 2 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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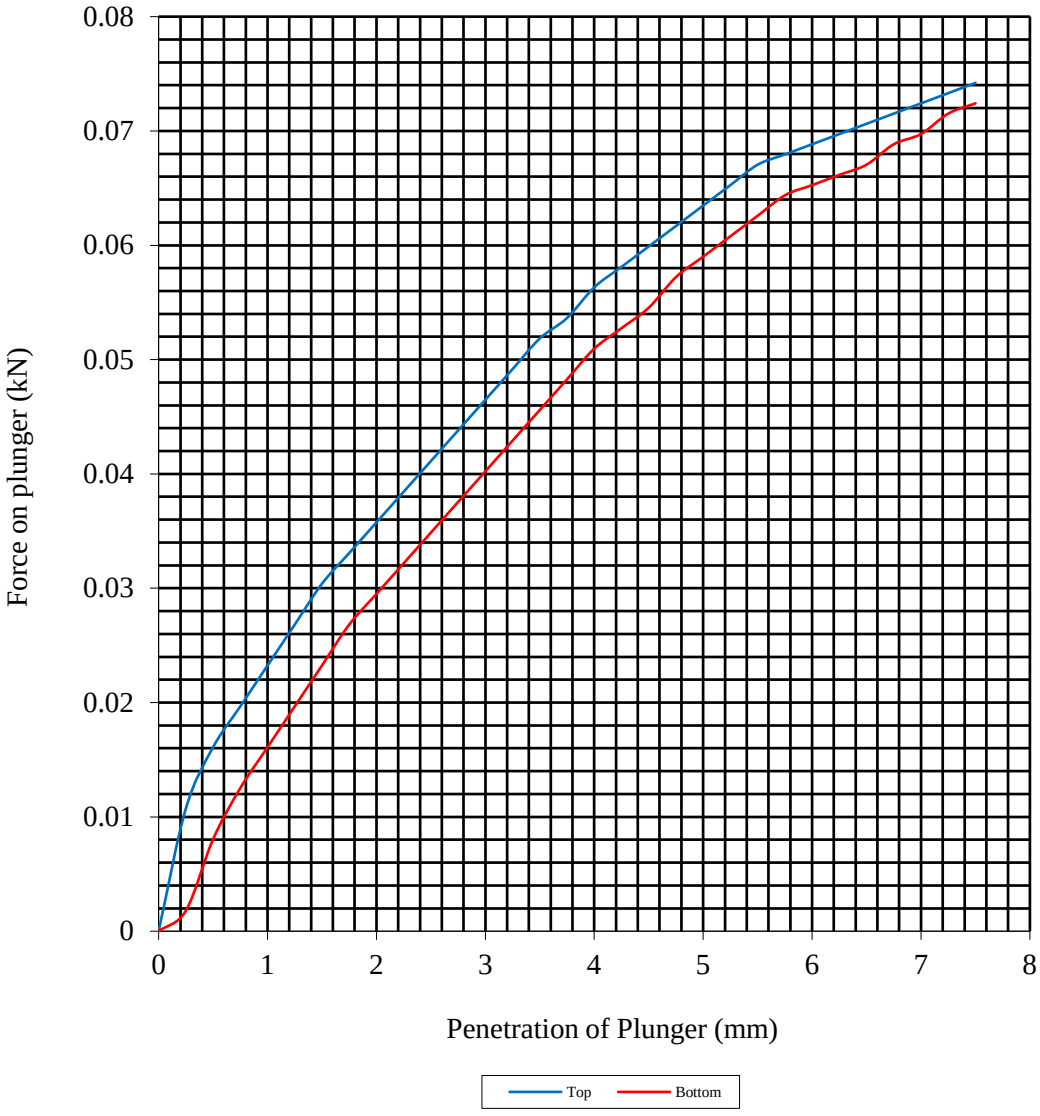
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR14 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 22 | Surcharge Kg: | 4.20 | Sample Top | 22 | Sample Top | 0.3 |
| Bulk Density Mg/m3: | 2.03 | Soaking Time hrs | 0 | Sample Bottom | 22 | Sample Bottom | 0.3 |
| Dry Density Mg/m3: | 1.66 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 13 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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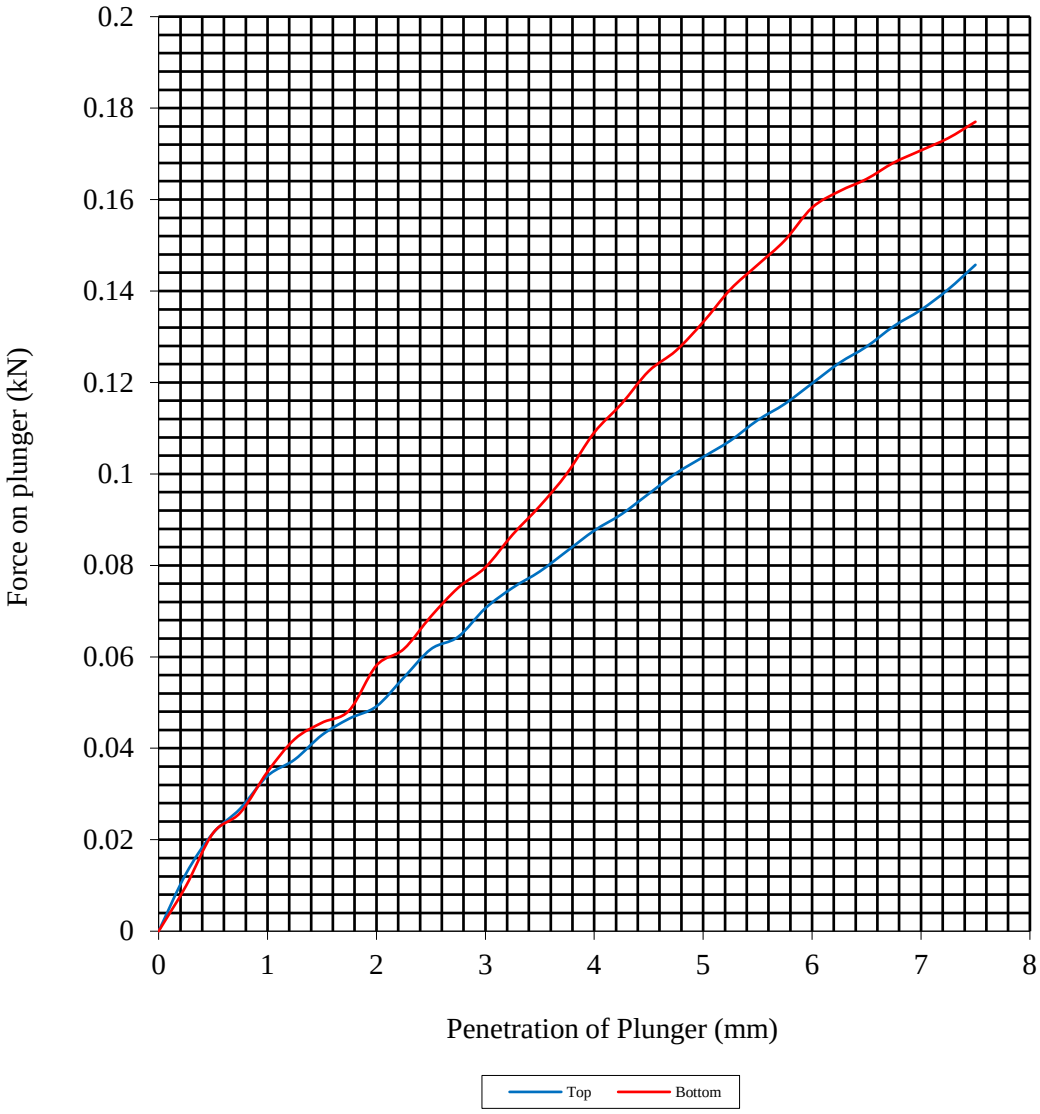
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR15 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 21 | Surcharge Kg: | 4.20 | Sample Top | 21 | Sample Top | 0.5 |
| Bulk Density Mg/m3: | 2.09 | Soaking Time hrs | 0 | Sample Bottom | 21 | Sample Bottom | 0.7 |
| Dry Density Mg/m3: | 1.74 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 10 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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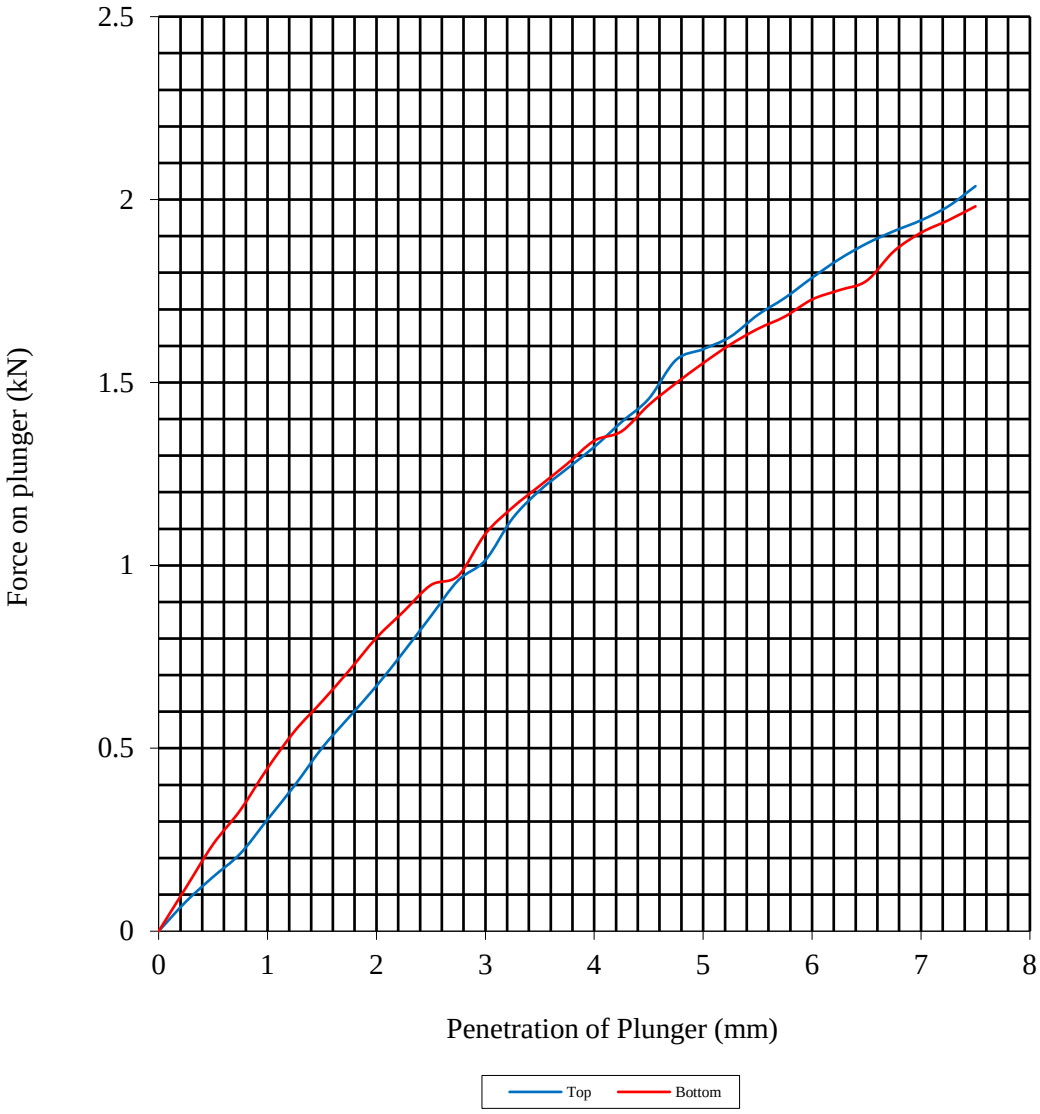
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR16 **Top Depth (m):** 0.70

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 18 | Surcharge Kg: | 4.20 | Sample Top | 18 | Sample Top | 8.0 |
| Bulk Density Mg/m3: | 2.12 | Soaking Time hrs | 0 | Sample Bottom | 18 | Sample Bottom | 7.8 |
| Dry Density Mg/m3: | 1.80 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 2 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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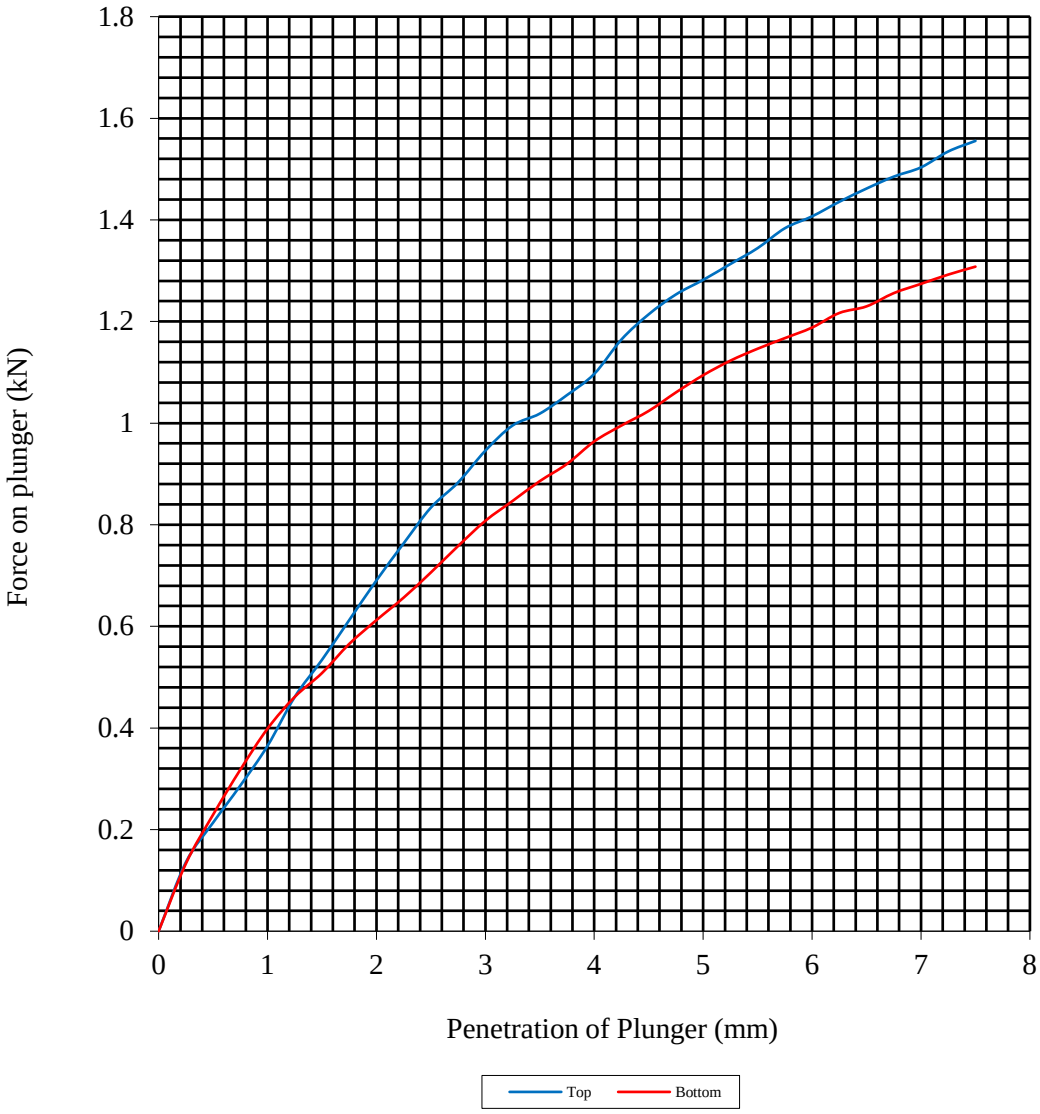
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR17 **Top Depth (m):** 0.70

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 20 | Surcharge Kg: | 4.20 | Sample Top | 20 | Sample Top | 6.4 |
| Bulk Density Mg/m3: | 2.07 | Soaking Time hrs | 0 | Sample Bottom | 20 | Sample Bottom | 5.5 |
| Dry Density Mg/m3: | 1.73 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 2 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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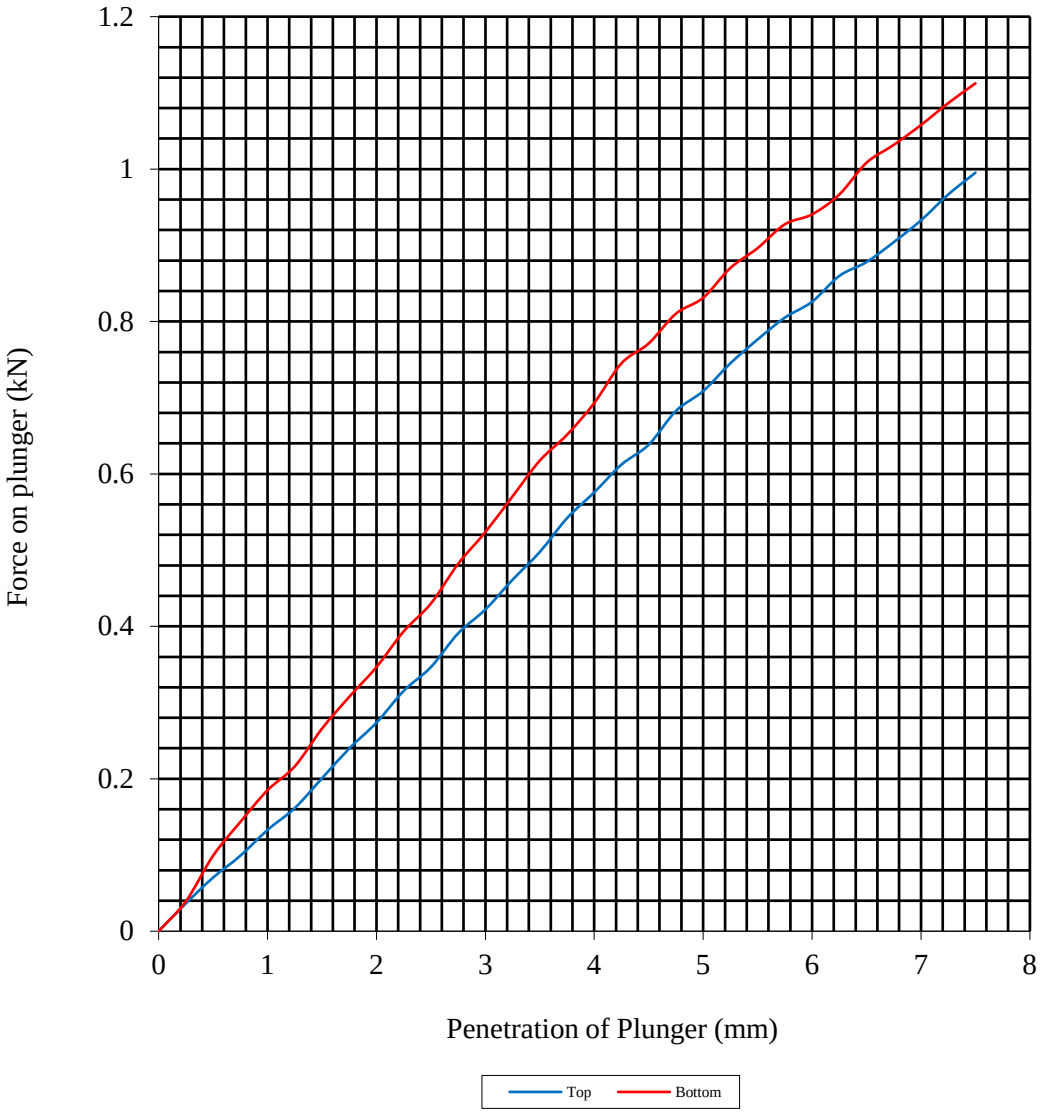
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR18 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 18 | Surcharge Kg: | 4.20 | Sample Top | 18 | Sample Top | 3.5 |
| Bulk Density Mg/m3: | 2.12 | Soaking Time hrs | 0 | Sample Bottom | 18 | Sample Bottom | 4.2 |
| Dry Density Mg/m3: | 1.79 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 4 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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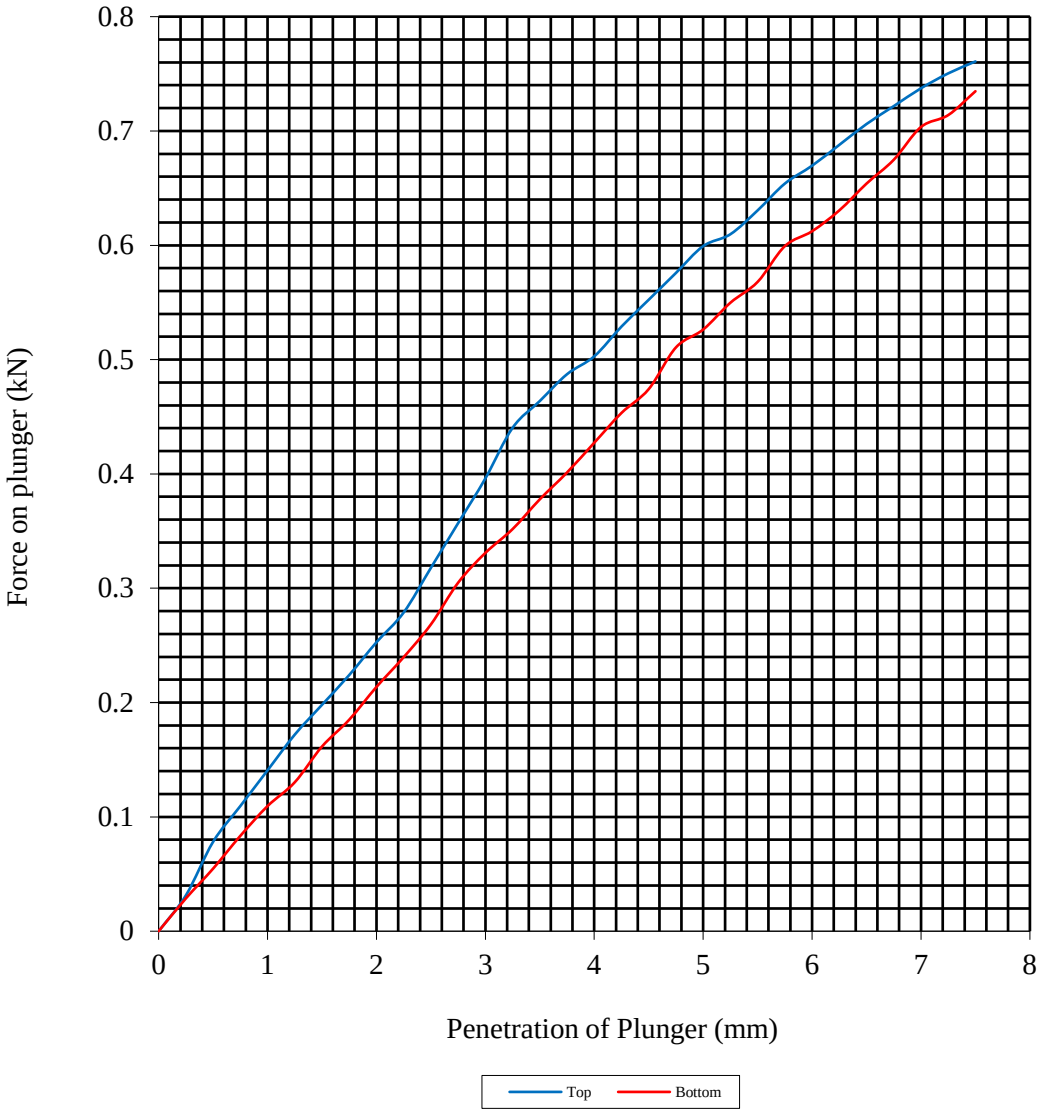
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR19 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 18 | Surcharge Kg: | 4.20 | Sample Top | 18 | Sample Top | 3.0 |
| Bulk Density Mg/m3: | 2.11 | Soaking Time hrs | 0 | Sample Bottom | 18 | Sample Bottom | 2.6 |
| Dry Density Mg/m3: | 1.78 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 5 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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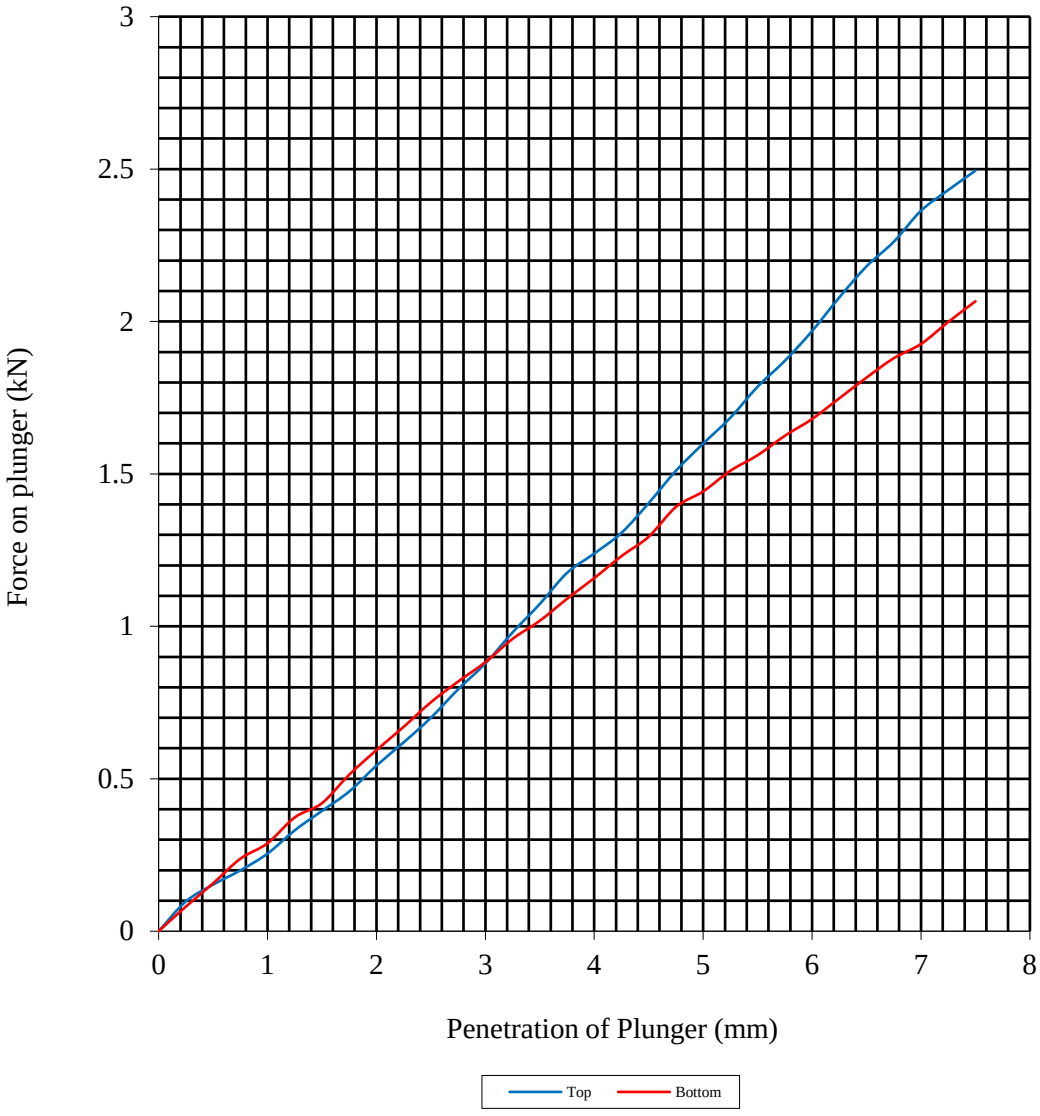
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR20 **Top Depth (m):** 0.50

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 16 | Surcharge Kg: | 4.20 | Sample Top | 16 | Sample Top | 8.0 |
| Bulk Density Mg/m3: | 2.11 | Soaking Time hrs | 0 | Sample Bottom | 16 | Sample Bottom | 7.2 |
| Dry Density Mg/m3: | 1.82 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 10 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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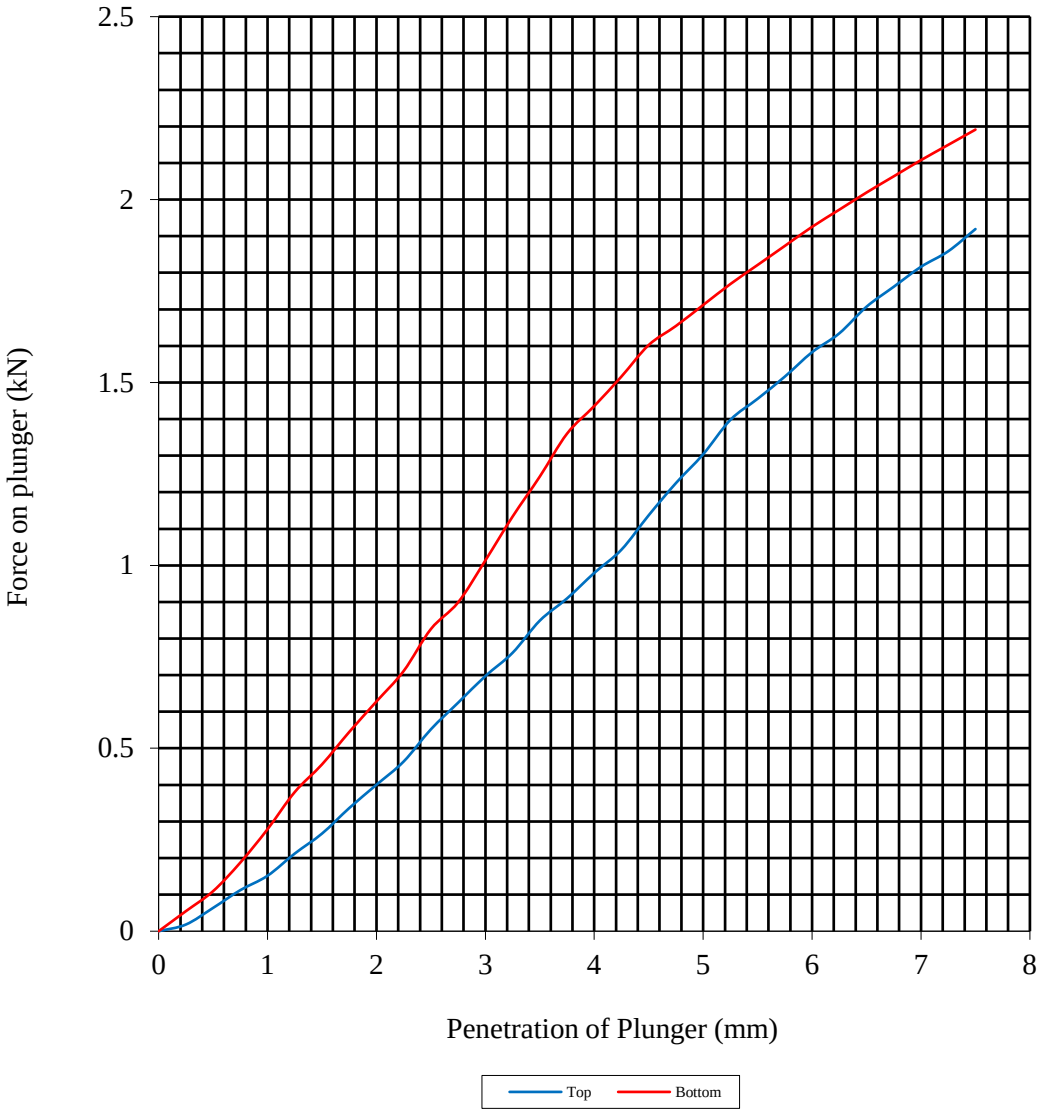
# CALIFORNIA BEARING RATIO TEST

**Non compliance with BS 1377 : Part 4 : 1990**

**Hole Number:** CBR21 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 18 | Surcharge Kg: | 4.20 | Sample Top | 18 | Sample Top | 6.5 |
| Bulk Density Mg/m3: | 2.16 | Soaking Time hrs | 0 | Sample Bottom | 18 | Sample Bottom | 8.6 |
| Dry Density Mg/m3: | 1.83 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 41 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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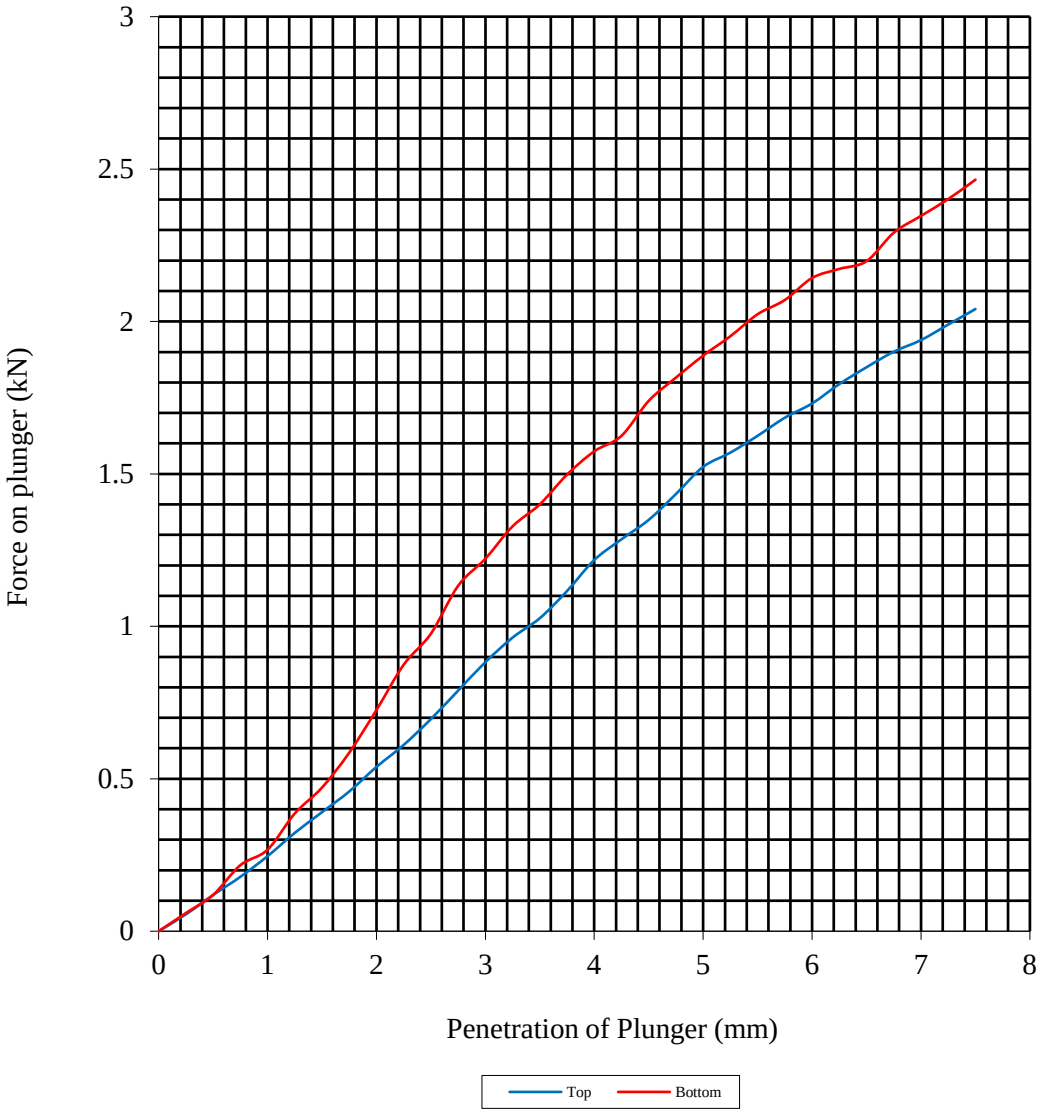
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR22 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 14 | Surcharge Kg: | 4.20 | Sample Top | 14 | Sample Top | 7.6 |
| Bulk Density Mg/m3: | 2.18 | Soaking Time hrs | 0 | Sample Bottom | 14 | Sample Bottom | 9.4 |
| Dry Density Mg/m3: | 1.91 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 4 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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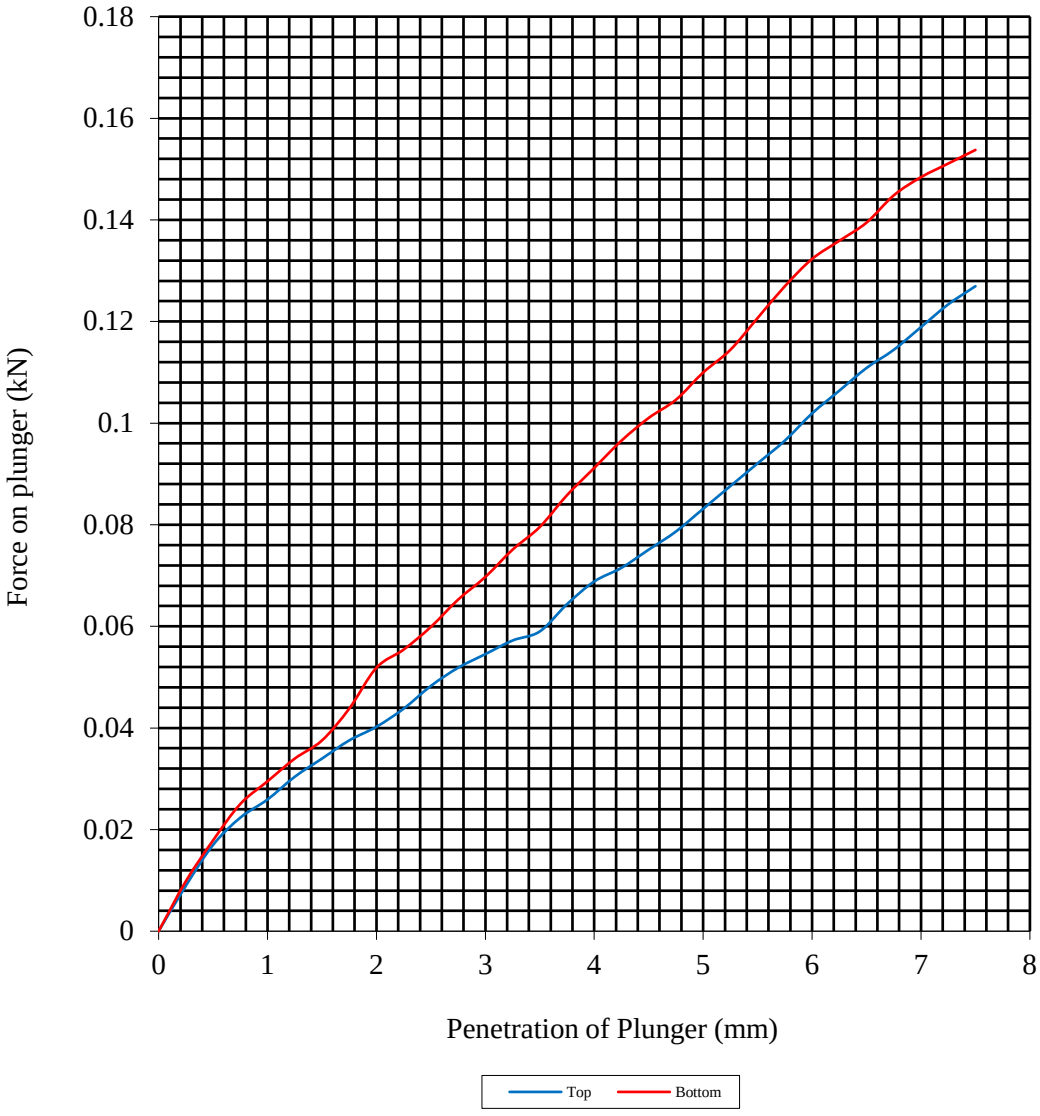
# CALIFORNIA BEARING RATIO TEST

**BS 1377 : Part 4 : 1990**

**Hole Number:** CBR23 **Top Depth (m):** 0.60

**Sample Number:** **Base Depth (m):**

**Sample Type:** B




| Initial Sample Conditions | | Sample Preparation | | Final Moisture Content % | | C.B.R. Value % | |
|---|---|---|---|---|---|---|---|
| Moisture Content: | 28 | Surcharge Kg: | 4.20 | Sample Top | 28 | Sample Top | 0.4 |
| Bulk Density Mg/m3: | 1.91 | Soaking Time hrs | 0 | Sample Bottom | 28 | Sample Bottom | 0.5 |
| Dry Density Mg/m3: | 1.50 | Swelling mm: | 0 | Remarks : See Summary of Soil Descriptions. | | | |
| Percentage retained on 20mm BS test sieve: | | | 3 | | | | |
| Compaction Conditions | | 2.5kg | | | | | |

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# UK and Ireland Office Locations