PROPOSED HOUSING DEVELOPMENT AT BALLYGUILE RD, CO.WICKLOW

SERVICES DESIGN REPORT

CLIENT.	WICKLOW COUNTY COUNCIL
PROJECT NO.	25337
DOCUMENT NO.	25337-SDS-XX-RP-C-00-01
DATE	FEBUARY 17TH, 2026

REV. 00

DOCUMENT TITLE SHEET

Client:	Wicklow County Council, Wicklow Town, Co. Wicklow. A67FW96
Project Description:	The proposed development at Ballyguile Rd, Wicklow Town, Co. Wicklow. The construction of 16no. units (compromising; 8no 1-Bedroom Apartments; 8no 2-Bedroom 2 Storey Mid Terrace House) and connection to existing services together with all ancillary site development works.
Project. No.	25337

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DOCUMENT CONTROL SHEET

PROJECT No:	25337				
PROJECT NAME:	Proposed Housing Development at Ballyguile Rd, Wicklow Town, Co. Wicklow.				
DOCUMENT REF:	"P:\2025\25337 - Wicklow Co. Co. - Housing, Ballyguile Rd\Design\2 - Civil Design\03. Service Design Report - 17.02.2026"				
REVISION	DATE	DESCRIPTION	Services Design Report		
01	27/09/2025		PREPARED	CHECKED	ISSUED
		INITIALS:	AS	CD	AS
		DATE:	17.02.2026	17.02.2026	18.02.2026
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1 INSTRUCTION

SDS Design Engineers have been appointed by the Client Wicklow County Council, to prepare a Services Design Report to accompany a Planning Application to Wicklow County Council for the proposed development, at Ballyguile Rd, Wicklow Town, Co. Wicklow.

2 PROJECT DETAILS

The proposed development at Ballyguile Rd, Wicklow Town, Co. Wicklow. comprises of the development of residential dwellings

The proposed development comprises of the following:

- Formation of one new development entrance
- The construction of 16no. units (compromising; 8no 1-Bedroom Apartments; 8no 2-Bedroom 2 Storey Mid Terrace House)
- All ancillary site development works

Figure 2.1 shows the proposed site layout plan for the new development.

Figure 2.1 – Proposed Site Layout Plan

3 SITE LOCATION, SITE DESCRIPTION

The application site is a greenfield site located in the townland of Ballyguile Rd, Wicklow Town, Co. Wicklow. (Figure 3.1). The site is located to the south of the Quarry Road estate and on the west edge of the Cross Road estate. The site has an area of approximately 0.299 hectares (2992m2 | 0.739 acres). This application includes all the required drawings for the drainage and Sustainable urban Drainage Design Systems (SuDS), foul, and watermain works.

Figure 3.1 - Site Location *(image courtesy of Google Maps)*

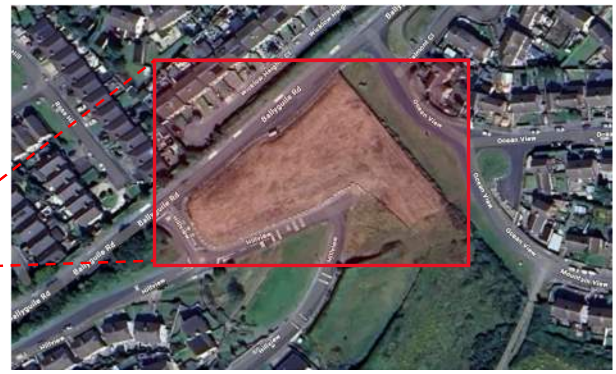

Figure 3.2 – Site location at Ballyguile Rd, Wicklow Town, Co. Wicklow. *(image courtesy of Google Maps)*

Figure 3.3 – Areal view of proposed site *(image courtesy of Google Maps)*

4 BACKGROUND SURVEYS

4.1.1 SITE TOPOGRAPHY

A topographical survey was conducted by PCA in May 2025. The proposed runoff from the site will mimic the existing topography of the site. Topographical survey of the existing site is presented in Appendix A.

4.1.2 GROUND CONDITIONS

In order to assertain the existing ground counditions a site investigation was carried out by Site Investigations in December 2025. The site invesigation includes the following elements:

- 5 No. Trial Pits
- 5 No. Boreholes
- 4 No. Plate Tests
- 3 No. Infiltration Tests

Figure 4.1 below shows the extend of the site investigation. Refer to site investigation report by Site Investigations Ltd.

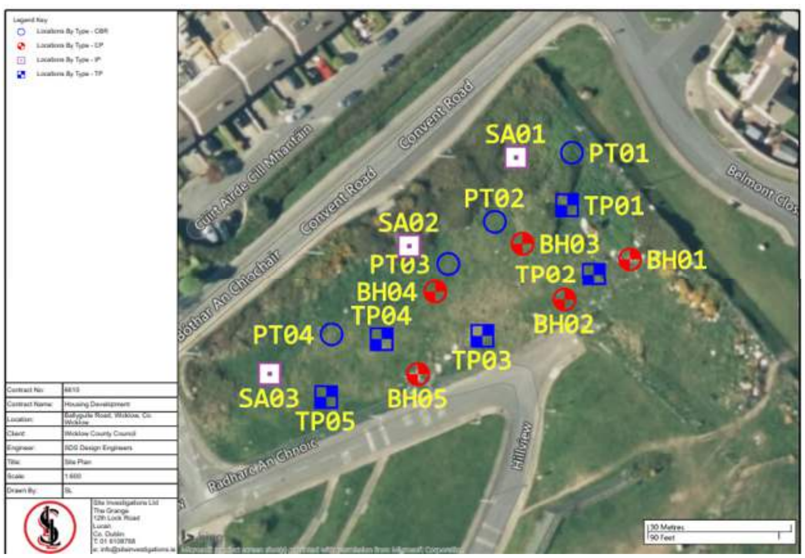

Figure 4.1 Site investigation locations (Source: Site Investigations Ltd)

5 FLOOD RISK

To establish if there is a risk of flooding to the proposed development and its location a desktop-based flood risk study was undertaken. As part of this study, several informative reports, studies, and records were reviewed to determine if risk of flooding was an issue. The following sources of information was used in order to determine if the proposed site poses a flood risk:

- Historic flood maps and reports from OPW (www.floodinfo.ie)
- Western Catchment Flood Risk Assessment and Management (CFRAM)
- Limerick County Council Development Plan 2022-2028.

5.1 HISTORIC FLOODING

Figure 5.1 below shows the past flood events within 2.0 km zone of Wicklow Town.

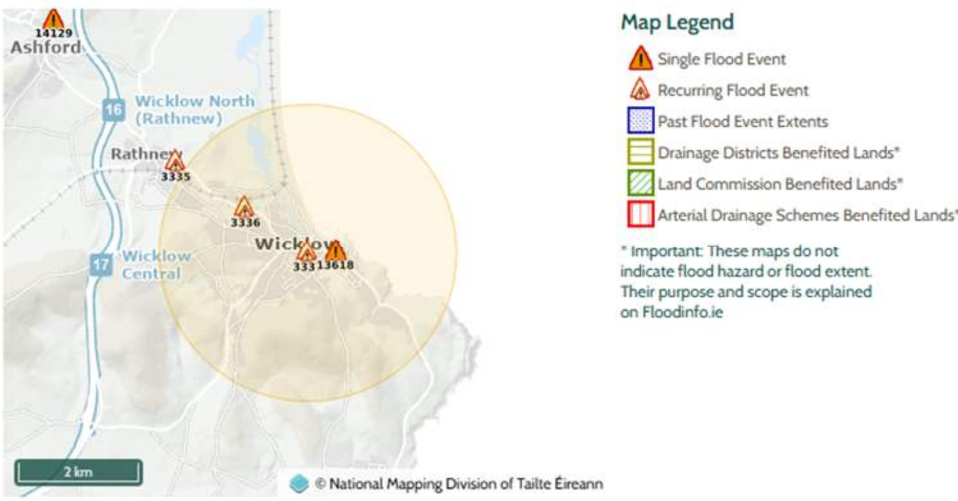

Figure 5.1 – Past flood events within 2.0Km of proposed site (Source: www.floodinfo.ie)

Figure 5.1.1 below map to show previous flood events in close proximity to the site. As per figure below no previous flood events effected the site.

Figure 5.1.1 – Map showing no previous flood events around proposed site. (Source: www.floodinfo.ie)

5.2 MITIGATING RISKS

The proposed storm network strategy should not pose a flood risk to the proposed site and surrounding area, as the following mitigating measures will be employed:

- The proposed drainage network will include SuDS features which will be maintained on a regular basis to reduce the risk of a blockage.
- The runoff from the site is discharged to the existing surface water network with a hydrobrake at a restricted flow rate of 2.0/s.
- SuDS features are designed in accordance with Greater Dublin Strategic Drainage Study recommendations (1 in 100-year flood event plus 30% climate change due to global warming).

6 LOCAL AUTHORITY

Wicklow County Council will be provided with the relevant drawings and the associated design calculations for the services proposed for this development for consideration.

7 SURFACE WATER STRAGETY

The following section outlines the hierarchy of options when considering the removal and disposal of surface water from site, before outlining a host of potential sustainable urban drainage system (SuDS) techniques considered when designing the surface water collection system for the proposed site. The proposed surface strategy was designed in accordance with the following guidelines/polices:

- The SUDS Manual (C754,2015)
- Wicklow County Development Plan 2022-2028.
- Greater Dublin Strategic Drainage Study (GDSDS)

It is proposed that SuDS techniques are implemented wherever possible to manage surface water runoff from the development. Surface water management proposals for the site have been articulated to mimic the natural drainage patterns of the existing site.

7.1 HIERARCHY OF DISPOSAL

Generally, when designing a proposed surface water collection system, the philosophy of the design should be to prioritise the below methods of discharging surface water run off as much as reasonably practicable, from 1 (most desirable) to 5 (least desirable):

1. Collect for Re-Use
2. into the ground (infiltration),
3. To a surface waterbody,
4. To a surface water sewer, highway drain, or other drainage systems,
5. To a combined sewer.

Table 6.1 below shows a summary of the hierarchy of disposal for the proposed development. The surface water hierarchy of disposal will be based on a priority level 4 due to site constraints.

Table 6.1: Hierarchy of Disposal

Hierarchy		Priority Level	Discharge Location	Availability Y/N	Comments
		1	Collect for Use	N	Rainwater harvesting is deemed unpracticable due to the low water demand.
		2	Into the ground - Infiltration	N	Infiltration testing was carried out and results show that the poor infiltration rates and therefore infiltration has been disregarded.
		3	To a Surface Waterbody	N	There are no surface waterbodies close to this site and therefore discharge to a surface waterbody has been disregarded
		4	Discharge to a surface water sewer, highway drain, or another drainage system	Y	Discharge to an existing local Authority storm network.
		5	Discharge to a combined sewer	N	According to Uisce Eireann records a combined sewer is not present.

1. COLLECT FOR Re-USE

The low water demand for the proposed development does not warrant rain harvesting system as it would involve pumping of water which would outweigh the cost saving and therefore the scheme does not include collection for reuse.

2. INTO THE GROUND - INFILTRATION

Infiltration testing was carried out on 3 no. trial pits in accordance with BRE Digest 365 and yielded poor Infiltration rates. As a result of this, such findings consequently make infiltration an unviable option for the surface water treatment of the proposed development, therefore making controlled discharge and storage the proposed treatment option.

3. TO A SURFACE WATERBODY

There are no surface water bodies located in close proximity to this site therefore, this scheme does not include discharge to a surface waterbody in its scheme.

4. DISCHARGE TO A SURFACE WATER, HIGHWAY DRAIN, OR ANOTHER DRAINAGE SYSTEM

An existing surface water network discharges to an existing surface water line in quarry road which is to the north west of the proposed site.

5. DISCHARGE TO A COMBINED SEWER

According to Uisce Eireann records a combined sewer is not present near the site and there is no intention to connect to a combined sewer.

7.2 COMPLINACE WITH SuDS PRINCIPLES

7.2.1 COMPLIANCE WITH C573 SuDS MANUAL

The C573 SuDS Manual explains that the primary function of SuDS measures is to protect watercourses from any impact due to the new development. However, SuDS can also improve the quality of life in a new development and urban spaces by making them more vibrant, visually attractive, sustainable and more resilient to change. This document explains the wider social context of SuDS and how SuDS can deliver high quality drainage while supporting urban areas to cope better with sever rainfall both now and in the future. There four pillars of SuDS include:

1. Water Quantity (mitigate flood risk & protect natural water cycle)
2. Water Quality (manage the quality of the runoff to prevent pollution)
3. Amenity (create and sustain better places for people)
4. Biodiversity (create and sustain better places for nature)

7.2.2 SuDS MANAGEMENT TRAIN

The SuDS measures proposed are usually linked in series, and this is commonly known as a SuDS Management Train, (SMT). The SMT ensures that surface runoff is captured, conveyed, stored, intercepted, and removed of pollutant correctly and efficiently before it is discharged back into the surrounding watercourse/network. This approach will ensure that the most effective measures are utilised in the correct sequence throughout the site. Table 26.7 (Figure 7.1) (CIRIA, SuDS Manual 2015) demonstrates the effectiveness of each SuDS measure along the SMT.

TABLE 26.7 Indicative suitability of SuDS components within the Management Train

SuDS component	Interception[1]	Close to source/ primary treatment	Secondary treatment	Tertiary treatment
Rainwater harvesting	Y			
Filter strip	Y	Y		
Swale	Y	Y	Y	
Filter drain	Y		Y	
Permeable pavement	Y	Y		
Bioretention	Y	Y	Y	
Green roof	Y	Y		
Detention basin	Y	Y	Y	
Pond	[3]	Y[2]	Y	Y
Wetland	[3]	Y[2]	Y	Y
Infiltration system (soakaways/ trenches/ blankets/basins)	Y	Y	Y	Y
Attenuation storage tanks	Y[4]			
Catchpits and gullies		Y		
Proprietary treatment systems		Y[5]	Y[5]	Y[5]

Figure 7.1 CIRIA C573 SuDS Manual Table (Source: The SUDS Manual C754,2015)

7.3 SUSTAINABLE DRAINAGE SYSTEMS (SuDS)

The following section outlines the potential SuDS techniques considered for the proposed site, with proposals such as green roofs, Soakaways, swales, and modular systems all being discussed herein.

7.3.1 RAINWATER HARVESTING

Rainwater harvesting (RWH) is the collection of rainwater runoff for use. Runoff can be collected from roofs and other impermeable areas, stored, treated (where required) and then used as a supply water for domestic, commercial and/or institutional properties.

The costs of RWH would be disproportionate to the benefit to the proposed development. Each housing unit would require a separate RWH system and a separate filtration and distribution system within each unit to provide water to toilets, sinks and for external garden use. As the water usage for these units will be relatively small, the associated costs of a RWH system would not be practical.

7.3.2 FILTER STRIP/SWALE/FILTER DRAIN

Filter strips are gently sloping, vegetated strips of land that provides opportunities for slow conveyance and infiltration (where appropriate). They are designed to accept runoff as overland sheet flow from upstream development and often lie between a hard-surfaced area and a receiving stream, surface water collection, treatment of disposal system.

Swales are linear vegetated drainage features in which surface water can be stored or conveyed. They can be designed to allow infiltration, where appropriate. They promote low flow velocities to allow much of the suspended particulate load in the storm water runoff to settle out, thus providing effective pollutant removal

Filter Drains (or French Drains) is a linear drainage trench designed to manage waterflow and filter runoff to reduce pollutants entering water drainage systems.

A roadside edge detail will be used where practical that will allow surface water from the roadway to runoff from the roadway through localized flush kerb areas to allow surface water from the roadway to enter a roadside filter strip. The kerb areas have only been reduced locally (rather than continuously) to ensure vehicles do no park in the filter strip area, which would lead to maintenance issues. The filter strip will lead to a shallow swale which will allow infiltration the filter drain below the swale and provide additional storage area while infiltration to the filter drain takes place. The swale will also filter the runoff from the roadway. The filter drain below the swale will allow infiltration into the ground below the pipework below the filter drain and the stone surround to the pipework. Testing indicates that the existing ground is unsuitable to rely on infiltration, however this detail will encourage the infiltration where it is available.

7.3.3 PERMEABLE PAVEMENTS

Permeable pavements provide a pavement suitable for pedestrian and/or vehicular traffic while allowing rainwater to infiltrate through the surface and into the underlying layers. The water is temporarily stored before it is infiltrated to the ground, reused or discharged to a watercourse or other drainage system. Pavements with aggregate sub-bases can provide good water quality treatment. When permeable paving for car parking bays is used, the stone sub-base not only stores and slows down the rate of discharge, but also increases the water quality of the discharge.

7.3.4 BIORETENTION AREAS/TREE PITS

Bioretention areas are shallow landscaped depressions which are typically under drained and rely on engineered soils, enhanced vegetation and filtration to remove pollution and reduce runoff downstream.

The filter strip/swale/filter drain described in Section 7.3.2 provide the same benefits as would be obtained by a biorention area without the added complexity of construction and additional maintenance requirements. Therefore bioretention areas have not been proposed for this project.

Tree pits are beneficial for bioretention as they intercept precipitation, allow water to evaporate from relief surfaces, facilitate infiltration and groundwater recharge due to their root systems, provide shade, and provide further amenity and biodiversity benefits.
The other SUDS features proposed for the development provide more cost effective and lower maintenance methods than tree pits for accomplishing the goals of the SMT train, so tree pits have not been provided.

7.3.5 GREEN ROOFS

Green roofs comprise a multi-layered system that covers the roof of a building or podium structure with vegetation cover, over a drainage layer. They are designed to intercept and retain precipitation, reducing the volume of run-off and attenuating peak flows. Green roofs are only suitable for flat roofed or gently sloping roof areas.
Due to the A-frame roof architectural design for the proposed dwellings, green roofs have been disregarded.

7.3.6 PONDS / WETLANDS

Ponds and wetlands can provide both storm water attenuation and treatment. They are designed to support emergent and submerged aquatic vegetation along their shoreline. Runoff from each rain event is detained and treated in the pool or wetland. The retention time promotes removal of silt through sedimentation and the opportunity for biological uptake mechanisms to reduce nutrient concentrations.
Due to the small scale and size of the proposed development, there would not be sufficient space available to create ponds/wetlands and still provide usable green areas for the use of the residents. Open water areas such as ponds/wetlands would also pose a risk of drowning, especially in areas with young children.

7.3.7 INFILTRATON SYSTEMS (SOAKAWAYS/TRENCHES/BLANKETS/BASINS)

Infiltration systems such as Soakaways, Infiltration Trenches, Infiltration Blankets and Infiltration Basins are used to capture surface water runoff and allow it to infiltrate (soak) and filter through to the subsoil layer, before returning it to the water table below.
Infiltration systems require ground conditions that allow for infiltration into the existing subsoil. Ground conditions within this development have been verified by testing to BRE365 to being not suitable for infiltration. As a result, infiltration systems have been disregarded due to poor infiltration rates encountered during site testing.

7.3.8 ATTENUATION STORAGE TANKS (GEO-CELLULAR / MODULAR SYSTEMS)

Attenuation tanks composed of Modular plastic geo-cellular systems with a high void ratio can be used to create a below ground storage structure. Modular tanks can be used for runoff attenuation but require silt trap protection and a suitable means of access for cleaning and inspection. A geo-cellular system has been adopted as an attenuation system which will provide 80m3 of storage for the proposed site.

7.3.9 EXISTING SURFACE WATER SYSTEM

There is existing surface water sewer located within the public road to the south west of the site. Refer to Appendix A for a Topographic Survey of the existing site. The surface water from the proposed site will be discharged to this existing surface water sewer network within the road to the south west of the site. A new surface water line will be required in the public road to the south west of the site to reach the existing surface water sewer line.

7.4 PROPOSED SURFACE WATER COLLECTION SYSTEM

The proposal for this development is to provide a new surface water collection network, collecting surface water run-off from houses through roof gutters, & downpipes. Surface water from roads will be collected through roadside gullies. A series of SUDS features will be incorporated as outlined in Section 7.3.

The surface water is routed through the site to proposed manhole SW4, from there it will pass through a Klargester NSBP003 Bypass Petrol and Oil separator before entering the proposed attenuation tank in the southwest corner of the site. A hydrobrake is to be located in proposed manhole SW6 which will restrict the outflow from the site, limiting the surface water flow from the site to a discharge of 2.0 l/s.

7.4.1 OUTFLOW FROM SITE

A HydroBrake Optimum by Hydro International (or similar equivalent) will be provided within proposed surface water manhole SW6 to limit the outflow as outlined above. Refer to drawing no drawing 25337-3021-PL2 for proposed discharge location.

7.4.2 SURFACE WATER ATTENUATION SYSTEM

As previously mentioned, the surface water attenuation system includes a Graf EcoBloc attenuation system. In total, this SuDS feature provides a cumulative surface water storage volume of approx. 80m3. This has been designed to provide storage for the surface water generated in a 1 in 100-year rainfall event, plus an allowance of 30% to cater for predicted climate change as per GDSDS requirements. For calculations regarding surface water attenuation system design, please see Appendix C. Rainfall return period data was utilised from Met Eireann, which is viewable in Appendix D.

PROPOSED SUDS STRATEGY

The proposed SuDS features will be integrated into the surface water drainage network for the proposed development, with the main objective of controlling the quantity of surface water runoff, managing the quality of runoff to prevent pollution, and creating sustaining local ecosystems. The proposed SuDS strategy for the site include the following:

- Permeable Paving with Voided Stone sub-base at Car Parking spaces.
- Roof surface water will be run through voided stone sub-base below car parking (where available) to slow discharge of roof surface water to main drainage system.
- Graf EcoBloc Attenuation Tank – The proposed attenuation tank shall assist with providing optimal surface water storage on site.

In addition the following measures will be used to restrict flow from the site and to improve the quality of the water to be discharged from the site.

- Hydrobrake – The proposed hydrobrake shall restrict the discharge from the site into the existing surface water network.
- Bypass Petrol/OIl Interceptor – The proposed interceptors shall cleanse the surface water prior to discharging into the existing surface water network.

8 PROPOSED WASTEWATER SEWER SYSTEM

The proposed wastewater sewer and sewer diversion will be constructed in accordance with the following:

- BS EN 752:2008 – Drain & Sewer Systems Outside Buildings,
- Building Regulations - TGD Part H – Drainage and Wastewater Disposal.
- Uisce Eireann Standard Details & Code of Practice.

A new 225mm diameter uPVC wastewater sewer will be laid within the site to accommodate the wastewater from all units. This sewer and accompanying manholes will be built in accordance with Uisce Eireann standard details and code of practice. This sewer will be connected to an existing Uisce Eireann sewer pipe which is in the road to the south west of the site outside the red line boundary.

For further detail of the proposed foul network and the connections to the existing foul network please see drawing 25098-3021-PL2.

8.1 **WASTEWATER** LOADING RATES

The following table 8.1 shows the wastewater discharge rates from the proposed residential development. The population of 2.7 persons/dwelling is from the Uisce Eireann Code of Practice. Daily Demand per person is 150 l/day plus a 10% allowance for infiltration into the system.

Table 8.1 - Estimated Foul Demand

Residential Wastewater Demand							
Use	No. of Units	Occupancy Rate (persons/ dwelling)	Population (P)	Daily Demand per Population (l/day)	Average daily domestic demand (l/day)	Average Flow (l/s)	Peak Flow (l/s)
Residential	16	2.7	44	150	7,260	0.084	0.466

The overall daily wastewater loading is 7,260 litres/day or 7.26m^3 day. As mentioned above, the proposed foul sewer system will be connected to the existing foul sewer network to the south of the proposed development. A pre-connection enquiry was submitted to Irish Water for the proposed development. Refer to Appendix E for pre-connection enquiry application.

9 POTABLE WATER SUPPLY

9.1 EXISTING WATER SUPPLY

Following the review of the Topo survey completed by Control Surveys there is an existing 100mm uPVC watermain situated in the footpath which runs along Ocean View Rd to the east boundary of the development. These can be seen on the Topographic survey in Appendix A.

9.2 PROPOSED WATER SUPPLY

A new 100mm diameter watermain will be constructed within the proposed site to serve all units. This new watermain will connect to a newly diverted watermain at the eastern part of the site.

The water demand is calculated in accordance with Code of Practice for Water Infrastructure, Connections and Developer Services, Design & Construction Requirements for Self-Lay Developments, July 2020 (Revision 2)', Section 3.7.2. The total peak average flow for the residential use will be 0.075 l/s with a peak flow of 0.469 l/s.

The proposed connection for the proposed development will be made in accordance with Irish Water Standard Details for Non-Mechanical Meter Chamber (40-250mm diameter): Ref. STD-W-26-Rev 03. Please refer to drawing 25337-3022-PL2 for the location and details of the proposed watermains network and fire hydrants proposed for this new site layout. A pre-connection application was submitted to Uisce Eireann for this proposed development.

Table 9.1 - Estimated Water Demand

Residential/Commercial Water Demand							
Use	No. of Units	Occupancy Rate (persons/ dwelling)	Population (P)	Daily Demand per Population (l/day)	Average daily domestic demand (l/day)	Average Flow (l/s)	Peak Flow (l/s)
Residential	16	2.7	44	150	6,480	0.075	0.469

9.3 FIRE HYDRANTS

It is proposed to provide 1 No. fire hydrant on the new watermain. Hydrants shall comply with the requirements of BS 750:2012 and shall be installed in accordance with Irish Waters Code of Practice and Standard Details.

10 SUMMARY AND CONCLUSIONS

SURFACE WATER SYSTEM

The proposed surface water network on site will consists of gutters, pipework, gullies, various SUDS features and a Graf EcoBloc Attenuation Tank. These SuDS features and attenuation tank are to work in tandem to provide a cumulative surface water storage capacity of circa 80m^3. A HydroBrake flow control device will reduce the outflow from the proposed application site to a maximum of 2.0l/s. This proposed design achieves compliance with all previously stated regulations whilst considering the constraints of the site.

WASTEWATER SYSTEM

The total wastewater loading from the site will be 7.26m^3/day, with a peak flow of 0.466 l/s.

WATERMAINS

The total volume of water required by the proposed development will be circa 6.48m^3/day, with a peak flow of 0.469 l/s.

APPENDIX A – TOPGRAPHICAL SURVEY

KEY

Fence	Hedge	Btm of bank	Rail	Road marking solid	Ic Inspection chamber	Gas Gas valve	Ep Electricity pole	Marker Service marker	Ridge Building ridge height
Road	Wall	Track	Gate	Road marking dashed	Tel Eircom	Aj Armstrong junction	Tp Telegraph pole	Stay Pole stay	Eave Building eave height
Path	Surface	Steps	Top of kerb	Road marking dashed	G Gully	Catv Cable	Rs Road sign	Bol Circular bollard	TOW Top of wall
Btm of kerb	Furniture	Ditch	Btm of kerb	Armco	Hyd Hydrant	Mh Cl: Circular manhole	Lp Lamp post	Bol Square bollard	TOF Top of fence
Building	Top of bank	Water edge	Road marking soild	Contours	Sv Stop valve	Mh Cl: Square manhole	Tl Traffic light	Station	TOT Top of tree

Tree

Overhead Cable

Notes :
* This Survey was produced for original clients specification at time of instruction.
* If the survey is to be used by any other parties, or for purposes other than those originally considered, further details or higher accuracies may be required.
- Please contact PCA
* PCA take no responsability for additions made by third parties to survey.
* Accuracy and amount of detail is based on scale of mapping.
* Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded the surface approximate only.
* Overhead cables are not measured accurately. They are an approximate estimate at points where cable is visible through vegetation. Cable heights will vary between poles and pylons according to slope, sag, weather conditions, etc. Where assigned a non-zero height OD, the heights of overhead cables should not be used to inform planning works. Cables heights must not be used for health and safety purposes. Please contact the relevant service providers to check all overhead cable clearances.

PAUL CORRIGAN & ASSOCIATES
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Grid	ITM	Job No.	250527EF
Levels	Malin Head	Date	27/05/25
Scale	1:200@A0	Drawn	EF
Revision	Original	Checked	MC

SOCIETY OF CHARTERED SURVEYORS IRELAND

RICS

Ballyguile Road Wicklow Town

Topographical Survey Sheet 1/2

KEY

Fence	Hedge	Btm of bank	Rail	Road marking solid	Ic	Inspection chamber	Gas	Gas valve	Ep	Electricity pole	Marker	Service marker	Ridge	Building ridge height		Tree
Road	Wall	Track	Gate	Road marking dashed	Tel	Eircom	Aj	Armstrong junction	Tp	Telegraph pole	Stay	Pole stay	Eave	Building eave height		Overhead Cable
Path	Surface	Steps	Top of kerb	Road marking dashed	G	Gully	Catv	Cable	Rs	Road sign	Bol	Circular bollard	.TOW	Top of wall		
Btm of kerb	Furniture	Ditch	Btm of kerb	Armco	Hyd	Hydrant	Mh Cl:	Circular manhole	Lp	Lamp post	Bol	Square bollard	.TOF	Top of fence		
Building	Top of bank	Water edge	Road marking soild	Contours	Sv	Stop valve	Mh Cl:	Square manhole	Tl	Traffic light		Station	.TOT	Top of tree		

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* Accuracy and amount of detail is based on scale of mapping.
* Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded the surface approximate only.
* Overhead cables are not measured accurately. They are an approximate estimate at points where cable is visible through vegetation. Cable heights will vary between poles and pylons according to slope, sag, weather conditions, etc. Where assigned a non-zero height OD, the heights of overhead cables should not be used to inform planning works. Cables heights must not be used for health and safety purposes. Please contact the relevant service providers to check all overhead cable clearances.

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Grid	ITM	Job No.	250527EF
Levels	Malin Head	Date	27/05/25
Scale	1:200@A0	Drawn	EF
Revision	Original	Checked	MC

SOCIETY OF CHARTERED SURVEYORS IRELAND — RICS

BALLYGUILE ROAD WICKLOW TOWN

TOPOGRAPHICAL SURVEY SHEET 2/2

APPENDIX B – SITE INVESTIGATION REPORT

S.I. Ltd Contract No: 6610

Client: Wicklow County Council

Engineer: SDAS Design Engineers

Contractor: Site Investigations Ltd

Ballyguile Road
Wicklow, Co. Wicklow
Site Investigation Report

Prepared by:

Letch

....

Stephen Letch

Issue Date:	29/01/2026
Status	Draft
Revision	0

Contents: Page No.

Appendices:

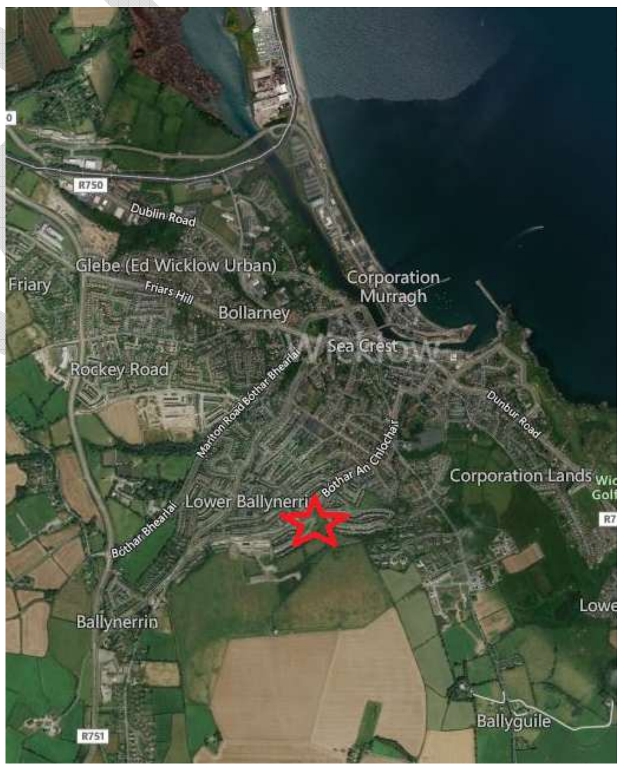
1. Introduction

On the instructions of SDS Design Engineers, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Ballyguile Road, Wicklow, Co. Wicklow. The investigation was for a residential development on the site, Hillview, and was completed on behalf of Wicklow County Council. The fieldworks were completed in December 2025.

This draft report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed. The report may be used for reference only with no permission for the report to be used in planning permission submissions. The final report will be issued on receipt of payment and at that time, the report may be used for design purposes and planning permission submissions.

2. Site Location

The site is located to the south of Wicklow town centre at Hillview off Convent Road. The first map below shows the location of Wicklow to the south of Dublin and the second map shows the location of the site in Wicklow.



3. Fieldwork

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

- 5 No. cable percussive boreholes
- 5 No. trial pits
- 3 No. soakaway tests
- 4 No. plate tests

3.1. Cable Percussive Boreholes

Cable percussion boring was undertaken at 5 No. locations using a Dando 2000 rig and constructed 200mm diameter boreholes. The boreholes terminated at shallow depths ranging from 2.10mbgl (BH04 and BH05) to 3.20mbgl (BH01) after two hours chiselling was completed and no further progress was made. It was not possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 1.00mbgl where N=26-(4,4/6,5,7,8)). Where refusal of 50 blows across the test zone was achieved, the penetration depth is also reported (e.g., BH03 at 3.00mbgl where N=50-(7,11/50 for 30mm)).

At BH01, a groundwater monitoring standpipe was installed to allow for equalisation of groundwater in the standpipe with a gravel response zone and bentonite seals at the top to prevent downward migration of water from the surface.

The cable percussive borehole logs are presented in Appendix 1.

3.2. Trial Pits

5 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated, which were returned to the laboratory for geotechnical testing. Pit wall stability and groundwater ingresses were recorded as the trial pits were excavated and they were backfilled with arisings upon completion.

The trial pit logs and photographs are presented in Appendix 2.

3.3. Soakaway Tests

At 3 No. locations, soakaway tests were scheduled and logged by SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if water ingresses into the pits or if the water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

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

3.4. Plate Tests

At 0.50mbgl in 4 No. locations, plate tests were completed to provide a California Bearing Ratio value for pavement design. The tests used the tracked excavator used to provide kentledge and pressure is then added to a 600mm diameter plate, via a hydraulic jack, with the settlement of the plate measured using gauges. The rate of settlement is used to calculate the CBR value.

The plate test results are presented in Appendix 4.

3.5. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log and along with a site plan in Appendix 9.

4. Laboratory Testing

4.1. Geotechnical Testing

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

- 5 No. Moisture contents
- 5 No. Atterberg limits
- 14 No. Particle size gradings with 5 No. hydrometers
- 5 No. pH and sulphate content

The geotechnical laboratory test results are presented in Appendix 5.

4.2. Environmental Testing

Environmental testing was completed by ALS Environmental Ltd. and consists of the following:

- 3 No. Suite I analysis

The environmental test results are reported in Appendix 6 with a Waste Classification Report in Appendix 7 and a Soils Recovery Facilities report in Appendix 8.

5. Ground Conditions

5.1. MADE GROUND

MADE GROUND was encountered across the site to depths of 1.20mbgl to 1.60mbgl in the boreholes and BH01 to BH03 and 0.80mbgl to 2.10mbgl in the trial pits. This was dominated by cohesive clay soils with high gravel contents with anthropogenic material of plastic, scrap metal, rag and timber fragments identified in the trial pits.

5.2. Overburden

The natural ground conditions recorded thin layers of slightly sandy slightly gravelly silty CLAY underlying the fill material in the boreholes and then this in turn is underlain by grey silty sandy GRAVEL until the locations terminated on boulder obstructions. The trial pits recorded silty sandy GRAVEL immediately below the fill material.

The SPT tests at BH02 and BH03 at 1.00mbgl extended into the natural soils and recorded values of 23 and 21 respectively. BH01 to BH03 recorded full N-values at 2.00mbgl with values ranging from 37 to 43.

Laboratory tests of the shallow soils confirm that the MADE GROUND was dominated by cohesive CLAY soils with BH01 and BH02 recording cohesive CLAY soils beneath the fill material. The remainder of the site recorded granular GRAVEL soils with the particle size distribution curves showing poorly sorted curves with all grain sizes recorded in the gradings.

5.3. Groundwater

Groundwater details in the boreholes and trial pits during the fieldworks are noted on the logs in Appendices 1 and 2. Only TP01 and TP04 recorded groundwater ingresses at 2.60mbgl and 1.40mbgl respectively. TP01 was near the base of the pit whereas the ingress in TP04 was within the fill material. Ingress rates were assessed as seepages.

6. Recommendations and Conclusions

Please note the following caveats:

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

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

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

6.1. Shallow Foundations

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

As stated previously, man-made soils were recorded across the site depths ranging from 0.80mbgl to 2.10mbgl. SIL do not recommend that narrow shallow foundations are placed on fill material due to the unknown compaction methods used during laying of man-made material. This unknown could result in softer spots and differential settlement once construction is completed. If shallow foundations are to be used and man-made soils are encountered below foundation level, then the soil should be removed and replaced with engineered fill which is compacted to the required standard.

In order to calculate the allowable bearing pressures in cohesive soils, a correlation proposed by Stroud and Butler between SPT N-values and plasticity indices is used to calculate the undrained shear strength. Dependent on the plasticity index at each site, the Stroud and Butler correlation is C_u=4 to 6N. With the low to intermediate plasticity indexes recorded in the laboratory for the soils on this site, the correlation chosen is C_u=6N.

BH02 and BH03 recorded SPT N-values extending into the natural ground with N-values of 23 and 21 recorded. Using the lower value of 21 at 1.00mbgl, this indicates a C_u value of 126kN/m^2. This can then be used to calculate the ultimate bearing capacity, which is the total loading that the soil could withstand and this has been calculated as 660kN/m^2. Finally, a factor of safety is applied to ensure that failure of the soils does not occur and a factor of safety of 3 has been chosen for this site. This provides an allowable bearing capacity of 220kN/m^2.

BH01 recorded a value of 37 at 2.00mbgl in the cohesive CLAY soils and this indicates a very high C_u of 222kN/m^2, an ultimate bearing capacity of 1168kN/m^2 with an allowable bearing capacity of 390kN/m^2.

In granular soils, the SPT N-value can then be used to calculate the allowable bearing capacity, as per Terzaghi and Peck, using the correlation of SPT N-value x 10 = ABC. BH02 and BH03 recorded values of 42 and 43 and this indicates allowable bearing capacities of 420kN/m^2.

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

- The foundation is to be 1m wide.
- Foundations are to be constructed on a level formation of uniform material type (described above).
- All man-made or filled material is to be removed prior to construction.
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m^3.
- Based on groundwater observations this analysis assumes the groundwater will not influence the construction or performance of these foundations.
- All founding strata to be inspected by a suitably qualified Engineer prior to pouring the foundations.

The trial pits indicate that excavations should be stable for a short while at least. However, due to the high granular content of the soils encountered then the stability of the pit walls are reduced and therefore, regular inspection of temporary excavations should be completed during construction to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:

There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

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

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

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

As discussed previously, only two trial pits recorded groundwater ingresses during the fieldworks, at 2.60mbgl near the base of the pit in TP01 and at 1.40mbgl in the fill material in TP04.

There is always considerable uncertainty as to the likely rates of water ingress into excavations in fill material sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress (less than 2.00mbgl) into excavations of the fill material will be slow to medium, although rapid ingresses may be recorded if granular soils are encountered.

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

6.3. Soakaway Test

The soakaway test at SA01 passed the specification with the pit draining quickly due to the granular nature of the soils. This has allowed for the calculation of the f-value of 1.12×10^{-4}m/s.

The soakaway tests at SA02 and SA03 failed the specification as the water level did not fall sufficiently enough to complete the test. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The tests were terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation.

6.4. Pavement Design

The plate test results in Appendix 4 indicate CBR values ranging from 22.6% to 35.9%.

The plate test was completed at 0.50mbgl and inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.5. Contamination

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

The Waste Classification Report in Appendix 6, created using HazWasteOnline™ software, shows that the material tested can be classified as non-hazardous material with waste code 17-05-04.

Following this analysis of the solid test results, the leachate WAC analysis results were analysed in accordance with 2003/33/EC inert criteria and this shows that the soils would be able to be treated as Inert Waste.

Finally, a soil recovery facility screening has been completed and this is provided in Appendix 7. The soils from TP03 and TP05 failed the specification for all the Domain due to a PAH values of 17.7mg/kg and 7.45mg/kg exceeding the 1mg/kg threshold. The soil from TP02 failed the Domain 1 criteria due to arsenic and lead exceeding the thresholds for these facilities.

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

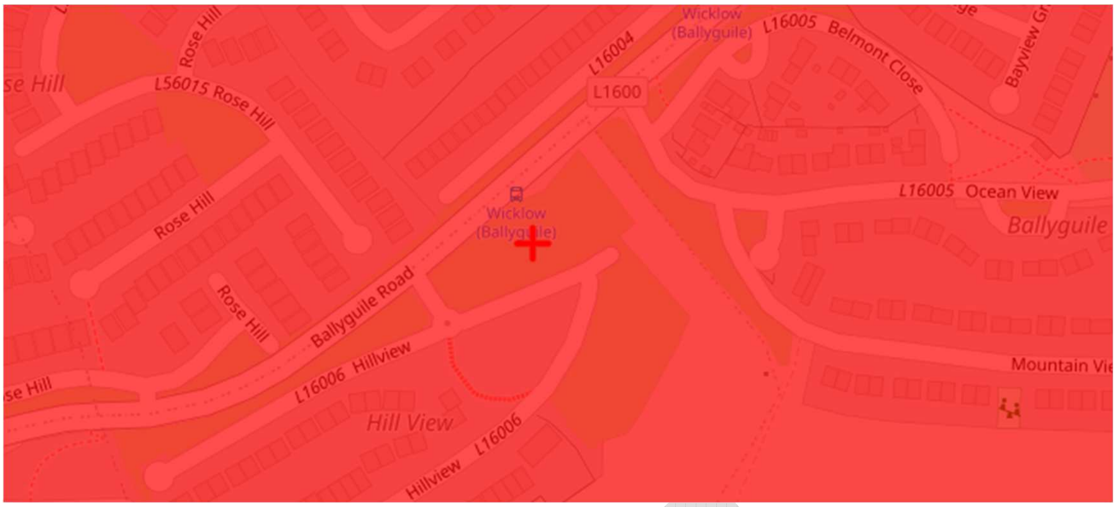
6.6. Aggressive Ground Conditions

The chemical test results in Appendix 5 indicate a general pH value between 7.55 and 8.37, which is close to neutral and below the level of 9, therefore no special precautions are required.

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

6.7. Radon Gas

The Environmental Protection Agency (EPA) has recently updated the Radon gas exposure map and this is available to view on the EPA website. This shows the possible exposure to radon gas with the bedrock geology, subsoil geology, soil permeability and aquifer type analysed to produce the map. The map overleaf shows that part of the site falls within the highest level of 1 in 5 homes are at risk of radon exposure. Measures should be taken in the form of radon protection barriers from radon exposure in the new structures.



EPA map identifying possible Radon exposure.

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

Appendix 1
Cable Percussive Borehole Logs

Cable Percussion Borehole Log

Contract No:	Cable Percussion Borehole Log	Borehole No:
6610		BH01

Contract:	Housing Development	Easting:	731230.927	Date Started:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693157.524	Date Completed:	09/12/2025
Client:	Wicklow County Council	Elevation:	93.77	Drilled By:	B. Higgenbotham
Engineer:	SDS Design Engineers	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)	Stratum Description	Level (mOD) Depth	Samples Depth	Type	Result	Water Strike
0.10	TOPSOIL.	93.67				
1.40	MADE GROUND: brown slightly sandy gravelly silty clay.	92.37	1.00 1.00	B C	BH01 N=26 (4,4/6,5,7,8)	
2.80	Very stiff light brown slightly sandy gravelly silty CLAY with low cobble content.	90.97	2.00 2.00	B C	BH02 N=37 (5,6/8,8,10,11)	
3.10	Grey silty sandy GRAVEL with high cobble content.	90.67	3.00 3.00	B C	BH03 50 (7,11/50 for 30mm)	
3.20	Obstruction - possible boulders.	90.57	3.20	C	50 (25 for 5mm/50 for 5mm)	

End of Borehole at 3.20m

Chiselling: From:	To:	Time:	Water Strikes: Depth:	Rose (20min):	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:
3.10	3.20	02:00				09/12	3.20	Dry	0.00	1.00	Solid	0.00	1.00	Bentonite
									1.00	3.20	Slotted	1.00	3.20	Gravel

Remarks: Cable percussive borehole terminated at 3.20mbgl due to obstruction.

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

Cable Percussion Borehole Log

Contract No: 6610				Borehole No:	BH02
Contract:	Housing Development	Easting:	731217.329	Date Started:	10/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693148.363	Date Completed:	10/12/2025
Client:	Wicklow County Council	Elevation:	93.07	Drilled By:	B. Higgenbotham
Engineer:	SDS Design Engineers	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)	Stratum Description	Level (mOD) Depth	Samples Depth	Type	Result	Water Strike	Backfill
0.10	TOPSOIL.	92.97					
1.30	MADE GROUND: brown slightly sandy gravelly silty clay.	91.77	1.00 1.00	B C	BH04 N=23 (3,4/4,5,6,8)		
2.20	Very stiff light brown slightly sandy gravelly silty CLAY with low cobble content.	90.87	2.00 2.00	B C	BH05 N=42 (5,6/8,10,11,13)		
2.60	Dense grey silty sandy GRAVEL with high cobble content.	90.47					
2.80	Obstruction - possible boulders.	90.27	2.80	C	50 (25 for 5mm/50 for 5mm)		
	End of Borehole at 2.80m						

Chiselling: From:	To:	Time:	Water Strikes: Depth:	Rose (20min):	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:
2.60	2.80	02:00				10/12	2.80	Dry				0.00	2.80	Arisings

Remarks: Cable percussive borehole terminated at 2.80mbgl due to obstruction.

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

Cable Percussion Borehole Log

Contract No: 6610				Borehole No: BH03	
Contract:	Housing Development	Easting:	731208.219	Date Started:	11/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693160.179	Date Completed:	11/12/2025
Client:	Wicklow County Council	Elevation:	90.31	Drilled By:	B. Higgenbotham
Engineer:	SDS Design Engineers	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)	Stratum Description	Level (mOD)	Samples Depth	Type	Result	Water Strike	Backfill
0.10	TOPSOIL.	90.21					
1.20	MADE GROUND: brown slightly sandy gravelly silty clay.	89.11	1.00 1.00	B C	BH06 N=21 (3,4/4,5,6,6)		
1.80	Stiff light brown slightly sandy gravelly silty CLAY with low cobble content.	88.51					
2.50	Dense grey silty sandy GRAVEL with high cobble content.	87.81	2.00 2.00	B C	BH07 N=43 (6,7/9,9,12,13)		
2.60	Obstruction - possible boulders.	87.71	2.60	C	50 (25 for 5mm/50 for 5mm)		

End of Borehole at 2.60m

Chiselling:

From:	To:	Time:
2.50	2.60	02:00

Water Strikes:

Depth:	Rose (20min):	Depth Sealed

Water Details:

Date:	Hole Depth:	Water Depth:
11/12	2.60	Dry

Installation:

From:	To:	Pipe:

Backfill:

From:	To:	Type:
0.00	2.60	Arisings

Remarks: Cable percussive borehole terminated at 2.60mbgl due to obstruction.

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

Cable Percussion Borehole Log

Contract No: 6610	Cable Percussion Borehole Log				Borehole No: BH04
Contract:	Housing Development	Easting:	731190.062	Date Started:	12/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693149.328	Date Completed:	12/12/2025
Client:	Wicklow County Council	Elevation:	89.47	Drilled By:	B. Higgenbotham
Engineer:	SDS Design Engineers	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)	Stratum Description	Level (mOD) Depth	Samples Depth	Type	Result	Water Strike	Backfill
0.10	TOPSOIL.	89.37					
1.60	MADE GROUND: brown slightly sandy gravelly silty clay.	87.87	1.00 1.00	B C	BH08 N=29 (4,5/6,7,8,8)		
1.80	Stiff light brown slightly sandy gravelly silty CLAY with low cobble content.	87.67					
2.00	Dense grey silty very sandy GRAVEL with high cobble content.	87.47	2.00	B	BH09		
2.10	Obstruction - possible boulders.	87.37	2.10	C	50 (25 for 5mm/50 for 5mm)		

End of Borehole at 2.10m

Chiselling:

From:	To:	Time:
2.00	2.10	02:00

Water Strikes:

Depth:	Rose (20min):	Depth Sealed

Water Details:

Date:	Hole Depth:	Water Depth:
12/12	2.10	Dry

Installation:

From:	To:	Pipe:

Backfill:

From:	To:	Type:
0.00	2.10	Arisings

Remarks: Cable percussive borehole terminated at 2.10mbgl due to obstruction.

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

Cable Percussion Borehole Log

Contract No: 6610				Borehole No:	BH05
Contract:	Housing Development	Easting:	731186.904	Date Started:	15/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693131.897	Date Completed:	15/12/2025
Client:	Wicklow County Council	Elevation:	90.37	Drilled By:	B. Higgenbotham
Engineer:	SDS Design Engineers	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)	Stratum Description	Level (mOD) Depth	Samples Depth	Type	Result	Water Strike	Backfill
0.10	TOPSOIL.	90.27					
1.40	MADE GROUND: brown slightly sandy gravelly silty clay.	88.97	1.00 1.00	B C	BH10 N=30 (5,5/6,8,7,9)		
1.80	Dense light brown silty sandy GRAVEL with low cobble content.	88.57					
1.90	Dense grey silty sandy GRAVEL with high cobble content.	88.47					
2.10	Obstruction - possible boulders.	88.27	2.00 2.10	B C	BH11 50 (25 for 5mm/50 for 5mm)		

End of Borehole at 2.10m

Depth scale: 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5

Level scale: 90.0, 89.5, 89.0, 88.5, 88.0, 87.5, 87.0, 86.5, 86.0, 85.5

Chiselling: From:	To:	Time:	Water Strikes: Depth:	Rose (20min):	Depth Sealed	Water Details: Date:	Hole Depth:	Water Depth:	Installation: From:	To:	Pipe:	Backfill: From:	To:	Type:	Remarks:
1.90	2.10	02:00				15/12	2.10	Dry				0.00	2.10	Arisings	Cable percussive borehole terminated at 2.10mbgl due to obstruction.

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

Appendix 2

Trial Pit Logs and Photographs

Contract No: 6610	# Trial Pit Log	Trial Pit No: **TP01**

Contract:	Housing Development	Easting:	731217.399	Date:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693168.489	Excavator:	JCB 3CX
Client:	Wicklow County Council	Elevation:	90.87	Logged By:	M. Kaliski
Engineer:	SDS Design Engineers	Dimensions (LxWxD) (m):	5.30 x 0.60 x 2.70	Status:	FINAL

Level (mbgl) Depth	Stratum Description	Legend	Level (mOD) Depth	Samples / Field Tests Depth	Type	Result	Water Strike
	TOPSOIL.						
0.10	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble content and occasional plastic fragments.		90.77				
0.80	Brown silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with medium cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.		90.07	1.00	B	MK04	
1.20	Light grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.		89.67	1.50	B	MK05	
1.90	Grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.		88.97	2.50	B	MK06	▼
2.70	Pit terminated due to obstruction.		88.17				

Pit terminated at 2.70m

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possible bedrock or boulders.	Pit walls stable.	2.60 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Trial Pit Log

Contract No:	6610			Trial Pit No:	TP02
Contract:	Housing Development	Easting:	731223.392	Date:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693154.064	Excavator:	JCB 3CX
Client:	Wicklow County Council	Elevation:	93.31	Logged By:	M. Kaliski
Engineer:	SDS Design Engineers	Dimensions (LxWxD) (m):	4.80 x 0.60 x 2.80	Status:	FINAL

Level (mbgl) Depth	Stratum Description	Level (mOD) Depth	Samples / Field Tests Depth	Type	Result	Water Strike
	TOPSOIL.					
0.10	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble, low boulder content and occasional plastic and scrap metal fragments.	93.21	0.50	ES	MK01	
1.10	Light brown silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with medium cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	92.21	1.50	B	MK02	
1.90	Grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with medium cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	91.41	2.50	B	MK03	
2.80	Pit terminated due to obstruction.	90.51				

Pit terminated at 2.80m

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

Trial Pit Log

Contract No:	Trial Pit Log	Trial Pit No:
6610		**TP03**

Contract:	Housing Development	Easting:	731200.198	Date:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693140.293	Excavator:	JCB 3CX
Client:	Wicklow County Council	Elevation:	91.64	Logged By:	M. Kaliski
Engineer:	SDS Design Engineers	Dimensions (LxWxD) (m):	4.60 x 0.60 x 1.70	Status:	FINAL

Level (mbgl) Depth	Stratum Description	Level (mOD) Depth	Samples / Field Tests Depth	Type	Result	Water Strike
	TOPSOIL.					
0.10	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble content and occasional rag fragments.	91.54	0.50	ES	MK14	
0.80	Brown silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with medium cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	90.84				
1.10	Grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	90.54	1.50	B	MK15	
1.70	Pit terminated due to obstruction.	89.94				

Pit terminated at 1.70m

Scale (mbgl): 0.5, 1.0, 1.5, 2.0, 2.5

Scale (mOD): 91.5, 91.0, 90.5, 90.0, 89.5, 89.0

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

Trial Pit Log

Contract No:	6610			Trial Pit No:	TP04
Contract:	Housing Development	Easting:	731179.039	Date:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693139.046	Excavator:	JCB 3CX
Client:	Wicklow County Council	Elevation:	89.28	Logged By:	M. Kaliski
Engineer:	SDS Design Engineers	Dimensions (LxWxD) (m):	4.90 x 0.60 x 2.90	Status:	FINAL

Level (mbgl) Depth	Stratum Description	Level (mOD) Depth	Samples Depth	Type	Result	Water Strike
	TOPSOIL.					
0.20	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble content and occasional plastic and rag fragments.	89.08	1.00	B	MK10	
1.30	MADE GROUND: grey brown silty sandy gravel with medium cobble content and occasional timber fragments.	87.98	2.00	B	MK11	▼ (1.40)
2.10	Brown silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	87.18	2.50	B	MK12	
2.60	Grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	86.68	2.80	B	MK13	
2.90	Pit terminated due to obstruction.	86.38				

Pit terminated at 2.90m

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

Trial Pit Log

Contract No:	Trial Pit No:
6610	TP05

Contract:	Housing Development	Easting:	731167.630	Date:	09/12/2025
Location:	Ballyguile Road, Wicklow, Co. Wicklow	Northing:	693126.608	Excavator:	JCB 3CX
Client:	Wicklow County Council	Elevation:	89.18	Logged By:	M. Kaliski
Engineer:	SDS Design Engineers	Dimensions (LxWxD) (m):	4.30 x 0.60 x 2.50	Status:	FINAL

Level (mbgl) Depth	Stratum Description	Level (mOD) Depth	Samples / Field Tests Depth	Type	Result	Water Strike
	TOPSOIL.					
0.20	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble content and occasional plastic and scrap metal fragments.	88.98	0.50	ES	MK07	
1.00	MADE GROUND: grey brown sandy gravelly silty clay with medium cobble content.	88.18	1.20	B	MK08	
1.60	Light brown silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	87.58				
1.80	Grey silty sandy fine to coarse, angular and tabular GRAVEL of schist and shale with high cobble content. Sand is fine to coarse. Cobbles are angular and tabular of schist and shale.	87.38	2.00	B	MK09	
2.50	Pit terminated due to obstruction.	86.68				

Pit terminated at 2.50m

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

TP01 Sidewall

TP01 Spoil

TP02 Sidewall

TP02 Spoil

TP03 Sidewall

TP03 Spoil

TP04 Sidewall

TP04 Spoil

TP05 Sidewall

TP05 Spoil

Appendix 3

Soakaway Test Results and Photographs

SOAKAWAY TEST

Project Reference:	6610
Contract name:	Housing Development
Location:	Ballyguile Road, Wicklow, Co. Wicklow
Test No:	SA01
Date:	09/12/2025

Ground Conditions

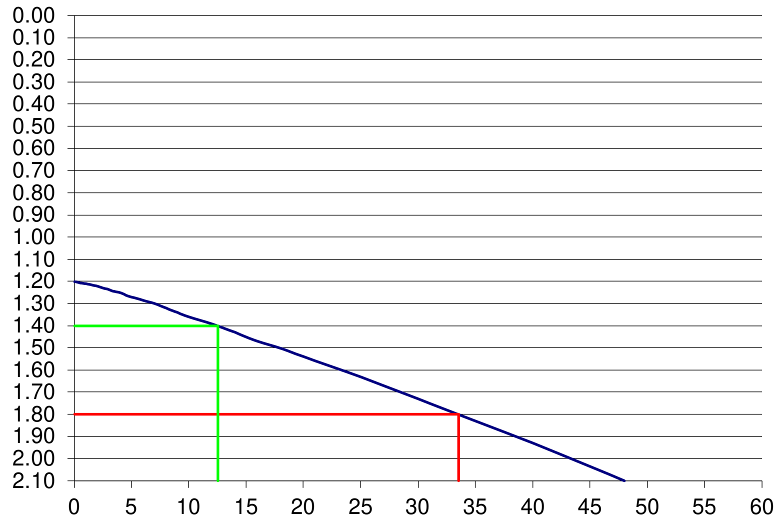
From	**To**	
0.00	0.20	TOPSOIL.
0.20	0.70	MADE GROUND: grey brown silty sandy gravel with occasional plastic and scrap metal fragments.
0.70	1.00	Light brown silty sandy GRAVEL with medium cobble content.
1.00	2.00	Grey silty sandy GRAVEL with high cobble content.

Remarks:

Obstruction at 2.00mbgl - pit terminated and test completed.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.21
1	1.21
1.5	1.22
2	1.22
2.5	1.23
3	1.24
3.5	1.25
4	1.25
4.5	1.26
5	1.27
6	1.29
7	1.30
8	1.32
9	1.34
10	1.36
12	1.39
14	1.43
16	1.47
18	1.50
20	1.54
25	1.63
30	1.73
40	1.93
48	2.10

Pit Dimensions (m)		
Length (m)	3.60	m
Width (m)	0.50	m
Depth	2.00	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.80	m
75% Full	1.40	m
25% Full	1.80	m
75%-25%	0.40	m
Volume of water (75%-25%)	**0.72**	m3
Area of Drainage	**16.4**	m2
Area of Drainage (75%-25%)	**5.08**	m2
Time		
75% Full	12.5	min
25% Full	33.5	min
Time 75% to 25%	**21**	min
Time 75% to 25% (sec)	**1260**	sec



f = 0.00675 or **1.12E-04**

m/min **m/s**

SOAKAWAY TEST

Project Reference:	6610
Contract name:	Housing Development
Location:	Ballyguile Road, Wicklow, Co. Wicklow
Test No:	SA02
Date:	09/12/2025

Ground Conditions

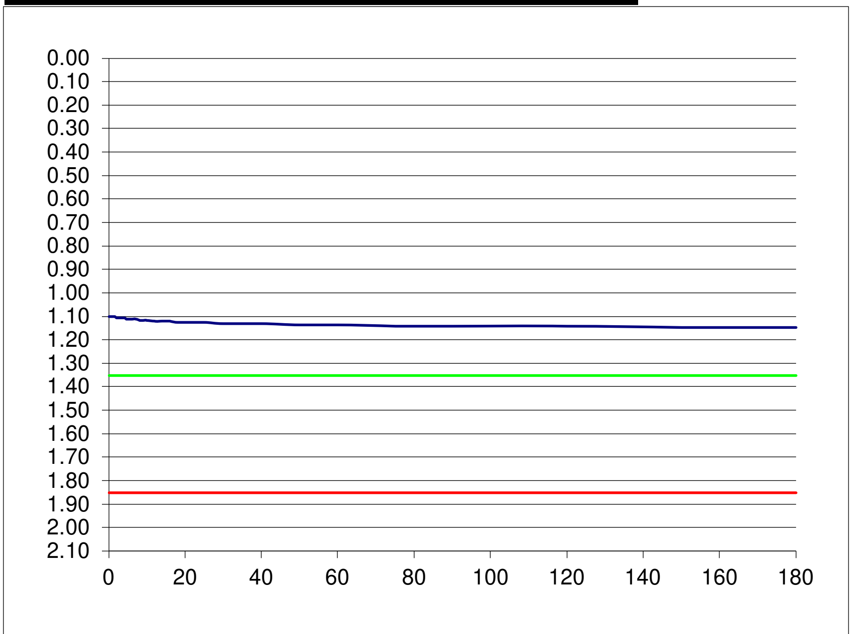
From	To	
0.00	0.20	TOPSOIL.
0.20	1.70	MADE GROUND: grey brown very silty sandy gravel with medium cobble content and occasional plastic and rag fragments.
1.70	2.10	Light brown silty sandy GRAVEL with medium cobble content.

Remarks:

-

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.11
2.5	1.11
3	1.11
3.5	1.11
4	1.11
4.5	1.11
5	1.11
6	1.11
7	1.11
8	1.12
9	1.12
10	1.12
12	1.12
14	1.12
16	1.12
18	1.13
20	1.13
25	1.13
30	1.13
40	1.13
50	1.14
60	1.14
75	1.14
90	1.14
120	1.14
150	1.15
180	1.15

Pit Dimensions (m)		
Length (m)	3.20	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**0.80**	m3
Area of Drainage	**15.54**	m2
Area of Drainage (75%-25%)	**5.30**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** m/min or **Fail** m/s

SOAKAWAY TEST

Project Reference:	6610
Contract name:	Housing Development
Location:	Ballyguile Road, Wicklow, Co. Wicklow
Test No:	SA03
Date:	09/12/2025

Ground Conditions

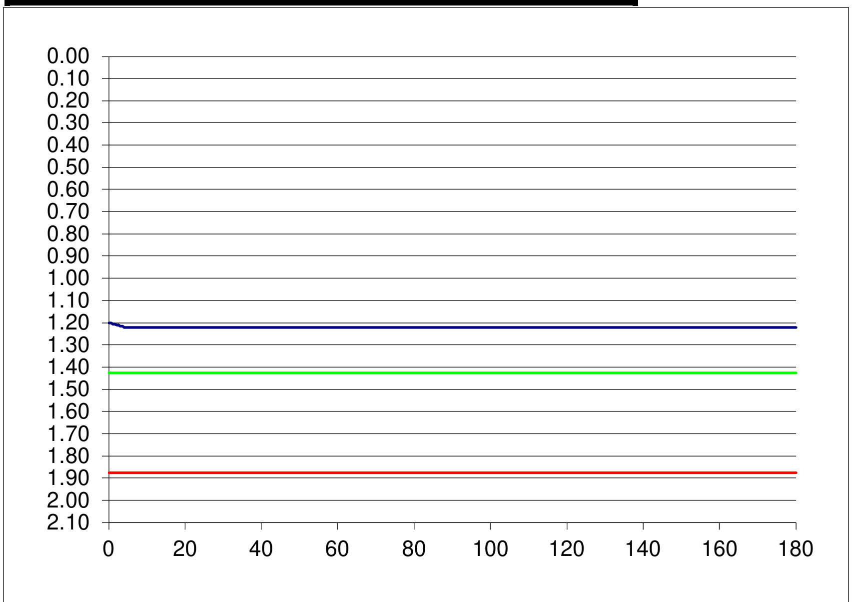
From	To	
0.00	0.10	TOPSOIL.
0.10	0.80	MADE GROUND: grey brown silty sandy gravel with medium cobble content and occasional concrete block, plastic and rag fragments.
0.80	2.10	MADE GROUND: grey brown slightly sandy gravelly silty clay with medium cobble content and occasional tarmacadam, timber and metal fragments.

Remarks:

-

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.21
1.5	1.21
2	1.21
2.5	1.21
3	1.22
3.5	1.22
4	1.22
4.5	1.22
5	1.22
6	1.22
7	1.22
8	1.22
9	1.22
10	1.22
12	1.22
14	1.22
16	1.22
18	1.22
20	1.22
25	1.22
30	1.22
40	1.22
50	1.22
60	1.22
75	1.22
90	1.22
120	1.22
150	1.22
180	1.22

Pit Dimensions (m)		
Length (m)	3.60	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**0.81**	m3
Area of Drainage	**17.22**	m2
Area of Drainage (75%-25%)	**5.49**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** or **Fail**

m/min **m/s**

SA01 Sidewall

SA01 Spoil

SA02 Sidewall

SA02 Spoil

SA03 Sidewall

SA03 Spoil

Appendix 4
Plate Test Results

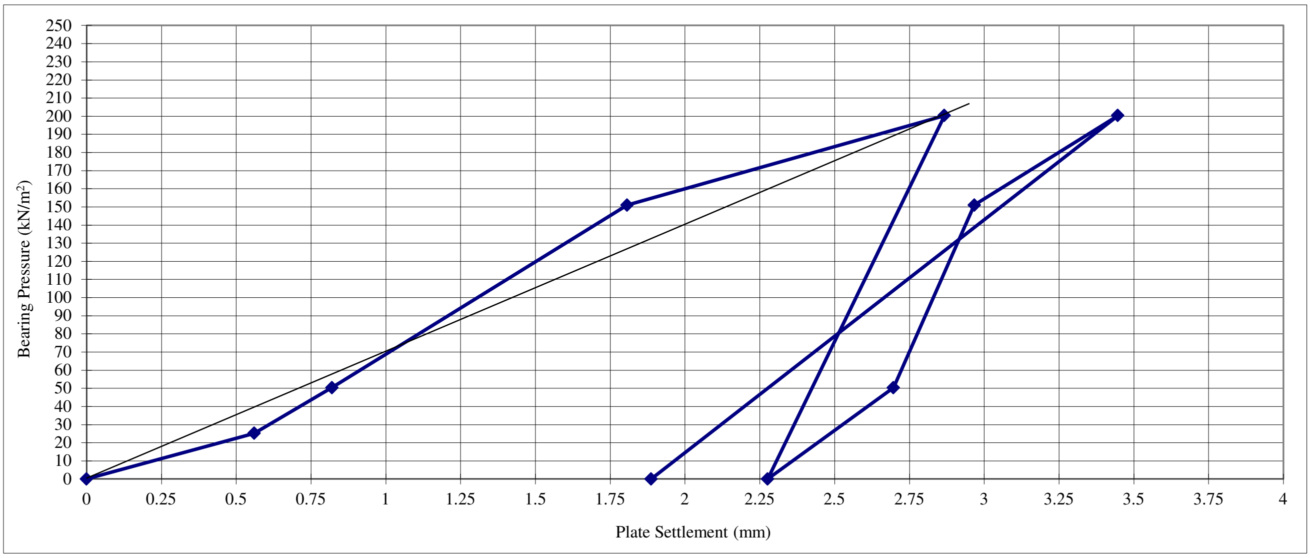
Plate Bearing Test in accordance with BS 1377: Part 9 and Part 2 HD 25/94

Site Investigations Ltd., Carhugar The Grange, 12th Lock Road, Lucan, Co. Dublin Tel: 01 6108768 Email:info@siteinvestigations.ie

Client	Wicklow County Council
Site	Ballyguile road, Wicklow
Report Date	27-Jan-26
Location:	PT01
Plate Diameter:	*600mm*
Type of reaction Load	*JCB 3CX*
Material Type:	*slightly sandy gravelly silty CLAY*
Depth test carried out:	*0.50m BGL*
CBR value is as per specification for 762mm Plate	

1.25mm settlement (graph) for 762mm Plate (kPa)	**88**
Equivalent CBR for 762mm Plate -Initial loading (%)	**22.6**
Mod. of subgrade Reaction k for 600mm Plate(kPa)	**75**
Correction factor for 600mm Plate	**0.85**

Pressure Stages	Bearing Pressure (kN/m^2)	Plate Settlement (mm)
Initial	0.0	0.00
	25	0.56
	50	0.82
	151	1.81
	200	2.87
	0.0	2.28
Reload	50	2.70
	151	2.97
	200	3.45
Final Condition	0.0	1.89



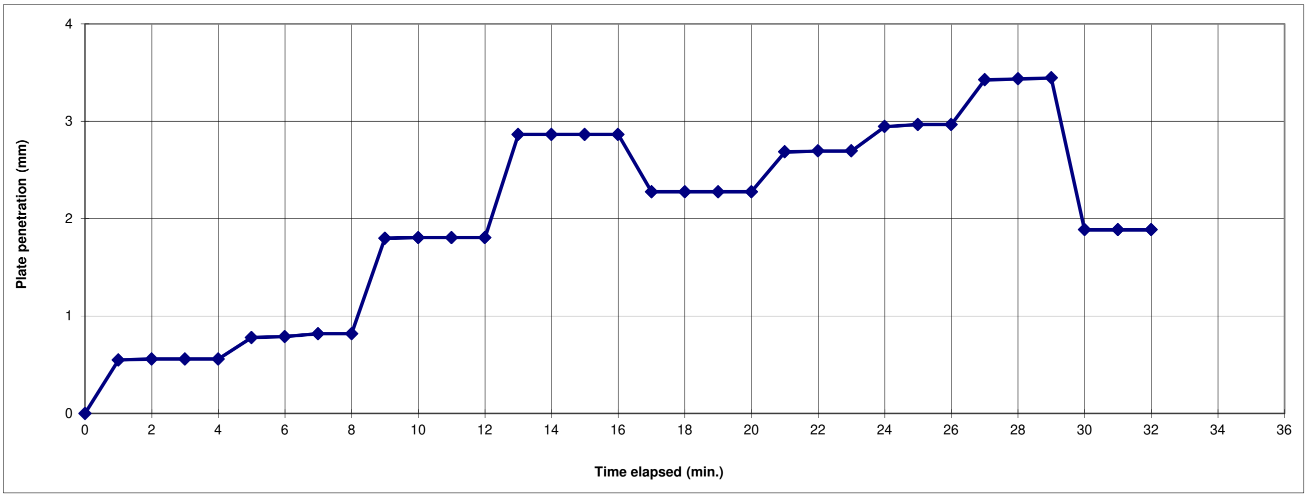


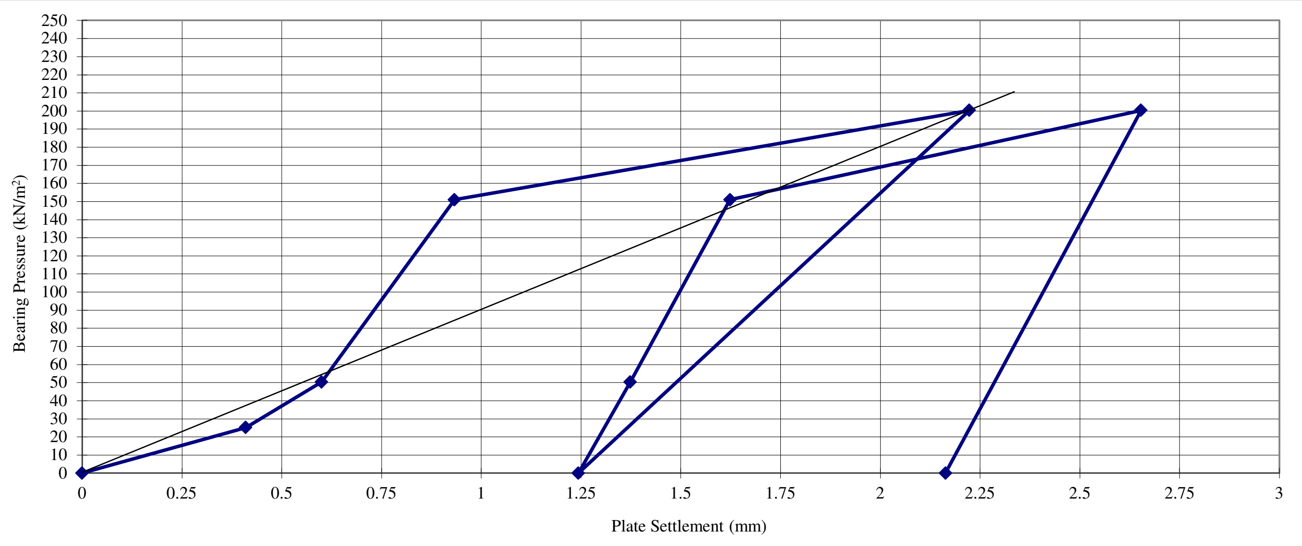
Plate Bearing Test in accordance with BS 1377: Part 9 and Part 2 HD 25/94

Site Investigations Ltd., Carhugar The Grange, 12th Lock Road, Lucan, Co. Dublin Tel: 01 6108768 Email:info@siteinvestigations.ie

Client	Wicklow County Council
Site	Ballyguile road, Wicklow
Report Date	27-Jan-26
Location:	PT02
Plate Diameter:	*600mm*
Type of reaction Load	*JCB 3CX*
Material Type:	*slightly sandy gravelly silty CLAY*
Depth test carried out:	*0.50m BGL*
CBR value is as per specification for 762mm Plate	

1.25mm settlement (graph) for 762mm Plate (kPa)	**112**
Equivalent CBR for 762mm Plate -Initial loading (%)	**34.3**
Mod. of subgrade Reaction k for 600mm Plate(kPa)	**95**
Correction factor for 600mm Plate	**0.85**

Pressure Stages	Bearing Pressure (kN/m^2)	Plate Settlement (mm)
Initial	0.0	0.00
	25	0.41
	50	0.60
	151	0.93
	200	2.22
	0.0	1.24
Reload	50	1.37
	151	1.62
	200	2.65
Final Condition	0.0	2.16



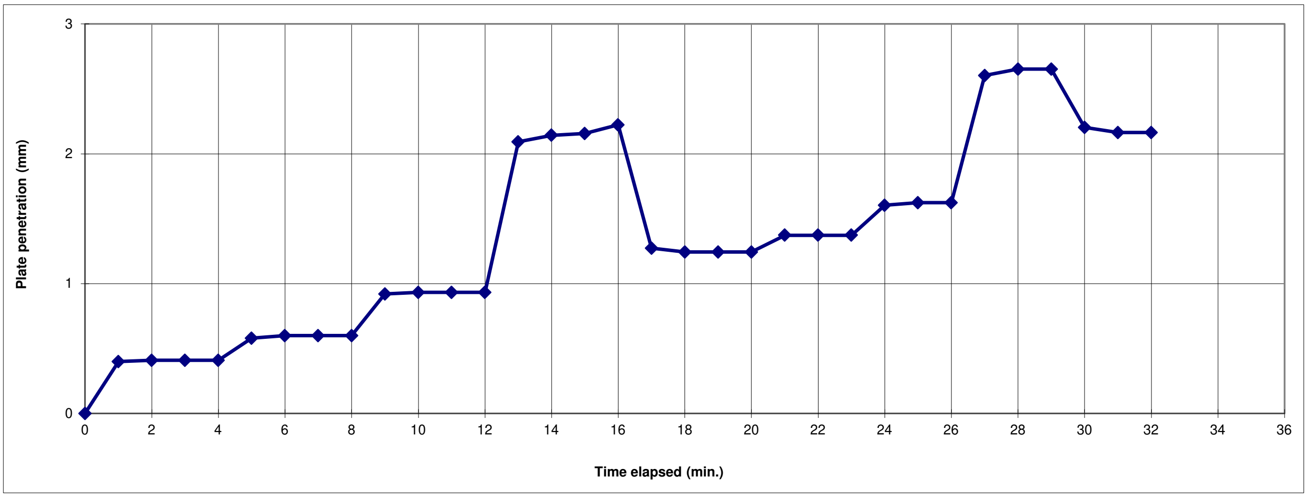


Plate Bearing Test in accordance with BS 1377: Part 9 and Part 2 HD 25/94

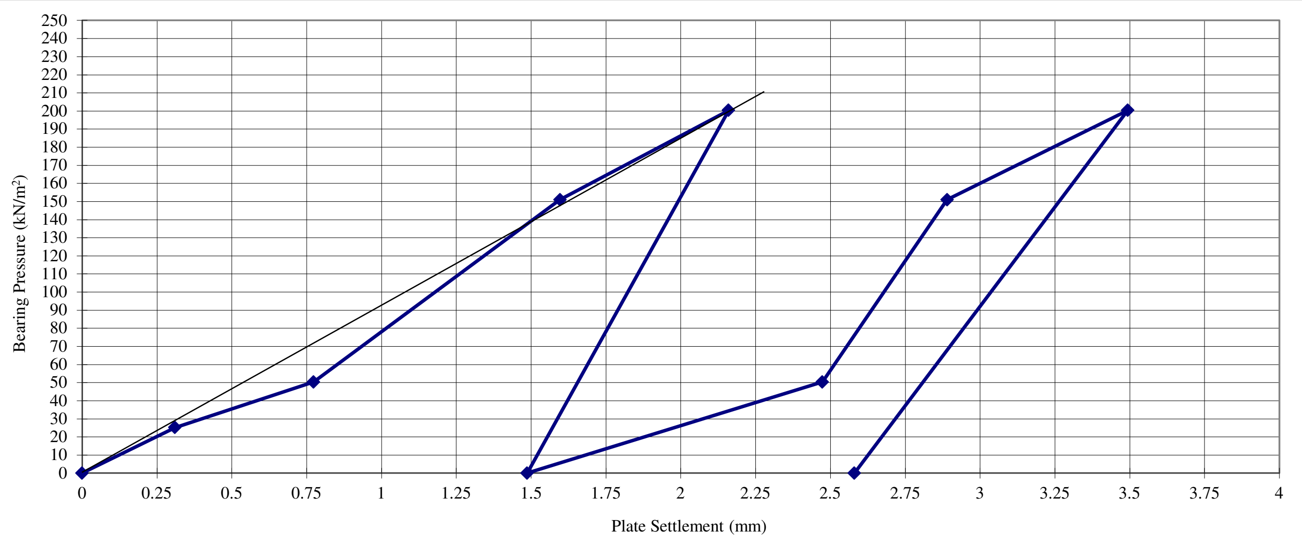
Site Investigations Ltd., Carhugar The Grange, 12th Lock Road, Lucan, Co. Dublin Tel: 01 6108768 Email:info@siteinvestigations.ie

Client	Wicklow County Council
Site	Ballyguile road, Wicklow
Report Date	27-Jan-26
Location:	PT03
Plate Diameter:	*600mm*
Type of reaction Load	*JCB 3CX*
Material Type:	*slightly sandy gravelly silty CLAY*
Depth test carried out:	*0.50m BGL*

CBR value is as per specification for 762mm Plate

1.25mm settlement (graph) for 762mm Plate (kPa)	**115**
Equivalent CBR for 762mm Plate -Initial loading (%)	**35.9**
Mod. of subgrade Reaction k for 600mm Plate(kPa)	**98**
Correction factor for 600mm Plate	**0.85**

Pressure Stages	**Bearing Pressure (kN/m^2)**	**Plate Settlement (mm)**
Initial	0.0	0.00
	25	0.31
	50	0.77
	151	1.60
	200	2.16
	0.0	1.49
Reload	50	2.47
	151	2.89
	200	3.49
Final Condition	0.0	2.58



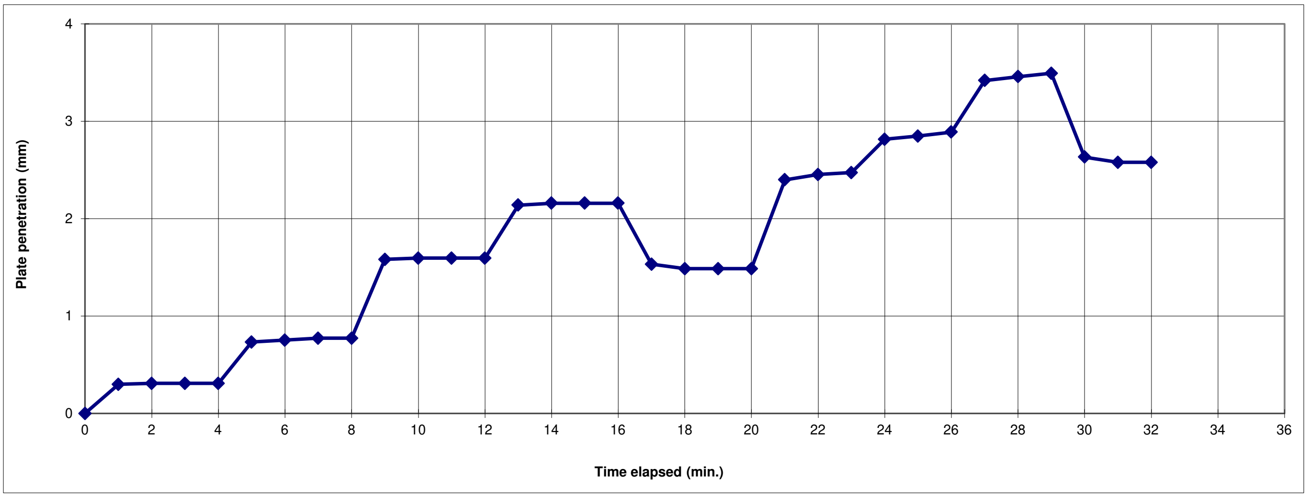


Plate Bearing Test in accordance with BS 1377: Part 9 and Part 2 HD 25/94

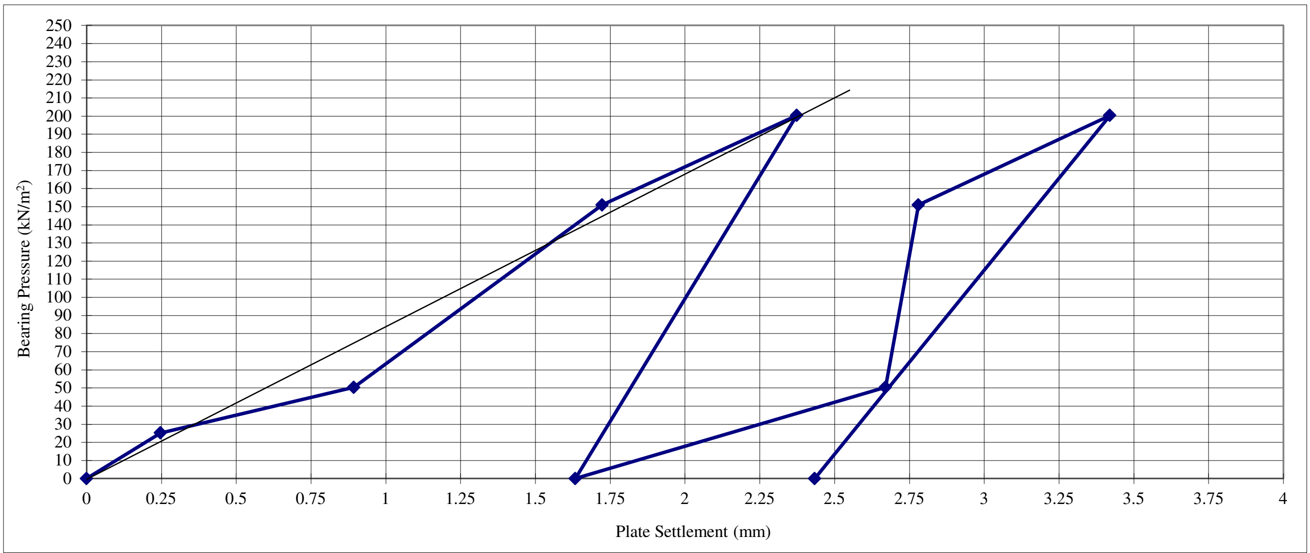
Site Investigations Ltd., Carhugar The Grange, 12th Lock Road, Lucan, Co. Dublin Tel: 01 6108768 Email:info@siteinvestigations.ie

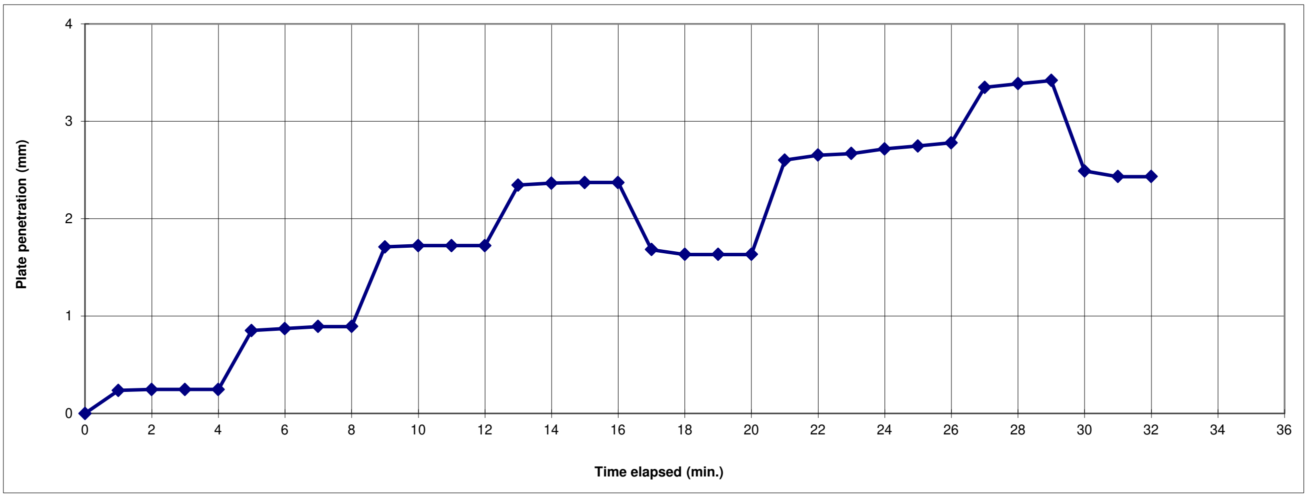
Client	Wicklow County Council
Site	Ballyguile road, Wicklow
Report Date	27-Jan-26
Location:	PT04
Plate Diameter:	*600mm*
Type of reaction Load	*JCB 3CX*
Material Type:	*slightly sandy gravelly silty CLAY*
Depth test carried out:	*0.50m BGL*

CBR value is as per specification for 762mm Plate

1.25mm settlement (graph) for 762mm Plate (kPa)	**104**
Equivalent CBR for 762mm Plate -Initial loading (%)	**30.2**
Mod. of subgrade Reaction k for 600mm Plate(kPa)	**88**
Correction factor for 600mm Plate	**0.85**

Pressure Stages	Bearing Pressure (kN/m^2)	Plate Settlement (mm)
Initial	0.0	0.00
	25	0.25
	50	0.89
	151	1.72
	200	2.37
	0.0	1.63
Reload	50	2.67
	151	2.78
	200	3.42
Final Condition	0.0	2.43





Appendix 5
Geotechnical Laboratory Test Results

Classification Tests
In accordance with BS 1377: Part 2

Client	Wicklow County Council
Site	Ballyguile road, Wicklow
S.I. File No	6610 / 25
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	27th January 2026

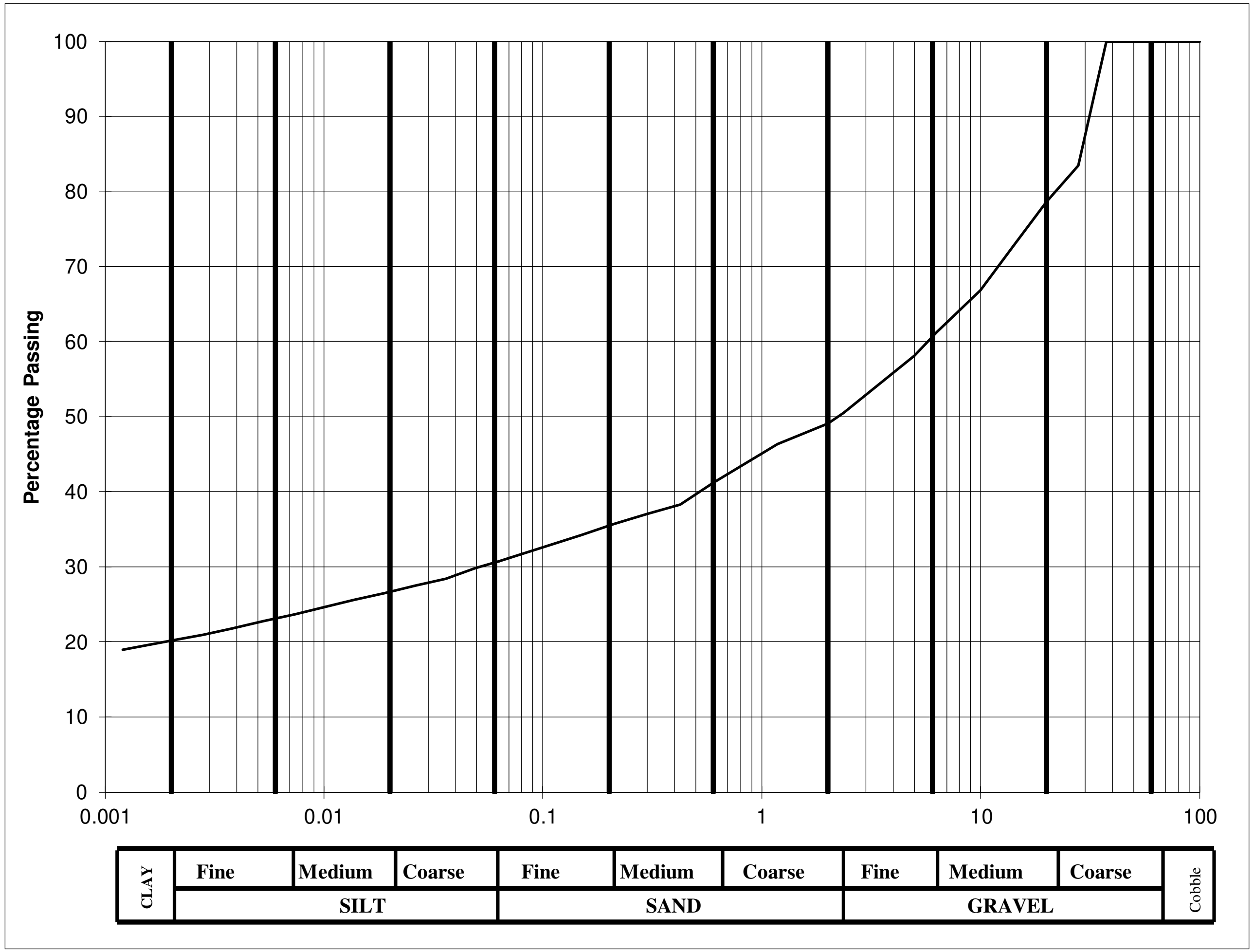
Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Max. Density Mg/m^2	Bulk Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
BH01	1.00	BH01	26/084	B	15.1	30	19	11			38.3		CL
BH02	1.00	BH04	26/086	B	19.5	31	19	12			41.0		CL
BH03	1.00	BH06	26/088	B	13.3	28	20	8			29.8		CL
BH04	1.00	BH08	26/090	B	14.9	27	18	9			39.0		CL
BH05	1.00	BH10	26/092	B	16.9	27	18	9			35.6		CL

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	31
90	100	**0.0200**	27
75	100	**0.0060**	23
63	100	**0.0020**	20
50	100		
37.5	100		
28	83.4		
20	78.6		
14	72.6		
10	66.8		
6.3	61.3		
5.0	58.1		
2.36	50.5		
2.00	49.1		
1.18	46.3		
0.600	41.2		
0.425	38.3		
0.300	37		
0.212	35.7		
0.150	34.2		
0.063	31		

Cobbles, %	0
Gravel, %	51
Sand, %	18
Silt, %	11
Clay, %	20



Client :	Wicklow County Council	Lab. No :	26/084	Hole ID :	BH 01
Project :	Ballyguile road, Wicklow	Sample No :	BH01	Depth, m :	1.00

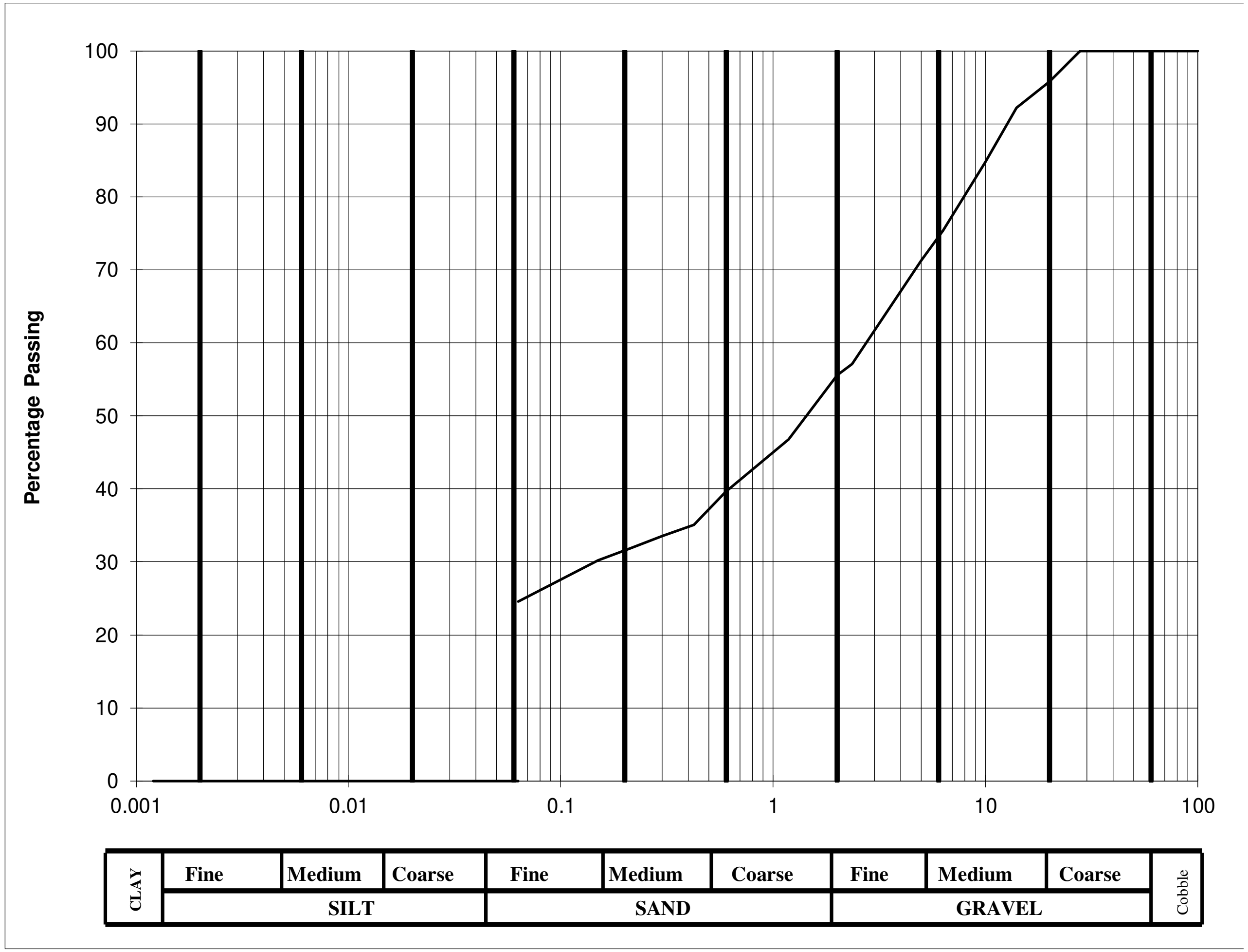
Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	95.8		
14	92.2		
10	84.8		
6.3	75.4		
5.0	71.3		
2.36	57.1		
2.00	55.6		
1.18	46.8		
0.600	39.6		
0.425	35.1		
0.300	33.5		
0.212	31.8		
0.150	30.2		
0.063	25		

Cobbles, %	0
Gravel, %	44
Sand, %	31
Clay / Silt, %	25



Client :	Wicklow County Council	Lab. No :	26/085	Hole ID :	BH 01
Project :	Ballyguile road, Wicklow	Sample No :	BH02	Depth, m :	2.00

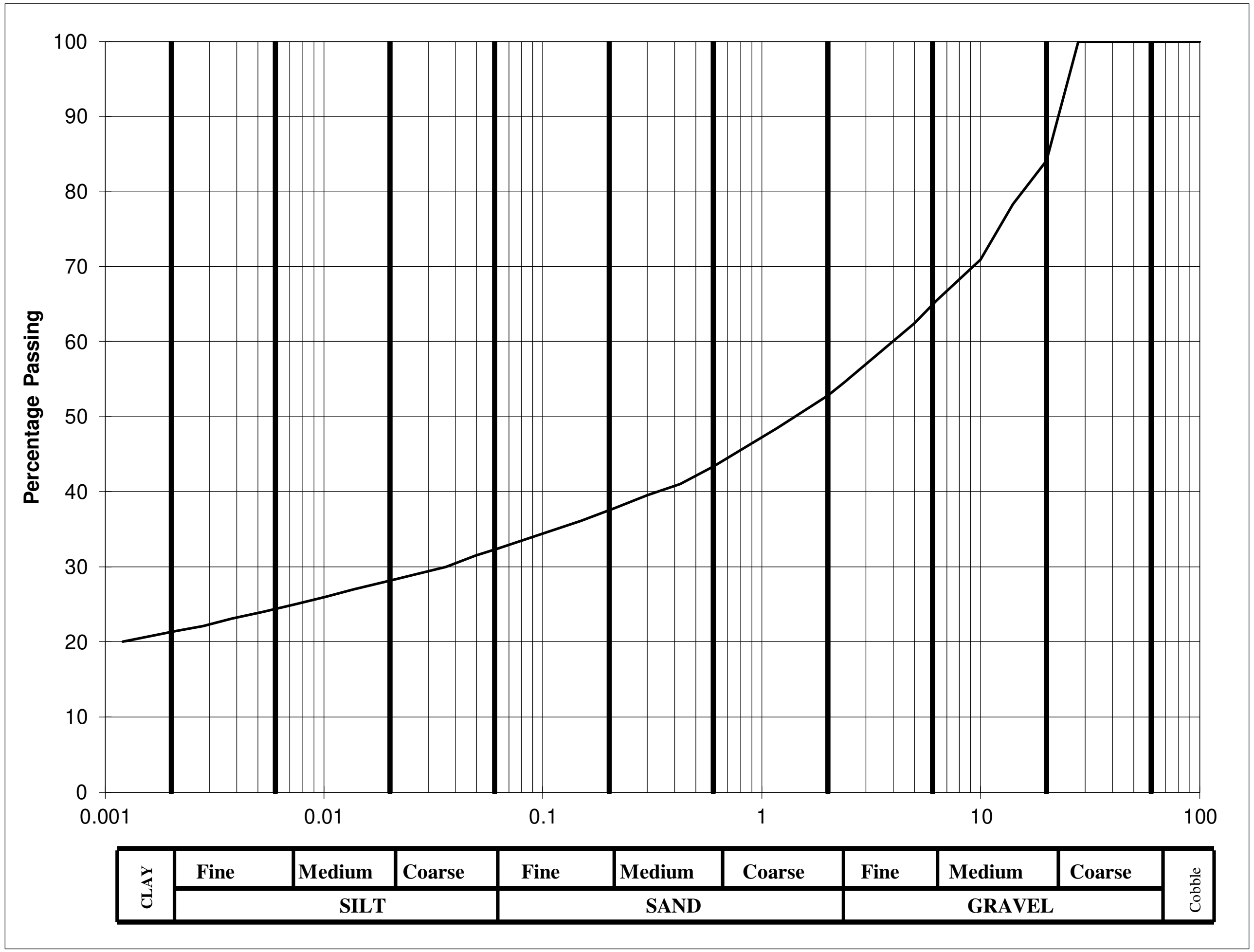
Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	33
90	100	**0.0200**	28
75	100	**0.0060**	25
63	100	**0.0020**	22
50	100		
37.5	100		
28	100		
20	84.1		
14	78.3		
10	70.9		
6.3	65.5		
5.0	62.4		
2.36	54.5		
2.00	52.8		
1.18	48.5		
0.600	43.3		
0.425	41		
0.300	39.5		
0.212	37.8		
0.150	36.1		
0.063	33		

Cobbles, %	0
Gravel, %	47
Sand, %	20
Silt, %	11
Clay, %	22



Client :	Wicklow County Council	Lab. No :	26/086	Hole ID :	BH 02
Project :	Ballyguile road, Wicklow	Sample No :	BH04	Depth, m :	1.00

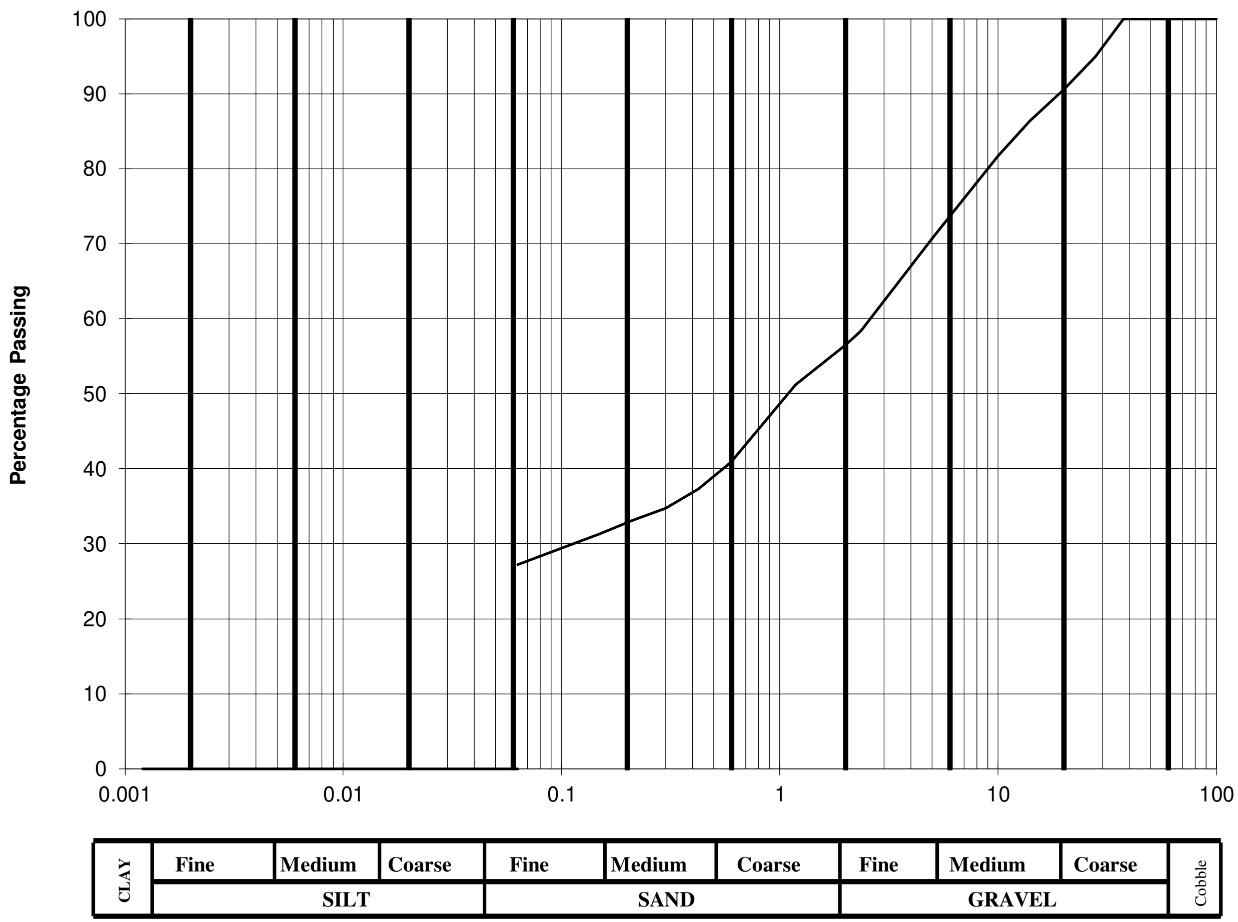
Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	94.9		
20	90.6		
14	86.4		
10	81.7		
6.3	74.4		
5.0	70.7		
2.36	58.4		
2.00	56.5		
1.18	51.2		
0.600	40.9		
0.425	37.3		
0.300	34.7		
0.212	33.1		
0.150	31.3		
0.063	27		

Cobbles, %	0
Gravel, %	44
Sand, %	30
Clay / Silt, %	27



Client :	Wicklow County Council	Lab. No :	26/087	Hole ID :	BH 02
Project :	Ballyguile road, Wicklow	Sample No :	BH05	Depth, m :	2.00

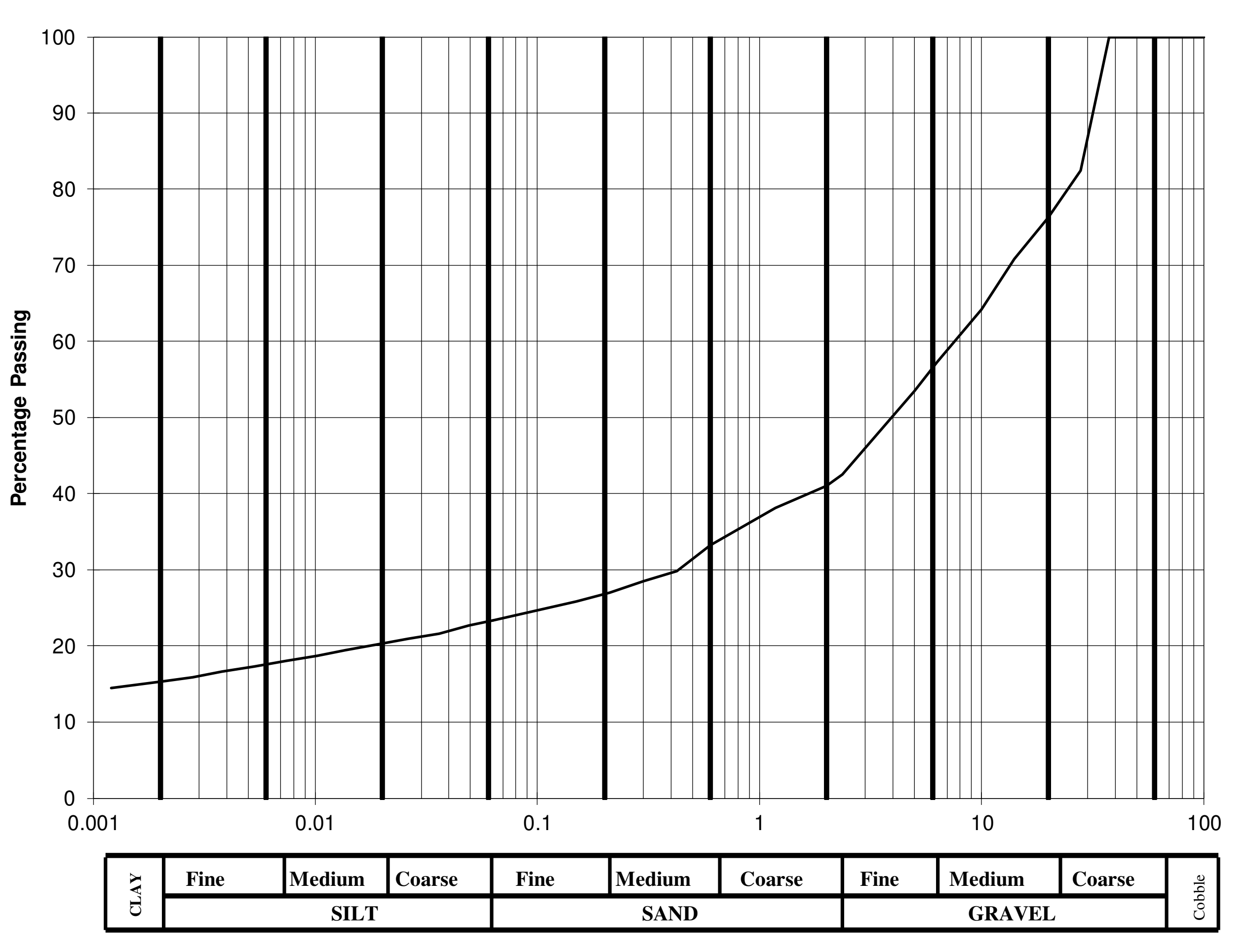
Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	23
90	100	**0.0200**	20
75	100	**0.0060**	17
63	100	**0.0020**	16
50	100		
37.5	100		
28	82.4		
20	76.3		
14	70.8		
10	64.2		
6.3	57.3		
5.0	53.5		
2.36	42.5		
2.00	41		
1.18	38.1		
0.600	33.2		
0.425	29.8		
0.300	28.5		
0.212	27		
0.150	25.8		
0.063	23		

Cobbles, %	0
Gravel, %	59
Sand, %	18
Silt, %	7
Clay, %	16

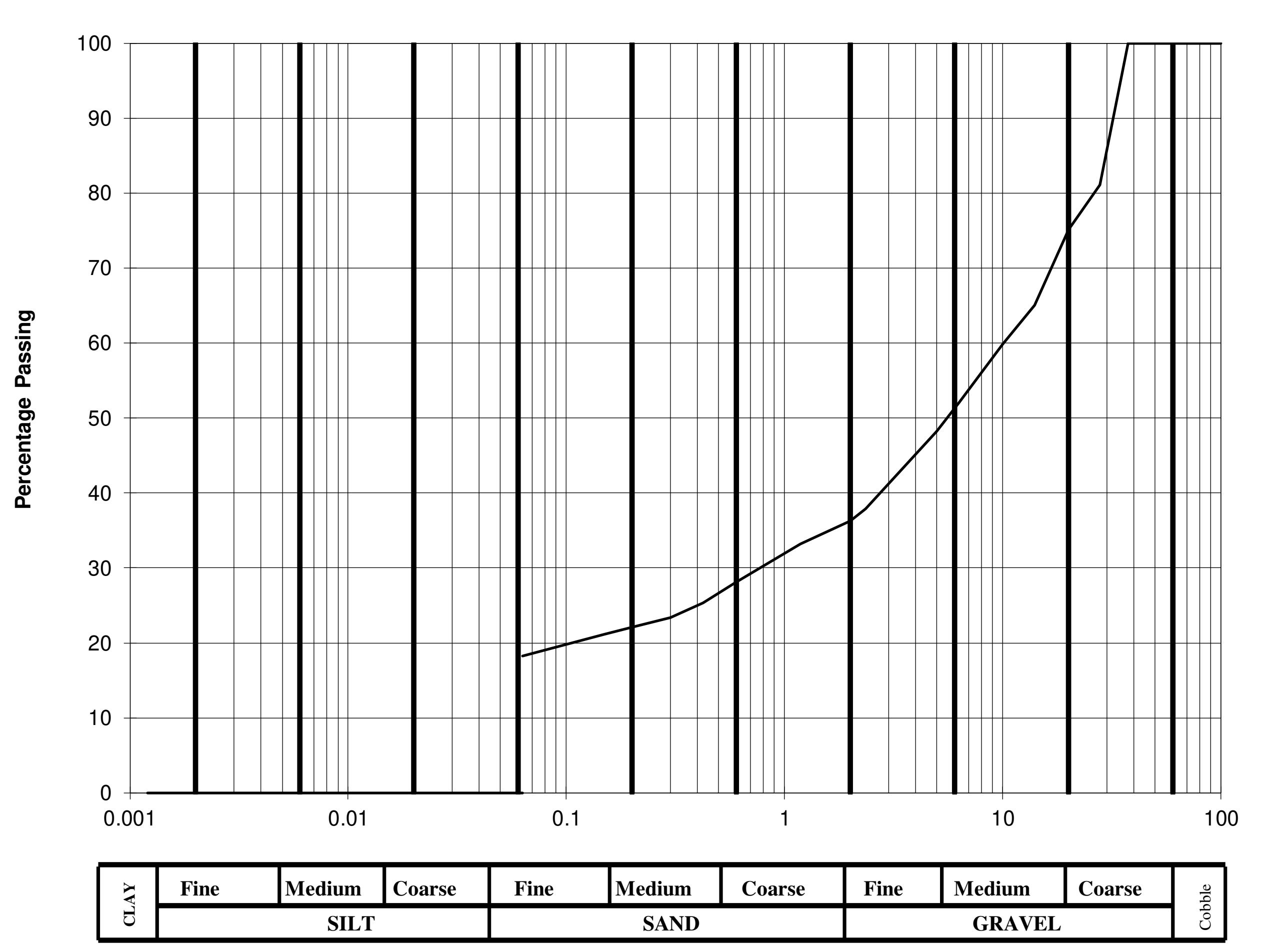


Client :	Wicklow County Council	Lab. No :	26/088	Hole ID :	BH 03
Project :	Ballyguile road, Wicklow	Sample No :	BH06	Depth, m :	1.00

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	81.1		
20	75.1		
14	65		
10	59.8		
6.3	52.1		
5.0	48.2		
2.36	37.9		
2.00	36.3		
1.18	33.2		
0.600	28.1		
0.425	25.3		
0.300	23.4		
0.212	22.3		
0.150	21.2		
0.063	18		

Cobbles, %	0
Gravel, %	64
Sand, %	18
Clay / Silt, %	18



Client :	Wicklow County Council	Lab. No :	26/089	Hole ID :	BH 03
Project :	Ballyguile road, Wicklow	Sample No :	BH07	Depth, m :	2.00

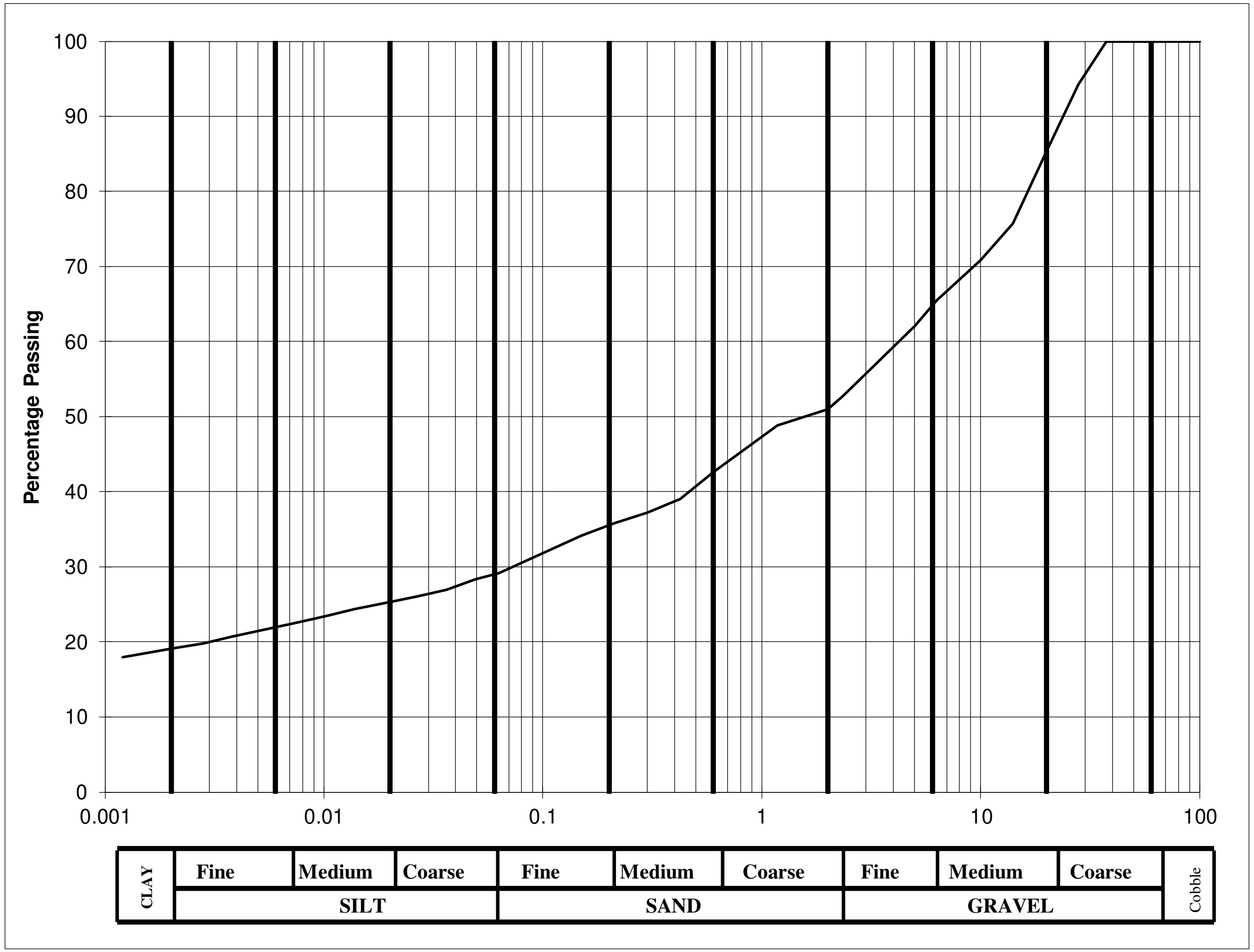
Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	29
90	100	**0.0200**	26
75	100	**0.0060**	22
63	100	**0.0020**	19
50	100		
37.5	100		
28	94.2		
20	85.3		
14	75.7		
10	70.8		
6.3	65.5		
5.0	62		
2.36	52.8		
2.00	51		
1.18	48.8		
0.600	42.6		
0.425	39		
0.300	37.2		
0.212	35.8		
0.150	34.1		
0.063	29		

Cobbles, %	0
Gravel, %	49
Sand, %	22
Silt, %	10
Clay, %	19

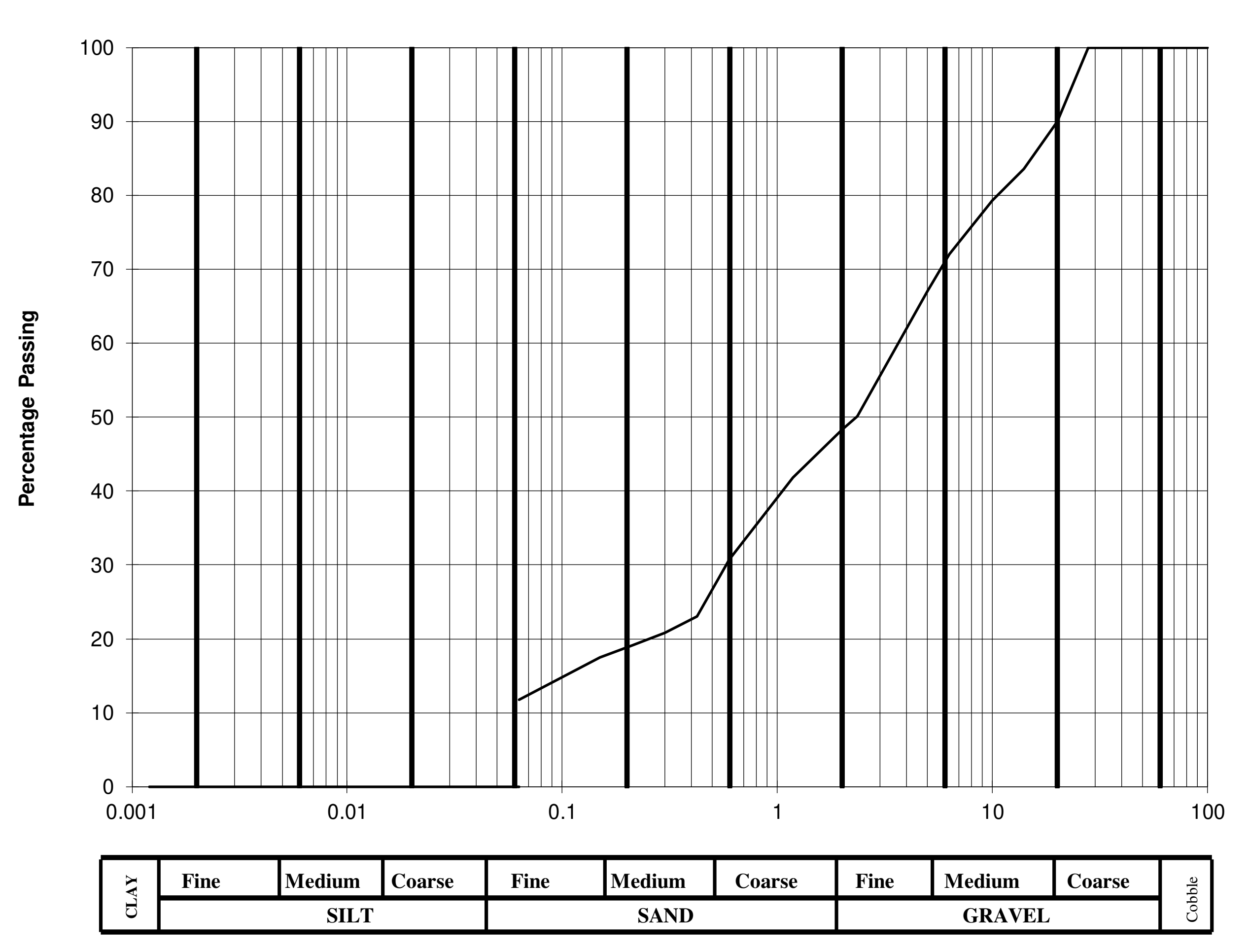


Client :	Wicklow County Council	Lab. No :	26/090	Hole ID :	BH 04
Project :	Ballyguile road, Wicklow	Sample No :	BH08	Depth, m :	1.00

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	90.0		
14	83.6		
10	79.3		
6.3	72.0		
5.0	67.0		
2.36	50.1		
2.00	48.3		
1.18	41.8		
0.600	30.7		
0.425	23.0		
0.300	20.8		
0.212	19.1		
0.150	17.5		
0.063	12		

Cobbles, %	0
Gravel, %	52
Sand, %	36
Clay / Silt, %	12



Client :	Wicklow County Council	Lab. No :	26/091	Hole ID :	BH 04
Project :	Ballyguile road, Wicklow	Sample No :	BH09	Depth, m :	2.00

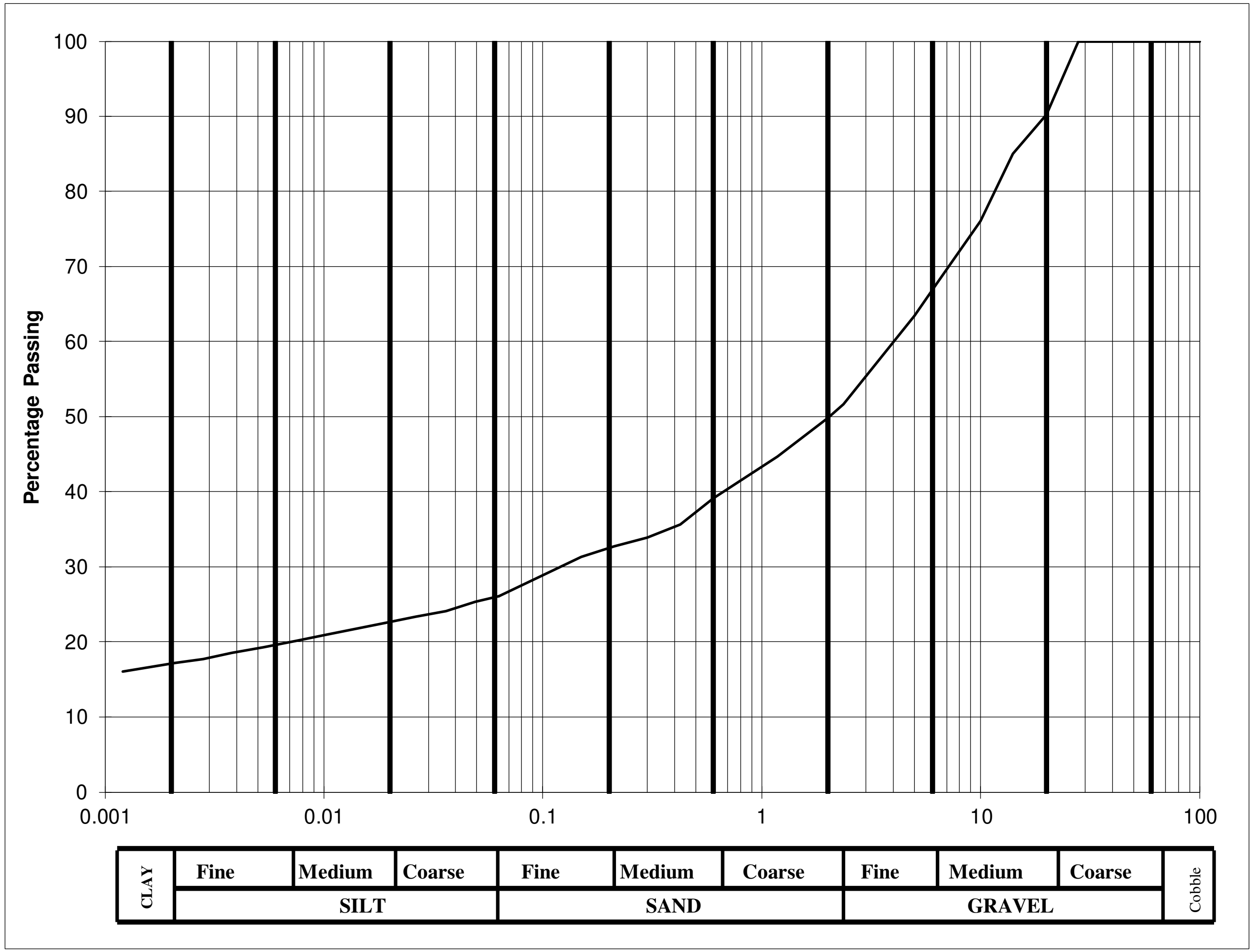
Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	26
90	100	**0.0200**	23
75	100	**0.0060**	19
63	100	**0.0020**	17
50	100		
37.5	100		
28	100		
20	90.2		
14	85		
10	76		
6.3	67.7		
5.0	63.4		
2.36	51.6		
2.00	49.8		
1.18	44.7		
0.600	39.1		
0.425	35.6		
0.300	33.9		
0.212	32.7		
0.150	31.3		
0.063	26		

Cobbles, %	0
Gravel, %	50
Sand, %	24
Silt, %	9
Clay, %	17



Client :	Wicklow County Council	Lab. No :	26/092	Hole ID :	BH 05
Project :	Ballyguile road, Wicklow	Sample No :	BH10	Depth, m :	1.00

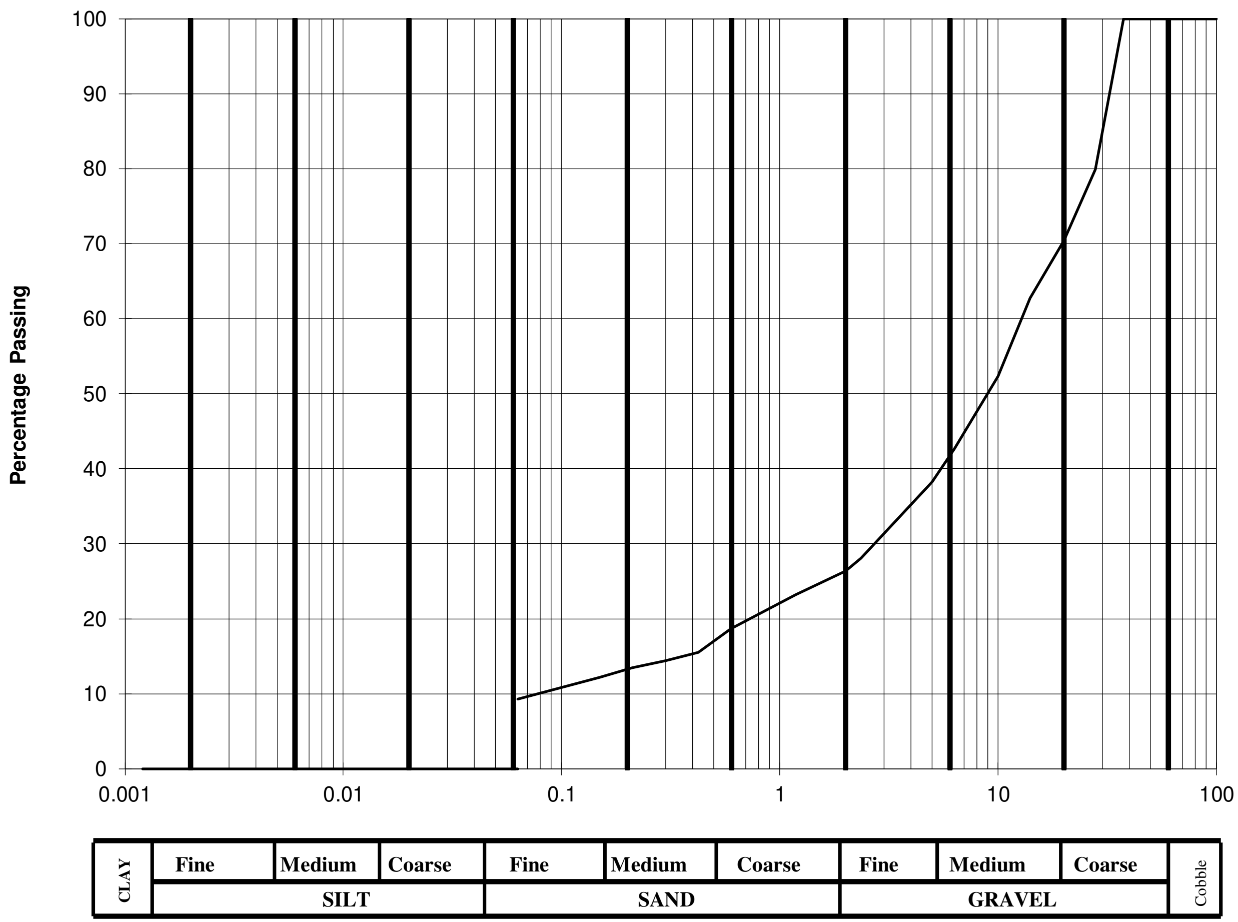
Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	79.9		
20	70.4		
14	62.7		
10	52.3		
6.3	42.7		
5.0	38.2		
2.36	28.1		
2.00	26.4		
1.18	23.2		
0.600	18.7		
0.425	15.5		
0.300	14.4		
0.212	13.5		
0.150	12.2		
0.063	9		

Cobbles, %	0
Gravel, %	74
Sand, %	17
Clay / Silt, %	9

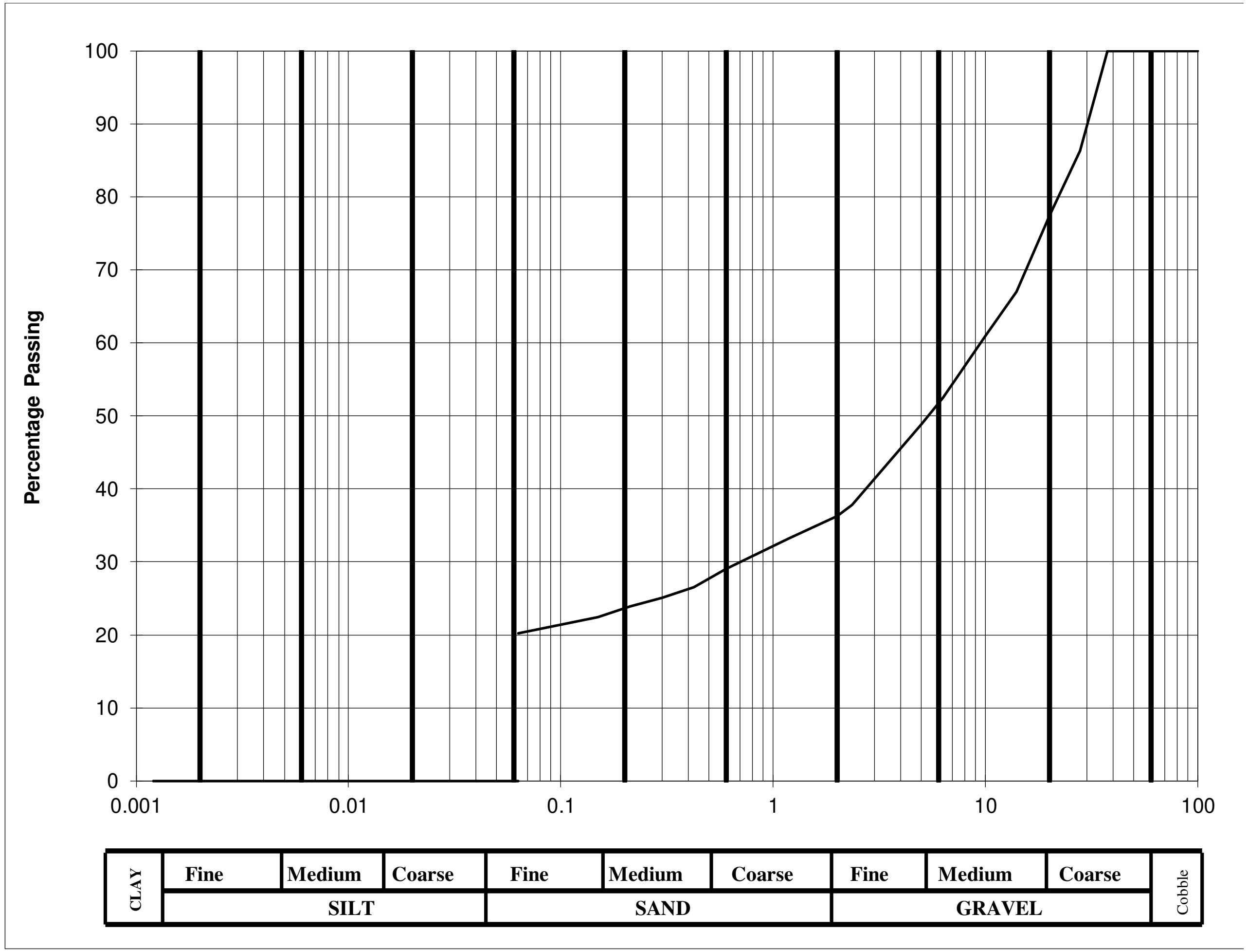


Client :	Wicklow County Council	Lab. No :	26/093	Hole ID :	TP 01
Project :	Ballyguile road, Wicklow	Sample No :	MK05	Depth, m :	1.50

Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	86.3		
20	77.4		
14	67		
10	60.9		
6.3	52.5		
5.0	48.8		
2.36	37.8		
2.00	36.3		
1.18	33.2		
0.600	29		
0.425	26.5		
0.300	25.1		
0.212	23.9		
0.150	22.4		
0.063	20		

Cobbles, %	0
Gravel, %	64
Sand, %	16
Clay / Silt, %	20

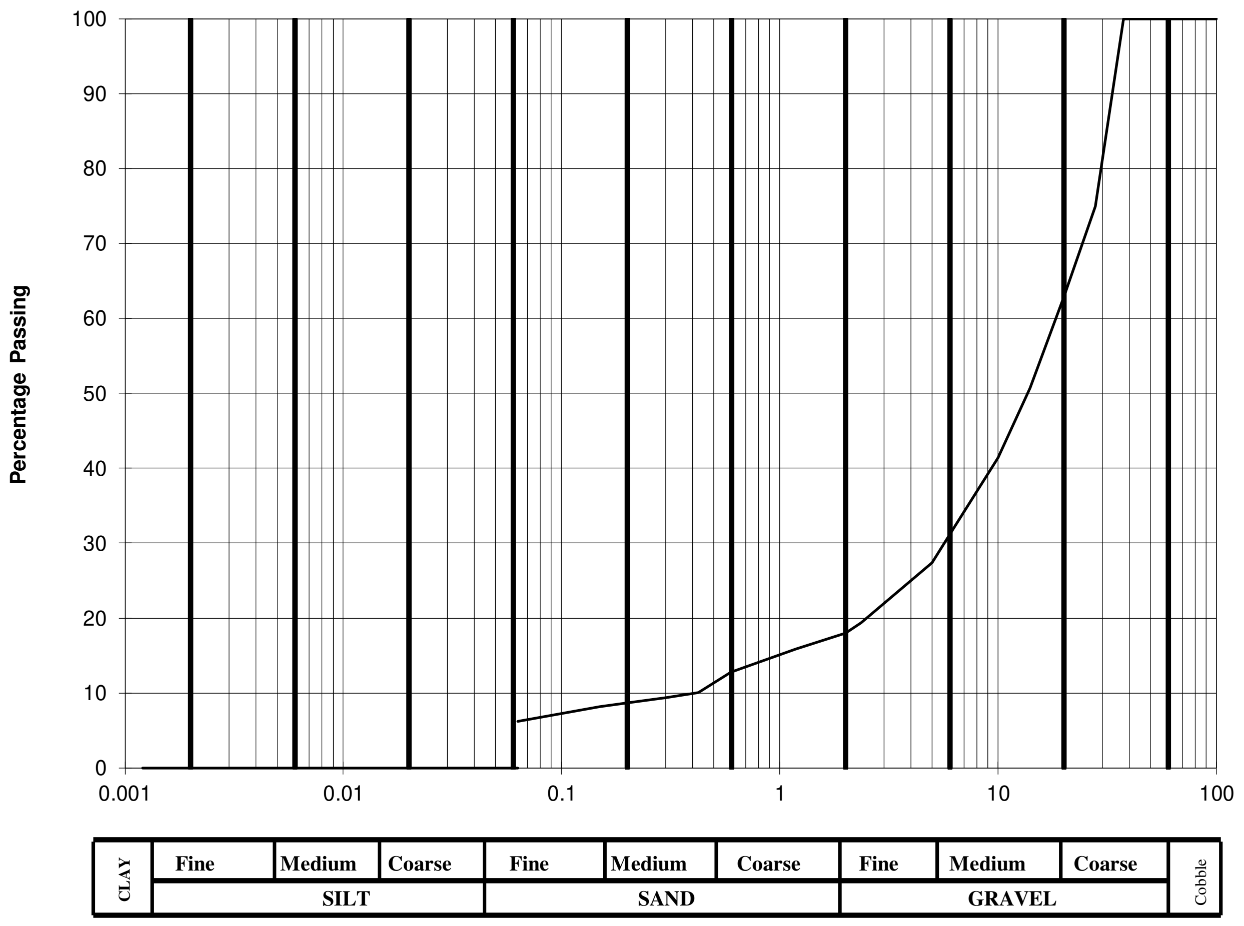


Client :	Wicklow County Council		Lab. No :	26/094		Hole ID :	TP 02
Project :	Ballyguile road, Wicklow		Sample No :	MK02		Depth, m :	1.50

Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	74.9		
20	62.9		
14	50.7		
10	41.4		
6.3	32.2		
5.0	27.4		
2.36	19.4		
2.00	18		
1.18	15.9		
0.600	12.8		
0.425	10.1		
0.300	9.4		
0.212	8.8		
0.150	8.2		
0.063	6		

Cobbles, %	0
Gravel, %	82
Sand, %	12
Clay / Silt, %	6

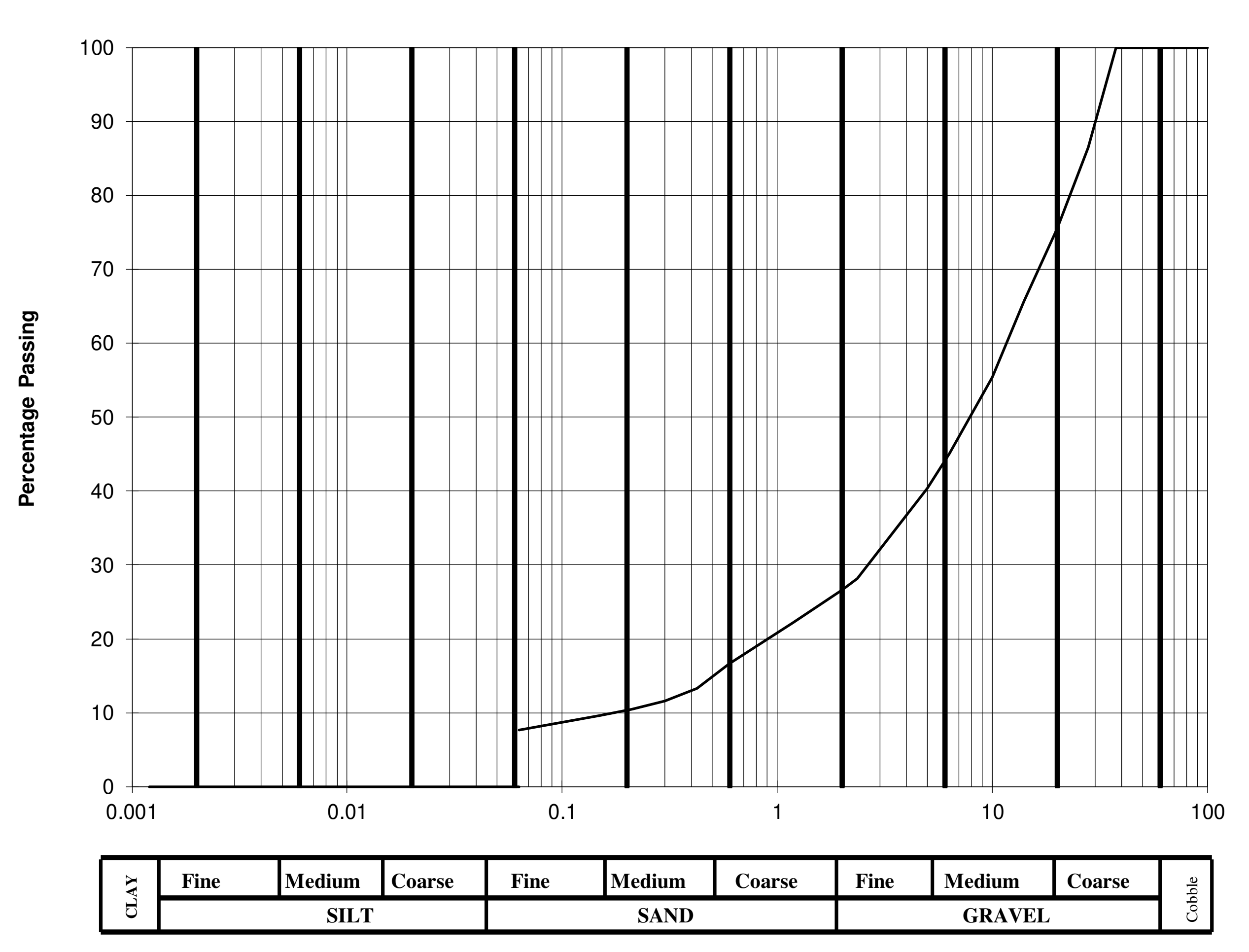


Client :	Wicklow County Council	Lab. No :	26/095	Hole ID :	TP 03
Project :	Ballyguile road, Wicklow	Sample No :	MK15	Depth, m :	1.50

Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	86.5		
20	75.5		
14	65.6		
10	55.4		
6.3	45.1		
5.0	40.4		
2.36	28.2		
2.00	26.6		
1.18	22.2		
0.600	16.6		
0.425	13.3		
0.300	11.6		
0.212	10.5		
0.150	9.6		
0.063	8		

Cobbles, %	0
Gravel, %	73
Sand, %	19
Clay / Silt, %	8



Client :	Wicklow County Council	Lab. No :	26/096	Hole ID :	TP 04
Project :	Ballyguile road, Wicklow	Sample No :	MK12	Depth, m :	2.50

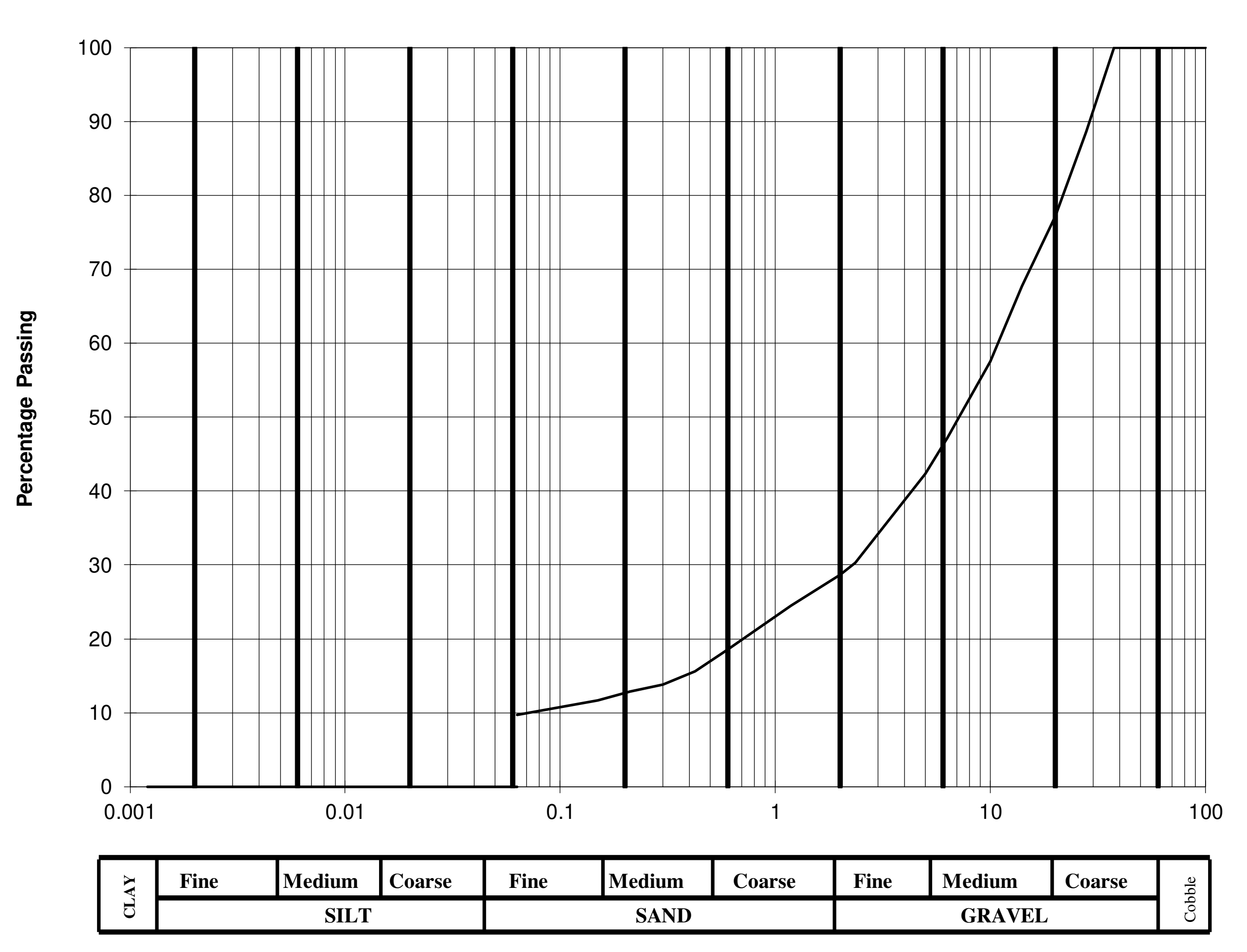
Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	88.6		
20	77.2		
14	67.7		
10	57.5		
6.3	47.2		
5.0	42.3		
2.36	30.3		
2.00	28.7		
1.18	24.5		
0.600	18.5		
0.425	15.6		
0.300	13.8		
0.212	12.9		
0.150	11.7		
0.063	10		

Cobbles, %	0
Gravel, %	71
Sand, %	19
Clay / Silt, %	10



Client :	Wicklow County Council	Lab. No :	26/097	Hole ID :	TP 05
Project :	Ballyguile road, Wicklow	Sample No :	MK09	Depth, m :	2.00

Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

Chemical Testing
In accordance with BS 1377: Part 3

Client	Wicklow County Council
Site	Ballyguile road, Wicklow
S.I. File No	6610 / 25
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	27th January 2026

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Acid Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm
BH01	1.00	BH01	26/084	7.55	0.123	0.060				49.1
BH02	1.00	BH04	26/086	7.88	0.122	0.064				52.8
BH03	1.00	BH06	26/088	8.27	0.124	0.051				41.0
BH04	1.00	BH08	26/090	8.12	0.115	0.058				51.0
BH05	1.00	BH10	26/092	8.37	0.113	0.056				49.8

Appendix 6

Environmental Laboratory Test Results

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Site Investigations Ltd
The Grange
Carhugar
12th Lock Road
Lucan
Co. Dublin

Attention: Stephen Letch

CERTIFICATE OF ANALYSIS

Date of report Generation:	27 January 2026
Customer:	Site Investigations Ltd
Sample Delivery Group (SDG):	251212-152
Your Reference:	6610
Location:	BALLYGUILE ROAD,WICKLOW
Report No:	789751
Order Number:	38/B/25

This report has been revised and directly supersedes 789571 in its entirety.

We received 3 samples on Friday December 12, 2025 and 3 of these samples were scheduled for analysis which was completed on Friday January 23, 2026. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Justin Keeton
Business Unit Leader - Land

1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
32618689	TP02		0.50 - 0.50	10/12/2025
32618690	TP03		0.50 - 0.50	10/12/2025
32618691	TP05		0.50 - 0.50	10/12/2025

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 251212-152
Client Ref.: 6610
Report Number: 789751
Location: BALLYGUILE ROAD,WICKLOW
Superseded Report: 789571

Results Legend

- X Test
- N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			32618689			32618690			32618691		
Customer Sample Reference			TP02			TP03			TP05		
AGS Reference											
Depth (m)			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S
Anions by Kone (w)	All	NDPs: 0 Tests: 3	X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X			X			X		
CEN Readings	All	NDPs: 0 Tests: 3	X			X			X		
Chromium III	All	NDPs: 0 Tests: 3		X			X			X	
Coronene	All	NDPs: 0 Tests: 3		X			X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3	X			X			X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3	X			X			X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3		X			X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 3		X			X			X	
Fluoride	All	NDPs: 0 Tests: 3	X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3		X			X			X	
Loss on Ignition in soils	All	NDPs: 0 Tests: 3		X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 3	X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 3		X			X			X	

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			32618689			32618690			32618691		
Customer Sample Reference			TP02			TP03			TP05		
AGS Reference											
Depth (m)			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50		
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 3		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 3		X			X			X	
PCBs by GCMS	All	NDPs: 0 Tests: 3		X			X			X	
pH	All	NDPs: 0 Tests: 3		X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 3	X			X			X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3	X			X			X		
Sample description	All	NDPs: 0 Tests: 3		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 3		X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 3		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 3			X			X			X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
32618689	TP02	0.50 - 0.50	Light Brown	Silt Loam	Stones	Vegetation
32618690	TP03	0.50 - 0.50	Light Brown	Silt Loam	Stones	Vegetation
32618691	TP05	0.50 - 0.50	Light Brown	Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 251212-152 | Report Number: 789751 | Superseded Report: 789571
Client Ref.: 6610 | Location: BALLYGUILE ROAD,WICKLOW

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.	TP02	TP03	TP05
Depth (m)	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	10/12/2025	10/12/2025	10/12/2025
Sample Time	.	.	.
Date Received	12/12/2025	12/12/2025	12/12/2025
SDG Ref	251212-152	251212-152	251212-152
Lab Sample No.(s)	32618689	32618690	32618691
AGS Reference			

Component	LOD/Units	Method	TP02	TP03	TP05
Moisture Content Ratio (% of as received sample)	%	PM024	11	13	15
Loss on ignition	<0.7 %	TM018	4.36 M	5.34 M	4.15 M
Organic Carbon, Total	<0.2 %	TM132	1.78 M	2.26 M	1.41 M
pH	1 pH Units	TM133	7.59 M	7.95 M	8.25 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M
PCB congener 28	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 52	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 101	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 118	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 138	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 153	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
PCB congener 180	<3 µg/kg	TM168	<3 ♦ M	<3 ♦ M	<30 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21	<21	<210
Chromium, Trivalent	<0.9 mg/kg	TM181	12.9	18.3	21.1
Antimony	<0.6 mg/kg	TM181	<0.6 #	<0.6 #	0.765 #
Arsenic	<0.6 mg/kg	TM181	34.8 M	20.3 M	23.2 M
Barium	<0.6 mg/kg	TM181	43 #	46.8 #	40.8 #
Cadmium	<0.02 mg/kg	TM181	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181	12.9 M	18.3 M	21.1 M
Copper	<1.4 mg/kg	TM181	37.9 M	34.5 M	44.2 M
Lead	<0.7 mg/kg	TM181	50 M	41.3 M	57 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M
Molybdenum	<0.1 mg/kg	TM181	0.327 #	0.575 #	0.324 #
Nickel	<0.2 mg/kg	TM181	30 M	26.5 M	32.4 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	103 M	95.9 M	111 M
PAH total 17 (inclusive of Coronene)	<1 mg/kg	TM410	<1	17.7	7.45
Coronene	<200 µg/kg	TM410	<200	<200	<200
Mineral Oil >C10-C40 (EH_2D_AL)	<5 mg/kg	TM415	6.39	14.7	<5

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

PAH by GCMS

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.			TP02	TP03	TP05			
Depth (m)			0.50 - 0.50	0.50 - 0.50	0.50 - 0.50			
Sample Type			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
Date Sampled			10/12/2025	10/12/2025	10/12/2025			
Sample Time			.	.	.			
Date Received			12/12/2025	12/12/2025	12/12/2025			
SDG Ref			251212-152	251212-152	251212-152			
Lab Sample No.(s)			32618689	32618690	32618691			
AGS Reference								
Component	**LOD/Units**	**Method**						
Naphthalene	<9 µg/kg	TM218	<9 M	<45 M	<45 M			
Acenaphthylene	<12 µg/kg	TM218	<12 M	<60 M	<60 M			
Acenaphthene	<8 µg/kg	TM218	<8 M	473 M	85.6 M			
Fluorene	<10 µg/kg	TM218	<10 M	384 M	63.9 M			
Phenanthrene	<15 µg/kg	TM218	<15 M	2680 M	507 M			
Anthracene	<16 µg/kg	TM218	<16 M	815 M	186 M			
Fluoranthene	<17 µg/kg	TM218	<17 M	3540 M	1200 M			
Pyrene	<15 µg/kg	TM218	17 M	2960 M	1080 M			
Benz(a)anthracene	<14 µg/kg	TM218	<14 M	1260 M	583 M			
Chrysene	<10 µg/kg	TM218	13.7 M	1050 M	503 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	21.2 M	1450 M	921 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14 M	595 M	349 M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15 M	1120 M	755 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 M	745 M	635 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	<115 M	<115 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24 M	662 M	581 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	17700	7450			

TPH CWG (S)

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

		Customer Sample Ref.	TP02	TP03	TP05
		Depth (m)	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
		Date Sampled	10/12/2025	10/12/2025	10/12/2025
		Sample Time	.	.	.
		Date Received	12/12/2025	12/12/2025	12/12/2025
		SDG Ref	251212-152	251212-152	251212-152
		Lab Sample No.(s)	32618689	32618690	32618691
		AGS Reference			
Component	**LOD/Units**	**Method**			
GRO Surrogate % recovery**	%	TM089	94.9	99.1	97
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	<10	<10
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	<10	<10
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	<10	<10
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000 #	<1000 #	<1000 #
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000 #	<1000 #	<1000 #
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000 #	<1000 #	<1000 #
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	3050 #	13800 #	2790 #
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	<1000	<1000
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	14900	<5000
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	12600	55200	68400
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	<10	<10
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	<10	<10
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	<10	<10
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000 #	<1000 #	<1000 #
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000 #	<1000 #	<1000 #
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000 #	5210 #	2210 #
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	11200 #	28800 #	34100 #
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	6130	31700
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	<1000	10500
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	12600	40300	68400
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	12600	55200	68400
GRO >C5-C6 (HS_1D)	<20 µg/kg	TM089	<20	<20	<20
GRO >C6-C7 (HS_1D)	<20 µg/kg	TM089	<20	<20	<20
GRO >C7-C8 (HS_1D)	<20 µg/kg	TM089	<20	<20	<20
GRO >C8-C10 (HS_1D)	<20 µg/kg	TM089	<20	<20	<20
GRO >C10-C12 (HS_1D)	<20 µg/kg	TM089	<20	<20	<20
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	<50	<50
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	<50	<50
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	<20	<20

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

VOC MS (S)

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- *** 6:2 FTAB (see appendix)
- 1-4♦§@ Sample deviation (see appendix)

Customer Sample Ref.			TP02	TP03	TP05			
Depth (m)			0.50 - 0.50	0.50 - 0.50	0.50 - 0.50			
Sample Type			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
Date Sampled			10/12/2025	10/12/2025	10/12/2025			
Sample Time			.	.	.			
Date Received			12/12/2025	12/12/2025	12/12/2025			
SDG Ref			251212-152	251212-152	251212-152			
Lab Sample No.(s)			32618689	32618690	32618691			
AGS Reference								
Component	**LOD/Units**	**Method**						
Dibromofluoromethane**	%	TM116	104	101	105			
Toluene-d8**	%	TM116	90.8	93.2	92.7			
4-Bromofluorobenzene**	%	TM116	71	74.9	76			
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116	<0.5 M	<0.5 M	<0.5 M			
Benzene	<1 µg/kg	TM116	<3.5 M	<1 M	<1.5 M			
Toluene	<1 µg/kg	TM116	<5.5 M	<1 M	<1.5 M			
Ethylbenzene	<1 µg/kg	TM116	<1 M	<1 M	<1 M			
p/m-Xylene	<2 µg/kg	TM116	<2 #	<2 #	<2 #			
o-Xylene	<2 µg/kg	TM116	<2 M	<2 M	<2 M			
Sum of BTEX	<7 µg/kg	TM116	<14	<7	<8			

Asbestos Identification - Solid Samples

Results Legend
ISO17025 accredited.
M *m*CERTS accredited.
* Subcontracted test.

1-5&♦§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP02 0.50 - 0.50 SOLID 10/12/2025 00:00:00 12/12/2025 12:10:00 251212-152 32618689 TM048	17/12/2025	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP03 0.50 - 0.50 SOLID 10/12/2025 00:00:00 12/12/2025 12:10:00 251212-152 32618690 TM048	17/12/2025	Renata Bozhkov	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP05 0.50 - 0.50 SOLID 10/12/2025 00:00:00 12/12/2025 12:10:00 251212-152 32618691 TM048	17/12/2025	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	BALLYGUILE ROAD,WICKLOW
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	251212-152
Lab Sample Number(s)	32618689
Sampled Date	10-Dec-2025
Customer Sample Ref.	TP02
Depth (m)	0.50 - 0.50

Landfill Waste Acceptance Criteria Limits

Solid Waste Analysis	Result	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	1.78	3	5	6
Loss on Ignition (%)	4.36	-	-	10
Sum of BTEX (mg/kg)	<0.014	6	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	6.39	500	-	-
PAH Sum of 17 (mg/kg)	<1	100	-	-
pH (pH Units)	7.59	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C2 Conc^n in 10:1 eluate (mg/l)		A2 10:1 conc^n leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00142	<0.0005	0.0142	<0.005	0.5	2	25
Barium	0.00379	<0.0002	0.0379	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00337	<0.0003	0.0337	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000732	<0.0004	0.00732	<0.004	0.4	10	40
Lead	0.00128	<0.0002	0.0128	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00318	<0.001	0.0318	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	104	<10	1040	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.34	<3	53.4	<30	500	800	1000

Leach Test Information

Date Prepared	13-Dec-2025
pH (pH Units)	8.22
Conductivity (µS/cm)	136
Volume Leachant (Litres)	0.880

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

27/01/2026 16:47:04

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	BALLYGUILE ROAD,WICKLOW
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	22.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81.4
Particle Size <4mm	>95%		

Case	
SDG	251212-152
Lab Sample Number(s)	32618690
Sampled Date	10-Dec-2025
Customer Sample Ref.	TP03
Depth (m)	0.50 - 0.50

Landfill Waste Acceptance Criteria Limits

Solid Waste Analysis	Result	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	2.26	3	5	6
Loss on Ignition (%)	5.34	-	-	10
Sum of BTEX (mg/kg)	<0.007	6	-	-
Sum of 7 PCBs (mg/kg)	<0.021	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	14.7	500	-	-
PAH Sum of 17 (mg/kg)	17.7	100	-	-
pH (pH Units)	7.95	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	C_2 Conc^n in 10:1 eluate (mg/l)		A_2 10:1 conc^n leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000647	<0.0005	0.00647	<0.005	0.5	2	25
Barium	0.00279	<0.0002	0.0279	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00325	<0.0003	0.0325	<0.003	2	50	100
Mercury Dissolved (CVAF)	0.0000124	<0.00001	0.000124	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000574	<0.0004	0.00574	<0.004	0.4	10	40
Lead	0.000389	<0.0002	0.00389	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00168	<0.001	0.0168	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	114	<10	1140	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.87	<3	68.7	<30	500	800	1000

Leach Test Information

Date Prepared	15-Dec-2025
pH (pH Units)	8.31
Conductivity (µS/cm)	149
Volume Leachant (Litres)	0.879

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

27/01/2026 16:47:04

Validated

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	BALLYGUILE ROAD,WICKLOW
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	17.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.3
Particle Size <4mm	>95%		

Case	
SDG	251212-152
Lab Sample Number(s)	32618691
Sampled Date	10-Dec-2025
Customer Sample Ref.	TP05
Depth (m)	0.50 - 0.50

Landfill Waste Acceptance Criteria Limits

Solid Waste Analysis	**Result**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon (%)	1.41	3	5	6
Loss on Ignition (%)	4.15	-	-	10
Sum of BTEX (mg/kg)	<0.008	6	-	-
Sum of 7 PCBs (mg/kg)	<0.105	1	-	-
Mineral Oil (mg/kg) (EH_2D_AL)	<5	500	-	-
PAH Sum of 17 (mg/kg)	7.45	100	-	-
pH (pH Units)	8.25	-	>6	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Arsenic	0.000673	<0.0005	0.00673	<0.005	0.5	2	25
Barium	0.00203	<0.0002	0.0203	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00331	<0.0003	0.0331	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000482	<0.0004	0.00482	<0.004	0.4	10	40
Lead	0.000348	<0.0002	0.00348	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00318	<0.001	0.0318	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	78.8	<10	788	<100	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.19	<3	41.9	<30	500	800	1000

Leach Test Information

Date Prepared	15-Dec-2025
pH (pH Units)	8.33
Conductivity (µS/cm)	103
Volume Leachant (Litres)	0.884

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C). Prepared leachates do not hold ISO17025 accreditation.

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

27/01/2026 16:47:04

16:46:47 27/01/2026

CERTIFICATE OF ANALYSIS

SDG: 251212-152 **Report Number:** 789751 **Superseded Report:** 789571
Client Ref.: 6610 **Location:** BALLYGUILE ROAD,WICKLOW

Data Amendment

Sample No. : 32618690 **Date of Amendment :** 26/01/2026 **Authorised:** Kimberley Armstrong **Origin:**

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 101	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 118	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 138	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 153	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 180	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 28	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	PCB congener 52	ug/kg	<15	<3
TP03	Analytical/Quality Issue	PCBs by GCMS	Sum of detected PCB 7 Congeners	ug/kg	<105	<21

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Determination of Hexavalent Chromium using Kone analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS
TM048	Identification of Asbestos in Bulk Material
TM104	Determination of Fluoride using the Kone Analyser
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	The determination of PAH in soil samples by GC-MS
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

Test Completion Dates

Lab Sample No(s)	32618689	32618690	32618691
Customer Sample Ref.	TP02	TP03	TP05
AGS Ref.			
Depth	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Anions by Kone (w)	16-Dec-2025	17-Dec-2025	17-Dec-2025
Asbestos ID in Solid Samples	17-Dec-2025	18-Dec-2025	17-Dec-2025
CEN 10:1 Leachate (1 Stage)	13-Dec-2025	15-Dec-2025	15-Dec-2025
CEN Readings	16-Dec-2025	17-Dec-2025	17-Dec-2025
Chromium III	18-Dec-2025	18-Dec-2025	18-Dec-2025
Coronene	17-Dec-2025	17-Dec-2025	17-Dec-2025
Dissolved Metals by ICP-MS	19-Dec-2025	22-Dec-2025	22-Dec-2025
Dissolved Organic/Inorganic Carbon	16-Dec-2025	17-Dec-2025	18-Dec-2025
EPH by GCxGC-FID	17-Dec-2025	17-Dec-2025	17-Dec-2025
EPH CWG GC (S)	17-Dec-2025	16-Dec-2025	16-Dec-2025
Fluoride	18-Dec-2025	19-Dec-2025	19-Dec-2025
GRO by GC-FID (S)	16-Dec-2025	16-Dec-2025	16-Dec-2025
Hexavalent Chromium (s)	17-Dec-2025	17-Dec-2025	17-Dec-2025
Loss on Ignition in soils	17-Dec-2025	17-Dec-2025	17-Dec-2025
Mercury Dissolved	18-Dec-2025	17-Dec-2025	17-Dec-2025
Metals in solid samples by OES	18-Dec-2025	18-Dec-2025	18-Dec-2025
Moisture at 105C	13-Dec-2025	15-Dec-2025	15-Dec-2025
PAH 16 & 17 Calc	22-Dec-2025	22-Dec-2025	22-Dec-2025
PAH by GCMS	22-Dec-2025	22-Dec-2025	22-Dec-2025
PCBs by GCMS	23-Jan-2026	23-Jan-2026	23-Jan-2026
pH	16-Dec-2025	16-Dec-2025	16-Dec-2025
pH Value of Filtered Water	16-Dec-2025	17-Dec-2025	17-Dec-2025
Phenols by HPLC (W)	17-Dec-2025	17-Dec-2025	17-Dec-2025
Sample description	13-Dec-2025	13-Dec-2025	13-Dec-2025
Total Organic Carbon	17-Dec-2025	17-Dec-2025	17-Dec-2025
TPH CWG GC (S)	17-Dec-2025	16-Dec-2025	16-Dec-2025
VOC MS (S)	17-Dec-2025	17-Dec-2025	17-Dec-2025

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised.
This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur - e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis.
The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l.
Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only.
It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.
Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

If during the search of the two 'pinch' samples by PLM only 1 or 2 fibres or fibre bundles are seen and identified as asbestos, the term 'trace asbestos identified' is reported.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Potentially respirable fibres are identified by using a Phase Contrast Microscope.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.
The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

21. 6:2 FTAB

Recovery of 6:2 FTAB in the quality control samples has been observed to be <50% of the target value. Please note the 6:2 FTAB result is supplied as indicative only.

Appendix 7

Waste Classification Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

7XCI9-1F2OA-LOSFF

Report is invalid if pages are removed.

Job name

6610

Description/Comments

Client: Wicklow County Council
Engineer: SDS Design Engineers

Project

Ballyguile Road

Site

Wicklow, Co. Wicklow

Classified by

Name:
Stephen Letch
Date:
28 Jan 2026 16:04 GMT
Telephone:
00353 86817 9449

Company:
Site Investigations Ltd
The Grange
12th Lock Road
Lucan
K78 F598

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	**Date**
Hazardous Waste Classification	09 Oct 2019
Most recent 3 year Refresher	02 Dec 2025

Next 3 year Refresher due by Dec 2028

Purpose of classification

2 - Material Characterisation

Address of the waste

Hill View, Hillview, Wicklow Urban ED, County Wicklow, The Municipal District of Wicklow, Ireland **Post Code** A67 C421

Description of industry/producer giving rise to the waste

Site Investigation

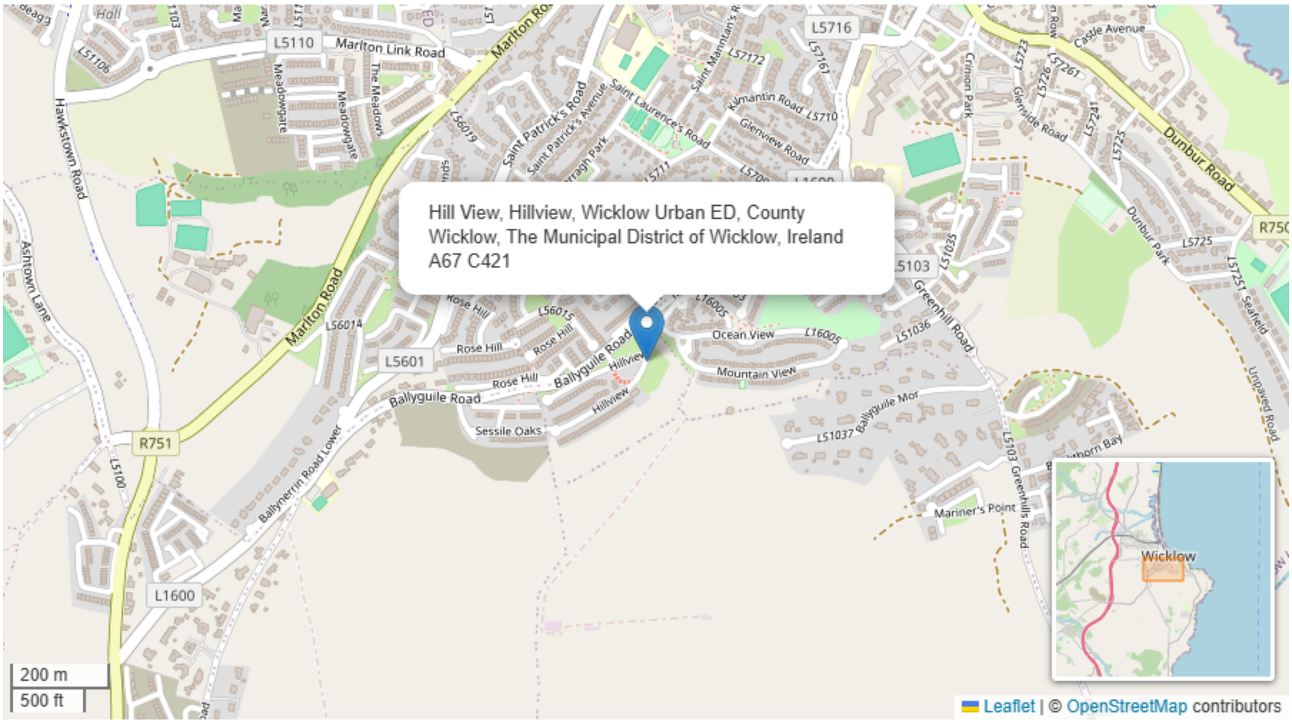
Description of the specific process, sub-process and/or activity that created the waste

Soils recovered for environmental testing

Description of the waste

Natural soils

Waste Location



Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	TP02-0.50	0.50	Non Hazardous		Pass	Pass	3
2	TP03-0.50	0.50	Non Hazardous		Pass	Pass	7
3	TP05-0.50	0.50	Non Hazardous		Pass	Pass	11

Related documents

#	Name	Description
1	251212-152.hwol	ALS Hawarden .hwol file used to populate the Job
2	Rilta Suite ALS	waste stream template used to create this Job

WAC Results

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Stephen Letch

Created date: 28 Jan 2026 16:04 GMT

Appendices | Page

Classification of sample: TP02-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
TP02-0.50		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.50 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:			
11% (wet weight correction)			

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.59 pH		7.59 pH	7.59 pH		
2	TPH (C6 to C40) petroleum group			TPH		12.6 mg/kg		11.214 mg/kg	0.00112 %	✓	
3	confirm TPH has NOT arisen from diesel or petrol			TPH_CONFIRM		☑					
4	asbestos fibres detected (Yes/No)			ACM_FIBRES		No					
5	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<0.6 mg/kg		<0.6 mg/kg	<0.00006 %		<LOD
6	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	34.8 mg/kg		30.972 mg/kg	0.0031 %	✓	
7	barium { barium oxide }		215-127-9	1304-28-5		43 mg/kg	1.117	42.729 mg/kg	0.00427 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
9	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37.9 mg/kg	1.126	37.977 mg/kg	0.0038 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	50 mg/kg		44.5 mg/kg	0.00445 %	✓	
11	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.327 mg/kg	1.5	0.437 mg/kg	0.0000437 %	✓	

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
13	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		30 mg/kg	1.273	33.978 mg/kg	0.0034 %	✓	
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		103 mg/kg	1.245	114.103 mg/kg	0.0114 %	✓	
16	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12.9 mg/kg	1.462	16.78 mg/kg	0.00168 %	✓	
17	chromium in Cr(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
18	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %		<LOD
19	acenaphthylene		205-917-1	208-96-8		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
20	acenaphthene		201-469-6	83-32-9		<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %		<LOD
21	fluorene		201-695-5	86-73-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
22	phenanthrene		201-581-5	85-01-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
23	anthracene		204-371-1	120-12-7		<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %		<LOD
24	fluoranthene		205-912-4	206-44-0		<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %		<LOD
25	pyrene		204-927-3	129-00-0		0.017 mg/kg		0.0151 mg/kg	0.00000151 %	✓	
26	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
27	chrysene	601-048-00-0	205-923-4	218-01-9		0.0137 mg/kg		0.0122 mg/kg	0.00000122 %	✓	
28	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.0212 mg/kg		0.0189 mg/kg	0.00000189 %	✓	
29	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %		<LOD
30	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<LOD
31	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %		<LOD
32	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %		<LOD
33	benzo[ghi]perylene		205-883-8	191-24-2		<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %		<LOD
34	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
35	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
36	benzene	601-020-00-8	200-753-7	71-43-2		<0.0035 mg/kg		<0.0035 mg/kg	<0.00000035 %		<LOD
37	toluene	601-021-00-3	203-625-9	108-88-3		<0.0055 mg/kg		<0.0055 mg/kg	<0.00000055 %		<LOD
38	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
40		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		**<LOD**
41	●	< 2% non-natural materials (Yes/No)				Yes							
				NONNAT_MAT									
										Total:	0.0333 %		

Key

(yellow)	User supplied data
(grey)	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00112%)

WAC results for sample: TP02-0.50

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand Header		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.78	3	-
2	LOI (loss on ignition)	%	4.36	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	6.39	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-
7	pH	pH	7.59	-	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0142	0.5	2
10	barium	mg/kg	0.0379	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0337	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	<0.03	0.5	10
16	nickel	mg/kg	0.0073	0.4	10
17	lead	mg/kg	0.0128	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0318	4	50
21	chloride	mg/kg	<20	800	15000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1000	20000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	53.4	500	800
26	TDS (total dissolved solids)	mg/kg	1040	4000	60000

Key

User supplied data

Classification of sample: TP03-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	**TP03-0.50**	LoW Code:	
Sample Depth:	**0.50 m**	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	**13%** (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.95 pH		7.95 pH	7.95 pH		
2	TPH (C6 to C40) petroleum group			TPH		55.2 mg/kg		48.024 mg/kg	0.0048 %	✓	
3	confirm TPH has NOT arisen from diesel or petrol			TPH_CONFIRM		☑					
4	asbestos fibres detected (Yes/No)			ACM_FIBRES		No					
5	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<0.6 mg/kg		<0.6 mg/kg	<0.00006 %		<LOD
6	arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	20.3 mg/kg		17.661 mg/kg	0.00177 %	✓	
7	barium { barium oxide }		215-127-9	1304-28-5		46.8 mg/kg	1.117	45.46 mg/kg	0.00455 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
9	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		34.5 mg/kg	1.126	33.794 mg/kg	0.00338 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	41.3 mg/kg		35.931 mg/kg	0.00359 %	✓	
11	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.575 mg/kg	1.5	0.75 mg/kg	0.000075 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
13		nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		26.5	mg/kg	1.273	29.34	mg/kg	0.00293 %	✓	
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
15		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		95.9	mg/kg	1.245	103.85	mg/kg	0.0104 %	✓	
16		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18.3	mg/kg	1.462	23.269	mg/kg	0.00233 %	✓	
17		chromium in Cr(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6	mg/kg	1.923	<1.154	mg/kg	<0.000115 %		<LOD
18		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.045	mg/kg		<0.045	mg/kg	<0.0000045 %		<LOD
19		acenaphthylene		205-917-1	208-96-8		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
20		acenaphthene		201-469-6	83-32-9		0.473	mg/kg		0.412	mg/kg	0.0000412 %	✓	
21		fluorene		201-695-5	86-73-7		0.384	mg/kg		0.334	mg/kg	0.0000334 %	✓	
22		phenanthrene		201-581-5	85-01-8		2.68	mg/kg		2.332	mg/kg	0.000233 %	✓	
23		anthracene		204-371-1	120-12-7		0.815	mg/kg		0.709	mg/kg	0.0000709 %	✓	
24		fluoranthene		205-912-4	206-44-0		3.54	mg/kg		3.08	mg/kg	0.000308 %	✓	
25		pyrene		204-927-3	129-00-0		2.96	mg/kg		2.575	mg/kg	0.000258 %	✓	
26		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.26	mg/kg		1.096	mg/kg	0.00011 %	✓	
27		chrysene	601-048-00-0	205-923-4	218-01-9		1.05	mg/kg		0.914	mg/kg	0.0000914 %	✓	
28		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.45	mg/kg		1.261	mg/kg	0.000126 %	✓	
29		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.595	mg/kg		0.518	mg/kg	0.0000518 %	✓	
30		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.12	mg/kg		0.974	mg/kg	0.0000974 %	✓	
31		indeno[123-cd]pyrene		205-893-2	193-39-5		0.745	mg/kg		0.648	mg/kg	0.0000648 %	✓	
32		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.115	mg/kg		<0.115	mg/kg	<0.0000115 %		<LOD
33		benzo[ghi]perylene		205-883-8	191-24-2		0.662	mg/kg		0.576	mg/kg	0.0000576 %	✓	
34		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.021	mg/kg		<0.021	mg/kg	<0.0000021 %		<LOD
35		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005	mg/kg		<0.0005	mg/kg	<0.00000005 %		<LOD
36		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
37		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
38		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
39		coronene		205-881-7	191-07-1		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD

#		Determinand EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
40		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4] 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		**<LOD**
41	●	< 2% non-natural materials (Yes/No)		NONNAT_MAT		Yes							
										Total:	0.0354 %		

Key

(yellow)	User supplied data
(grey)	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0048%)

WAC results for sample: TP03-0.50

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand Header		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.26	3	-
2	LOI (loss on ignition)	%	5.34	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	1	-
5	Mineral oil (C10 to C40)	mg/kg	14.7	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	100	-
7	pH	pH	7.95	-	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0064	0.5	2
10	barium	mg/kg	0.0279	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0325	2	50
14	mercury	mg/kg	0.0001	0.01	0.2
15	molybdenum	mg/kg	<0.03	0.5	10
16	nickel	mg/kg	0.0057	0.4	10
17	lead	mg/kg	0.0038	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0168	4	50
21	chloride	mg/kg	<20	800	15000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1000	20000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	68.7	500	800
26	TDS (total dissolved solids)	mg/kg	1140	4000	60000

Key

User supplied data

Classification of sample: TP05-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
TP05-0.50		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.50 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:			
15% (wet weight correction)			

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		8.25	pH		8.25	pH	8.25 pH		
2		TPH (C6 to C40) petroleum group			TPH		68.4	mg/kg		58.14	mg/kg	0.00581 %	✓	
3		confirm TPH has NOT arisen from diesel or petrol			TPH_CONFIRM		☑							
4		asbestos fibres detected (Yes/No)			ACM_FIBRES		No							
5		antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	0.765	mg/kg		0.65	mg/kg	0.000065 %	✓	
6		arsenic { arsenic compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	23.2	mg/kg		19.72	mg/kg	0.00197 %	✓	
7		barium { barium oxide }		215-127-9	1304-28-5		40.8	mg/kg	1.117	38.72	mg/kg	0.00387 %	✓	
8		cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
9		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44.2	mg/kg	1.126	42.3	mg/kg	0.00423 %	✓	
10		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	57	mg/kg		48.45	mg/kg	0.00485 %	✓	
11		mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1	mg/kg	1.419	<0.142	mg/kg	<0.0000142 %		<LOD
12		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.324	mg/kg	1.5	0.413	mg/kg	0.0000413 %	✓	

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
13	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		32.4 mg/kg	1.273	35.047 mg/kg	0.0035 %	✓	
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		111 mg/kg	1.245	117.439 mg/kg	0.0117 %	✓	
16	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21.1 mg/kg	1.462	26.213 mg/kg	0.00262 %	✓	
17	chromium in Cr(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.6 mg/kg	1.923	<1.154 mg/kg	<0.000115 %		<LOD
18	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.045 mg/kg		<0.045 mg/kg	<0.0000045 %		<LOD
19	acenaphthylene		205-917-1	208-96-8		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
20	acenaphthene		201-469-6	83-32-9		0.0856 mg/kg		0.0728 mg/kg	0.00000728 %	✓	
21	fluorene		201-695-5	86-73-7		0.0639 mg/kg		0.0543 mg/kg	0.00000543 %	✓	
22	phenanthrene		201-581-5	85-01-8		0.507 mg/kg		0.431 mg/kg	0.0000431 %	✓	
23	anthracene		204-371-1	120-12-7		0.186 mg/kg		0.158 mg/kg	0.0000158 %	✓	
24	fluoranthene		205-912-4	206-44-0		1.2 mg/kg		1.02 mg/kg	0.000102 %	✓	
25	pyrene		204-927-3	129-00-0		1.08 mg/kg		0.918 mg/kg	0.0000918 %	✓	
26	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.583 mg/kg		0.496 mg/kg	0.0000496 %	✓	
27	chrysene	601-048-00-0	205-923-4	218-01-9		0.503 mg/kg		0.428 mg/kg	0.0000428 %	✓	
28	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.921 mg/kg		0.783 mg/kg	0.0000783 %	✓	
29	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.349 mg/kg		0.297 mg/kg	0.0000297 %	✓	
30	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.755 mg/kg		0.642 mg/kg	0.0000642 %	✓	
31	indeno[123-cd]pyrene		205-893-2	193-39-5		0.635 mg/kg		0.54 mg/kg	0.000054 %	✓	
32	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.115 mg/kg		<0.115 mg/kg	<0.0000115 %		<LOD
33	benzo[ghi]perylene		205-883-8	191-24-2		0.581 mg/kg		0.494 mg/kg	0.0000494 %	✓	
34	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.21 mg/kg		<0.21 mg/kg	<0.000021 %		<LOD
35	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.0005 mg/kg		<0.0005 mg/kg	<0.00000005 %		<LOD
36	benzene	601-020-00-8	200-753-7	71-43-2		<0.0015 mg/kg		<0.0015 mg/kg	<0.00000015 %		<LOD
37	toluene	601-021-00-3	203-625-9	108-88-3		<0.0015 mg/kg		<0.0015 mg/kg	<0.00000015 %		<LOD
38	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD

#		Determinand (EU CLP index number / EC Number / CAS Number)	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
40		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4] 601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
41	●	< 2% non-natural materials (Yes/No) NONNAT_MAT		Yes					
						Total:	0.0393 %		

Key

(yellow)	User supplied data
(grey)	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
(icon)	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 1000 mg/kg (0.1%) because: HP 3 can be discounted as this is a solid waste without a free draining liquid phase.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00581%)

WAC results for sample: TP05-0.50

WAC Settings: samples in this job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand Header		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.41	3	-
2	LOI (loss on ignition)	%	4.15	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	1	-
5	Mineral oil (C10 to C40)	mg/kg	<5	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	100	-
7	pH	pH	8.25	-	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.0067	0.5	2
10	barium	mg/kg	0.0203	20	100
11	cadmium	mg/kg	<0.0008	0.04	1
12	chromium	mg/kg	<0.01	0.5	10
13	copper	mg/kg	0.0331	2	50
14	mercury	mg/kg	<0.0001	0.01	0.2
15	molybdenum	mg/kg	<0.03	0.5	10
16	nickel	mg/kg	0.0048	0.4	10
17	lead	mg/kg	0.0034	0.5	10
18	antimony	mg/kg	<0.01	0.06	0.7
19	selenium	mg/kg	<0.01	0.1	0.5
20	zinc	mg/kg	0.0318	4	50
21	chloride	mg/kg	<20	800	15000
22	fluoride	mg/kg	<5	10	150
23	sulphate	mg/kg	<20	1000	20000
24	phenol index	mg/kg	<0.16	1	-
25	DOC (dissolved organic carbon)	mg/kg	41.9	500	800
26	TDS (total dissolved solids)	mg/kg	788	4000	60000

Key

User supplied data

Appendix A: Classifier defined and non EU CLP determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

confirm TPH has NOT arisen from diesel or petrol (CAS Number: TPH_CONFIRM)

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

asbestos fibres detected (Yes/No) (CAS Number: ACM_FIBRES)

Description/Comments: not classified, information only
Data source: N/A
Data source date: 15 Jan 2020
Hazard Statements: None.

arsenic compounds, with the exception of those specified elsewhere in this Annex

EU CLP index number: 033-002-00-5
Description/Comments: Worst Case: IARC considers arsenic compounds Group 1; Carcinogenic to humans
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from:: IARC Group 1 (23, Sup 7, 100C) 2012

barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825
Data source date: 02 Apr 2020
Hazard Statements: Acute Tox. 3; H301 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 1; H332

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

EU CLP index number: 048-001-00-5
Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from:: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

EU CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from:: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

polychlorobiphenyls; PCB (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from:: IARC Group 1 (23, Sup 7, 100C) 2012

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

EU CLP index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2; H351 hazard statement sourced from:: IARC Group 2B (77) 2000

coronene (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

< 2% non-natural materials (Yes/No) (CAS Number: NONNAT_MAT)

Description/Comments: not classified, information only

anthropogenic or man-made substances such as rubble, concrete, bricks, metal and bitumen that are non-natural to the environment from which the material was extracted
Data source: N/A
Data source date: 15 Jan 2020
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

antimony {antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex}

Worst Case Scenario.

arsenic {arsenic compounds, with the exception of those specified elsewhere in this Annex}

Chromium VI at limits of detection. Arsenic compounds used as the next most hazardous species. No chromate present.

barium {barium oxide}

Chromium VI at limits of detection. Barium oxide used as the next most hazardous species. No chromate present.

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Chromium VII at limits of detection. Cadmium compounds used as the next most hazardous species. No chromate present.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Chromium VI at limits of detection. Lead compounds used as the next most hazardous species. No chromate present.

mercury {mercury difulminate}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel(II) oxide (nickel monoxide)}

Chromium VI at limits of detection. Nickel oxide used as the next most hazardous species. No chromate present.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc oxide}

Chromium VI at limits of detection. Zinc oxide used as the next most hazardous species. No chromate present.

chromium in Cr(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in Cr(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.

Appendix C: Version

HazWasteOnline Classification Engine: EU WM3 1st Edition v1.1.NI using the EU LoW
HazWasteOnline Classification Engine Version: 2026.26.6955.12551 (26 Jan 2026)
HazWasteOnline Database: 2026.27.6959.12557 (27 Jan 2026)

This classification utilises the following guidance and legislation:
WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
17th ATP - Regulation (EU) 2021/849 of 11 March 2021
18th ATP - Regulation (EU) 2022/692 of 16 February 2022
POPs Amendment 2022 - Regulation (EU) 2022/2400 of 23 November 2022
19th ATP - Regulation (EU) 2023/1434 of 25 April 2023
20th ATP - Regulation (EU) 2023/1435 of 2 May 2023
21st ATP - Regulation (EU) 2024/197 of 19 October 2023
22nd ATP - Regulation (EU) 2024/2564 of 19th June 2024
23rd ATP - Regulation (EU) 2025/1222 of 2nd April 2025

Appendix 8

Soil Recovery Facilities Report

Soil Recovery Sites Screening Report

1P8ZJ-XM889-KH9TE

Job name

6610

Description/Comments

Client: Wicklow County Council
Engineer: SDS Design Engineers

Project

Ballyguile Road

Site

Wicklow, Co. Wicklow

Classified by

Name:
Stephen Letch
Date:
28 Jan 2026 16:04 GMT
Telephone:
00353 86817 9449

Company:
Site Investigations Ltd
The Grange
12th Lock Road
Lucan
K78 F598

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	**Date**
Hazardous Waste Classification	09 Oct 2019
Most recent 3 year Refresher	02 Dec 2025

Next 3 year Refresher due by Dec 2028

Purpose of classification

2 - Material Characterisation

Address of the waste

Hill View, Hillview, Wicklow Urban ED, County Wicklow, The Municipal District of Wicklow, Ireland

Post Code A67 C421

Description of industry/producer giving rise to the waste

Site Investigation

Description of the specific process, sub-process and/or activity that created the waste

Soils recovered for environmental testing

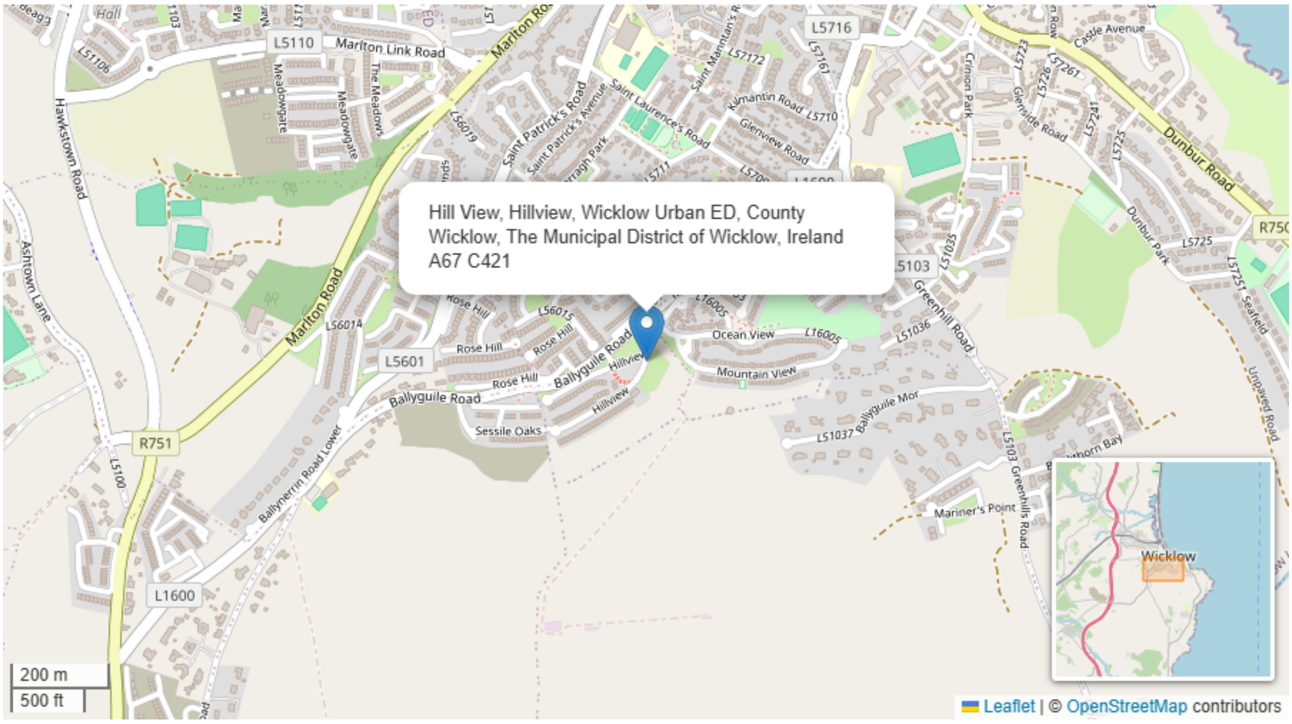
Description of the waste

Natural soils

Screening Summary

#	Sample name	Depth [m]	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Domain 7	Page
1	TP02-0.50	0.50	Fail	Pass	Pass	Pass	Pass	Pass	Pass	3
2	TP03-0.50	0.50	Fail	Fail	Fail	Fail	Fail	Fail	Fail	10
3	TP05-0.50	0.50	Fail	Fail	Fail	Fail	Fail	Fail	Fail	15

Waste Location



Soil Recovery Sites Screening results for sample: TP02-0.50

⚠ Sample "TP02-0.50" fails the "Domain 1" limits

#	Determinand		User entered data	Domain 1 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	15.6	mg/kg
4	cadmium	mg/kg	<0.02	1.5	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	51.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	51.2	mg/kg
8	mercury	mg/kg	<0.1	0.254	mg/kg
9	nickel	mg/kg	30	47.8	mg/kg
10	lead	mg/kg	50	48.3	mg/kg
11	zinc	mg/kg	103	137	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Sample "TP02-0.50" passes the "Domain 2" limits

#	Determinand		User entered data	Domain 2 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	24.9	mg/kg
4	cadmium	mg/kg	<0.02	3.28	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	50.3	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	63.5	mg/kg
8	mercury	mg/kg	<0.1	0.36	mg/kg
9	nickel	mg/kg	30	61.9	mg/kg
10	lead	mg/kg	50	86.1	mg/kg
11	zinc	mg/kg	103	197	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."

Sample "TP02-0.50" passes the "Domain 3" limits

#	Determinand		User entered data	Domain 3 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	38.1	mg/kg
4	cadmium	mg/kg	<0.02	1.6	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	47.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	56.9	mg/kg
8	mercury	mg/kg	<0.1	0.457	mg/kg
9	nickel	mg/kg	30	54.4	mg/kg
10	lead	mg/kg	50	81.3	mg/kg
11	zinc	mg/kg	103	237	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Sample "TP02-0.50" passes the "Domain 4" limits

#	Determinand		User entered data	Domain 4 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	32.3	mg/kg
4	cadmium	mg/kg	<0.02	0.97	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	51.7	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	80.4	mg/kg
8	mercury	mg/kg	<0.1	0.285	mg/kg
9	nickel	mg/kg	30	50.3	mg/kg
10	lead	mg/kg	50	91.4	mg/kg
11	zinc	mg/kg	103	155	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."

Sample "TP02-0.50" passes the "Domain 5" limits

#	Determinand		User entered data	Domain 5 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	41.5	mg/kg
4	cadmium	mg/kg	<0.02	1.42	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	73.2	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	77.6	mg/kg
8	mercury	mg/kg	<0.1	0.302	mg/kg
9	nickel	mg/kg	30	65.7	mg/kg
10	lead	mg/kg	50	109	mg/kg
11	zinc	mg/kg	103	224	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Sample "TP02-0.50" passes the "Domain 6" limits

#	Determinand		User entered data	Domain 6 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	85.8	mg/kg
4	cadmium	mg/kg	<0.02	2.38	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	54	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	40	mg/kg
8	mercury	mg/kg	<0.1	0.527	mg/kg
9	nickel	mg/kg	30	28.2	mg/kg
10	lead	mg/kg	50	108	mg/kg
11	zinc	mg/kg	103	168	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."

Sample "TP02-0.50" passes the "Domain 7" limits

#	Determinand		User entered data	Domain 7 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	34.8	30.9	mg/kg
4	cadmium	mg/kg	<0.02	0.542	mg/kg
5	chromium in Cr(III) compounds	mg/kg	12.9	57.6	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	37.9	83.1	mg/kg
8	mercury	mg/kg	<0.1	0.262	mg/kg
9	nickel	mg/kg	30	35.7	mg/kg
10	lead	mg/kg	50	61.1	mg/kg
11	zinc	mg/kg	103	122	mg/kg
12	TOC (total organic carbon)	%	1.78	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.014	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	6.39	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

(yellow)	User supplied data
(green)	"For metals, the analytical results for up to three parameters [...] may exceed the respective maximum concentration and/or soil trigger level. However, no individual result should exceed 1.5 times the respective maximum concentration and/or soil trigger level."

Soil Recovery Sites Screening results for sample: TP03-0.50

⚠ Sample "TP03-0.50" fails the "Domain 1" limits

#	Determinand		User entered data	Domain 1 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	15.6	mg/kg
4	cadmium	mg/kg	<0.02	1.5	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	51.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	51.2	mg/kg
8	mercury	mg/kg	<0.1	0.254	mg/kg
9	nickel	mg/kg	26.5	47.8	mg/kg
10	lead	mg/kg	41.3	48.3	mg/kg
11	zinc	mg/kg	95.9	137	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP03-0.50" fails the "Domain 2" limits

#	Determinand		User entered data	Domain 2 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	24.9	mg/kg
4	cadmium	mg/kg	<0.02	3.28	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	50.3	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	63.5	mg/kg
8	mercury	mg/kg	<0.1	0.36	mg/kg
9	nickel	mg/kg	26.5	61.9	mg/kg
10	lead	mg/kg	41.3	86.1	mg/kg
11	zinc	mg/kg	95.9	197	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level

⚠ Sample "TP03-0.50" fails the "Domain 3" limits

#	Determinand		User entered data	Domain 3 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	38.1	mg/kg
4	cadmium	mg/kg	<0.02	1.6	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	47.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	56.9	mg/kg
8	mercury	mg/kg	<0.1	0.457	mg/kg
9	nickel	mg/kg	26.5	54.4	mg/kg
10	lead	mg/kg	41.3	81.3	mg/kg
11	zinc	mg/kg	95.9	237	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP03-0.50" fails the "Domain 4" limits

#	Determinand		User entered data	Domain 4 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	32.3	mg/kg
4	cadmium	mg/kg	<0.02	0.97	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	51.7	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	80.4	mg/kg
8	mercury	mg/kg	<0.1	0.285	mg/kg
9	nickel	mg/kg	26.5	50.3	mg/kg
10	lead	mg/kg	41.3	91.4	mg/kg
11	zinc	mg/kg	95.9	155	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

User supplied data

Value above the screening limit/trigger level

⚠ Sample "TP03-0.50" fails the "Domain 5" limits

#	Determinand		User entered data	Domain 5 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	41.5	mg/kg
4	cadmium	mg/kg	<0.02	1.42	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	73.2	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	77.6	mg/kg
8	mercury	mg/kg	<0.1	0.302	mg/kg
9	nickel	mg/kg	26.5	65.7	mg/kg
10	lead	mg/kg	41.3	109	mg/kg
11	zinc	mg/kg	95.9	224	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP03-0.50" fails the "Domain 6" limits

#	Determinand		User entered data	Domain 6 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	85.8	mg/kg
4	cadmium	mg/kg	<0.02	2.38	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	54	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	40	mg/kg
8	mercury	mg/kg	<0.1	0.527	mg/kg
9	nickel	mg/kg	26.5	28.2	mg/kg
10	lead	mg/kg	41.3	108	mg/kg
11	zinc	mg/kg	95.9	168	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level

⚠ Sample "TP03-0.50" fails the "Domain 7" limits

#	Determinand		User entered data	Domain 7 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	20.3	30.9	mg/kg
4	cadmium	mg/kg	<0.02	0.542	mg/kg
5	chromium in Cr(III) compounds	mg/kg	18.3	57.6	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	34.5	83.1	mg/kg
8	mercury	mg/kg	<0.1	0.262	mg/kg
9	nickel	mg/kg	26.5	35.7	mg/kg
10	lead	mg/kg	41.3	61.1	mg/kg
11	zinc	mg/kg	95.9	122	mg/kg
12	TOC (total organic carbon)	%	2.26	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.007	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	14.7	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	17.7	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.021	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

User supplied data

Value above the screening limit/trigger level

Soil Recovery Sites Screening results for sample: TP05-0.50

⚠ Sample "TP05-0.50" fails the "Domain 1" limits

#	Determinand		User entered data	Domain 1 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	15.6	mg/kg
4	cadmium	mg/kg	<0.02	1.5	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	51.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	51.2	mg/kg
8	mercury	mg/kg	<0.1	0.254	mg/kg
9	nickel	mg/kg	32.4	47.8	mg/kg
10	lead	mg/kg	57	48.3	mg/kg
11	zinc	mg/kg	111	137	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP05-0.50" fails the "Domain 2" limits

#	Determinand		User entered data	Domain 2 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	24.9	mg/kg
4	cadmium	mg/kg	<0.02	3.28	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	50.3	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	63.5	mg/kg
8	mercury	mg/kg	<0.1	0.36	mg/kg
9	nickel	mg/kg	32.4	61.9	mg/kg
10	lead	mg/kg	57	86.1	mg/kg
11	zinc	mg/kg	111	197	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

	User supplied data
	Value above the screening limit/trigger level

⚠ Sample "TP05-0.50" fails the "Domain 3" limits

#	Determinand		User entered data	Domain 3 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	38.1	mg/kg
4	cadmium	mg/kg	<0.02	1.6	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	47.5	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	56.9	mg/kg
8	mercury	mg/kg	<0.1	0.457	mg/kg
9	nickel	mg/kg	32.4	54.4	mg/kg
10	lead	mg/kg	57	81.3	mg/kg
11	zinc	mg/kg	111	237	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP05-0.50" fails the "Domain 4" limits

#	Determinand		User entered data	Domain 4 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	32.3	mg/kg
4	cadmium	mg/kg	<0.02	0.97	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	51.7	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	80.4	mg/kg
8	mercury	mg/kg	<0.1	0.285	mg/kg
9	nickel	mg/kg	32.4	50.3	mg/kg
10	lead	mg/kg	57	91.4	mg/kg
11	zinc	mg/kg	111	155	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

(yellow)	User supplied data
(red)	Value above the screening limit/trigger level

⚠ Sample "TP05-0.50" fails the "Domain 5" limits

#	Determinand		User entered data	Domain 5 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	41.5	mg/kg
4	cadmium	mg/kg	<0.02	1.42	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	73.2	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	77.6	mg/kg
8	mercury	mg/kg	<0.1	0.302	mg/kg
9	nickel	mg/kg	32.4	65.7	mg/kg
10	lead	mg/kg	57	109	mg/kg
11	zinc	mg/kg	111	224	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

⚠ Sample "TP05-0.50" fails the "Domain 6" limits

#	Determinand		User entered data	Domain 6 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	85.8	mg/kg
4	cadmium	mg/kg	<0.02	2.38	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	54	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	40	mg/kg
8	mercury	mg/kg	<0.1	0.527	mg/kg
9	nickel	mg/kg	32.4	28.2	mg/kg
10	lead	mg/kg	57	108	mg/kg
11	zinc	mg/kg	111	168	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

User supplied data

Value above the screening limit/trigger level

⚠ Sample "TP05-0.50" fails the "Domain 7" limits

#	Determinand		User entered data	Domain 7 Limit	
1	Uncontaminated soil and stone (LoW 17 05 04)	n/a	Yes	Yes	n/a
2	Inert waste	n/a	Yes	Yes	n/a
3	arsenic	mg/kg	23.2	30.9	mg/kg
4	cadmium	mg/kg	<0.02	0.542	mg/kg
5	chromium in Cr(III) compounds	mg/kg	21.1	57.6	mg/kg
6	chromium in Cr(VI) compounds	mg/kg	<0.6		
7	copper	mg/kg	44.2	83.1	mg/kg
8	mercury	mg/kg	<0.1	0.262	mg/kg
9	nickel	mg/kg	32.4	35.7	mg/kg
10	lead	mg/kg	57	61.1	mg/kg
11	zinc	mg/kg	111	122	mg/kg
12	TOC (total organic carbon)	%	1.41	3	%
13	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.008	0.05	mg/kg
14	Mineral oil (C10 to C40)	mg/kg	<5	50	mg/kg
15	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.45	1	mg/kg
16	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.21	0.05	mg/kg
17	asbestos fibres detected (Yes/No)	n/a	No	No	n/a
18	< 2% non-natural materials (Yes/No)	n/a	Yes	Yes	n/a

Key

User supplied data

Value above the screening limit/trigger level

Screening utilises the following:

EPA Ireland: Guidance on waste acceptance criteria at authorised soil recovery facilities - January 2020

Appendix 9

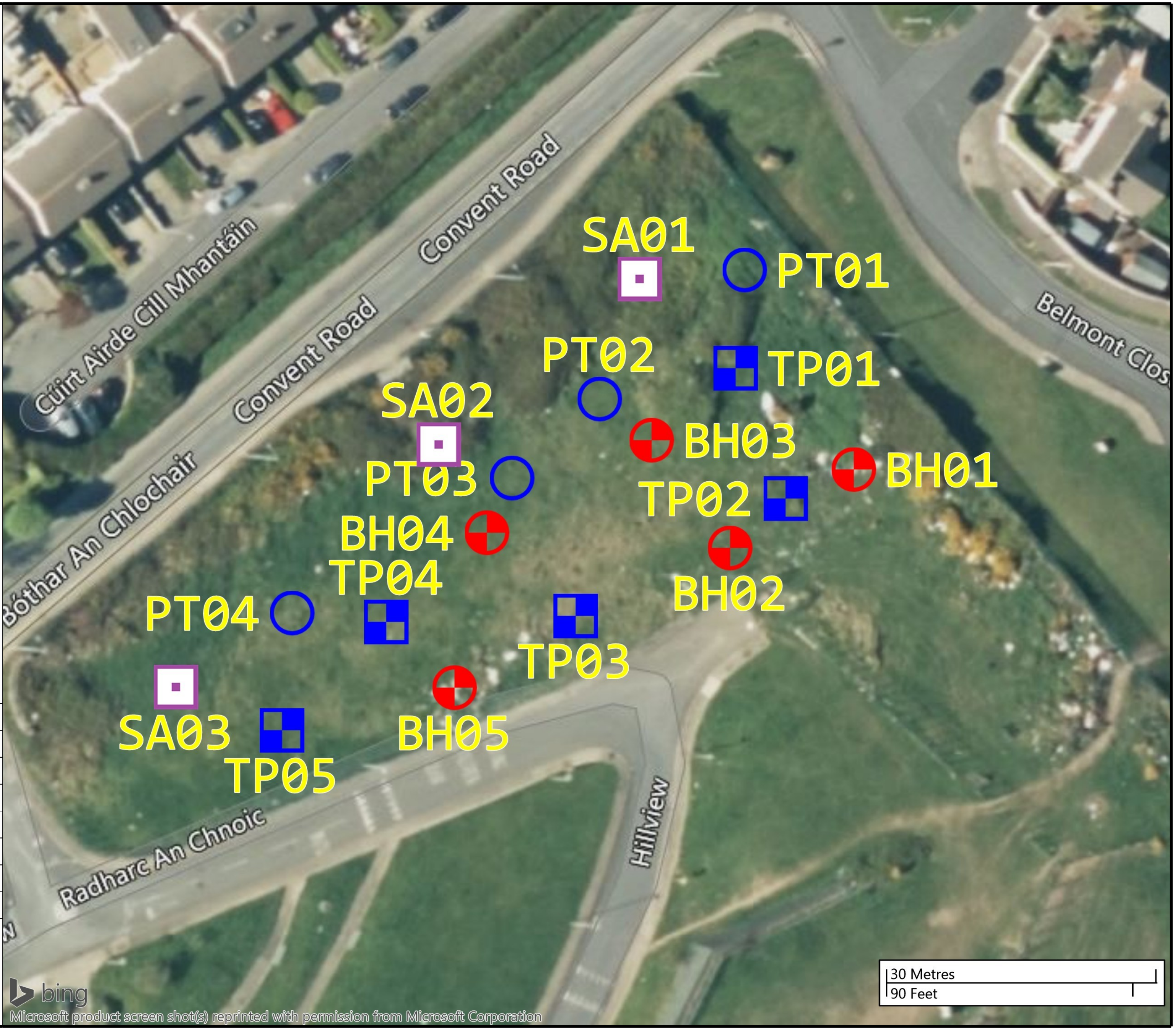
Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Cable Percussive Boreholes					
BH01	731230.927	693157.524	93.77	331309.010	193122.416
BH02	731217.329	693148.363	93.07	331295.409	193113.253
BH03	731208.219	693160.179	90.31	331286.297	193125.072
BH04	731190.062	693149.328	89.47	331268.136	193114.218
BH05	731186.904	693131.897	90.37	331264.978	193096.783
Trial Pits					
TP01	731217.399	693168.489	90.87	331295.479	193133.384
TP02	731223.392	693154.064	93.31	331301.474	193118.956
TP03	731200.198	693140.293	91.64	331278.275	193105.181
TP04	731179.039	693139.046	89.28	331257.111	193103.934
TP05	731167.630	693126.608	89.18	331245.700	193091.493
Soakaway Tests					
SA01	731206.416	693178.177	88.26	331284.494	193143.074
SA02	731184.366	693159.045	88.09	331262.439	193123.937
SA03	731155.680	693131.117	88.04	331233.747	193096.003
Plate Tests					
PT01	731218.132	693179.506	89.34	331296.212	193144.403
PT02	731202.268	693164.630	89.22	331280.345	193129.524
PT03	731192.699	693155.521	89.16	331270.774	193120.413
PT04	731168.489	693139.758	89.16	331246.559	193104.646

Legend Key

- Locations By Type - CBR
- Locations By Type - CP
- Locations By Type - IP
- Locations By Type - TP



Contract No:	6610
Contract Name:	Housing Development
Location:	Ballyguile Road, Wicklow, Co. Wicklow
Client:	Wicklow County Council
Engineer:	SDS Design Engineers
Title:	Site Plan
Scale:	1:600
Drawn By:	SL

Site Investigations Ltd
The Grange
12th Lock Road
Lucan
Co. Dublin
T: 01 6108768
e: info@siteinvestigations.ie

APPENDIX C – MICRODRAINAGE OUTPUTS

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 331 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control Σ (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	87.261	0.411	0.0	1.9	1.9	31.2	O K
30 min Summer	87.405	0.555	0.0	1.9	1.9	42.2	O K
60 min Summer	87.536	0.686	0.0	1.9	1.9	52.1	O K
120 min Summer	87.646	0.796	0.0	1.9	1.9	60.5	O K
180 min Summer	87.688	0.838	0.0	1.9	1.9	63.7	O K
240 min Summer	87.704	0.854	0.0	1.9	1.9	64.9	O K
360 min Summer	87.704	0.854	0.0	1.9	1.9	64.9	O K
480 min Summer	87.694	0.844	0.0	1.9	1.9	64.1	O K
600 min Summer	87.679	0.829	0.0	1.9	1.9	63.0	O K
720 min Summer	87.663	0.813	0.0	1.9	1.9	61.8	O K
960 min Summer	87.628	0.778	0.0	1.9	1.9	59.1	O K
1440 min Summer	87.553	0.703	0.0	1.9	1.9	53.4	O K
2160 min Summer	87.424	0.574	0.0	1.9	1.9	43.6	O K
2880 min Summer	87.292	0.442	0.0	1.9	1.9	33.6	O K
4320 min Summer	87.117	0.267	0.0	1.9	1.9	20.3	O K
5760 min Summer	87.020	0.170	0.0	1.9	1.9	12.9	O K
7200 min Summer	86.967	0.117	0.0	1.7	1.7	8.9	O K
8640 min Summer	86.938	0.088	0.0	1.6	1.6	6.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	100.054	0.0	33.9	29
30 min Summer	67.640	0.0	45.9	43
60 min Summer	42.854	0.0	58.1	72
120 min Summer	26.491	0.0	71.9	128
180 min Summer	19.830	0.0	80.7	186
240 min Summer	16.118	0.0	87.5	244
360 min Summer	12.002	0.0	97.7	312
480 min Summer	9.724	0.0	105.6	376
600 min Summer	8.254	0.0	112.0	442
720 min Summer	7.217	0.0	117.5	510
960 min Summer	5.838	0.0	126.8	652
1440 min Summer	4.326	0.0	140.9	928
2160 min Summer	3.206	0.0	156.6	1344
2880 min Summer	2.591	0.0	168.8	1684
4320 min Summer	1.917	0.0	187.3	2380
5760 min Summer	1.546	0.0	201.5	3056
7200 min Summer	1.309	0.0	213.1	3744
8640 min Summer	1.142	0.0	223.1	4416

Summary of Results for 100 year Return Period (+30%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
10080 min Summer	86.924	0.074	0.0	1.5	1.5	5.6	O K
15 min Winter	87.314	0.464	0.0	1.9	1.9	35.3	O K
30 min Winter	87.478	0.628	0.0	1.9	1.9	47.7	O K
60 min Winter	87.626	0.776	0.0	1.9	1.9	59.0	O K
120 min Winter	87.756	0.906	0.0	1.9	1.9	68.8	O K
180 min Winter	87.811	0.961	0.0	2.0	2.0	73.1	O K
240 min Winter	87.836	0.986	0.0	2.0	2.0	74.9	O K
360 min Winter	87.841	0.991	0.0	2.0	2.0	75.3	O K
480 min Winter	87.824	0.974	0.0	2.0	2.0	74.1	O K
600 min Winter	87.806	0.956	0.0	2.0	2.0	72.6	O K
720 min Winter	87.782	0.932	0.0	1.9	1.9	70.8	O K
960 min Winter	87.727	0.877	0.0	1.9	1.9	66.7	O K
1440 min Winter	87.609	0.759	0.0	1.9	1.9	57.7	O K
2160 min Winter	87.397	0.547	0.0	1.9	1.9	41.6	O K
2880 min Winter	87.205	0.355	0.0	1.9	1.9	27.0	O K
4320 min Winter	87.008	0.158	0.0	1.9	1.9	12.0	O K
5760 min Winter	86.937	0.087	0.0	1.6	1.6	6.6	O K
7200 min Winter	86.918	0.068	0.0	1.4	1.4	5.2	O K
8640 min Winter	86.908	0.058	0.0	1.2	1.2	4.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Summer	1.017	0.0	231.9	5144
15 min Winter	100.054	0.0	38.0	29
30 min Winter	67.640	0.0	51.4	43
60 min Winter	42.854	0.0	65.1	70
120 min Winter	26.491	0.0	80.5	126
180 min Winter	19.830	0.0	90.4	182
240 min Winter	16.118	0.0	98.0	238
360 min Winter	12.002	0.0	109.4	344
480 min Winter	9.724	0.0	118.2	392
600 min Winter	8.254	0.0	125.4	470
720 min Winter	7.217	0.0	131.6	548
960 min Winter	5.838	0.0	142.0	704
1440 min Winter	4.326	0.0	157.8	1004
2160 min Winter	3.206	0.0	175.4	1428
2880 min Winter	2.591	0.0	189.1	1760
4320 min Winter	1.917	0.0	209.8	2384
5760 min Winter	1.546	0.0	225.7	3000
7200 min Winter	1.309	0.0	238.7	3696
8640 min Winter	1.142	0.0	249.9	4416

Summary of Results for 100 year Return Period (+30%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
10080 min Winter	86.901	0.051	0.0	1.1	1.1	3.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Winter	1.017	0.0	259.7	5136

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	Scotland and Ireland	Cv (Winter)	0.840
M5-60 (mm)	16.800	Shortest Storm (mins)	15
Ratio R	0.315	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Pipe Network

Volume in Pipe Network (m³)	10	Dia of Outfall Pipe (m)	0.3
Slope of Outfall Pipe (1:X)	200	Roughness of Outfall Pipe (mm)	0.150

Time Area Diagram

Total Area (ha) 0.181

Time From:	**(mins) To:**	**Area (ha)**	**Time From:**	**(mins) To:**	**Area (ha)**	**Time From:**	**(mins) To:**	**Area (ha)**
0	4	0.061	4	8	0.060	8	12	0.060

Model Details

Storage is Online Cover Level (m) 88.230

Cellular Storage Structure

Invert Level (m) 86.850 Safety Factor 1.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	80.0	0.0	1.001	0.0	0.0
1.000	80.0	0.0			

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0067-2000-1000-2000
Design Head (m)	1.000
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	67
Invert Level (m)	86.840
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	2.0	Kick-Flo®	0.599	1.6
Flush-Flo™	0.296	1.9	Mean Flow over Head Range	-	1.7

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.6	1.200	2.2	3.000	3.3	7.000	4.9
0.200	1.9	1.400	2.3	3.500	3.5	7.500	5.1
0.300	1.9	1.600	2.5	4.000	3.8	8.000	5.2
0.400	1.9	1.800	2.6	4.500	4.0	8.500	5.4
0.500	1.8	2.000	2.7	5.000	4.2	9.000	5.5
0.600	1.6	2.200	2.9	5.500	4.4	9.500	5.7
0.800	1.8	2.400	3.0	6.000	4.6		
1.000	2.0	2.600	3.1	6.500	4.7		

APPENDIX D – MET ÉIREANN RAINFALL RETURN PERIOD DATA

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 157210, Northing: 158123,

	Interval		Years													
DURATION	6months	1year	2	3	4	5	10	20	30	50	75	100	150	200	250	500
5 mins	2.7	3.8	4.5	5.5	6.2	6.7	8.5	10.5	11.9	13.8	15.5	16.9	19.0	20.6	22.0	N/A
10 mins	3.7	5.4	6.3	7.7	8.6	9.3	11.8	14.6	16.5	19.2	21.6	23.5	26.4	28.7	30.7	N/A
15 mins	4.4	6.3	7.4	9.0	10.1	11.0	13.9	17.2	19.4	22.6	25.4	27.7	31.1	33.8	36.1	N/A
30 mins	5.7	8.0	9.3	11.3	12.6	13.6	17.0	20.8	23.3	26.9	30.1	32.6	36.4	39.4	41.9	N/A
1 hours	7.3	10.2	11.8	14.1	15.6	16.8	20.7	25.1	28.0	32.1	35.6	38.4	42.7	46.0	48.7	N/A
2 hours	9.5	13.0	14.9	17.6	19.4	20.8	25.3	30.3	33.6	38.2	42.2	45.3	50.0	53.6	56.6	N/A
3 hours	11.1	15.0	17.0	20.0	22.0	23.6	28.5	33.9	37.4	42.3	46.6	49.9	54.9	58.7	61.9	N/A
4 hours	12.4	16.6	18.8	22.0	24.1	25.7	30.9	36.7	40.4	45.5	50.0	53.4	58.6	62.6	65.8	N/A
6 hours	14.4	19.1	21.5	25.0	27.4	29.1	34.8	41.0	44.9	50.4	55.2	58.8	64.3	68.5	71.9	N/A
9 hours	16.8	22.0	24.7	28.5	31.1	33.0	39.1	45.8	50.0	55.8	60.9	64.7	70.5	74.9	78.6	N/A
12 hours	18.7	24.3	27.2	31.3	34.0	36.1	42.5	49.5	54.0	60.1	65.3	69.3	75.3	79.9	83.6	N/A
18 hours	21.8	28.0	31.2	35.7	38.6	40.8	47.8	55.3	60.1	66.6	72.1	76.3	82.7	87.5	91.4	N/A
24 hours	24.3	31.0	34.4	39.2	42.3	44.6	52.0	59.9	64.8	71.6	77.4	81.7	88.3	93.2	97.3	110.9
2 days	31.2	38.6	42.3	47.5	50.9	53.4	61.1	69.3	74.3	81.2	87.0	91.3	97.8	102.6	106.5	119.7
3 days	37.1	45.3	49.3	54.9	58.4	61.1	69.2	77.7	83.0	90.0	95.9	100.4	106.9	111.8	115.7	128.9
4 days	42.6	51.4	55.6	61.6	65.3	68.1	76.7	85.5	90.9	98.2	104.2	108.8	115.4	120.4	124.4	137.7
6 days	52.7	62.5	67.3	73.8	77.9	80.9	90.2	99.6	105.4	113.0	119.4	124.1	131.1	136.3	140.4	154.0
8 days	62.1	72.9	78.0	85.0	89.4	92.7	102.5	112.5	118.6	126.6	133.3	138.2	145.4	150.7	155.0	169.0
10 days	71.0	82.7	88.1	95.6	100.3	103.7	114.1	124.6	131.0	139.3	146.2	151.3	158.8	164.3	168.6	183.0
12 days	79.7	92.1	97.9	105.8	110.7	114.3	125.2	136.1	142.7	151.4	158.5	163.8	171.4	177.1	181.6	196.3
16 days	96.5	110.2	116.6	125.2	130.5	134.5	146.2	157.9	165.0	174.1	181.7	187.2	195.3	201.2	205.9	221.2
20 days	112.7	127.6	134.5	143.8	149.5	153.7	166.2	178.6	186.0	195.6	203.5	209.3	217.7	223.9	228.7	244.6
25 days	132.6	148.8	156.2	166.2	172.3	176.8	190.1	203.3	211.1	221.2	229.5	235.6	244.3	250.7	255.8	272.2

NOTES:
N/A Data not available
These values are derived from a Depth Duration Frequency (DDF) Model
For details refer to:
'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf

APPENDIX E – UISCE EIREANN PRE-CONNECTION ENQUIRY

Pre-connection enquiry form

Business developments, mixed use developments, housing developments

This form is to be filled out by applicants enquiring about the feasibility of a water and/or wastewater connection to Irish Water infrastructure. If completing this form by hand, please use BLOCK CAPITALS and black ink. Please note that this is a digital PDF form and can be filled in electronically

Please refer to the **Guide to completing the pre-connection enquiry form** on page 14 of this document when completing the form.

*** Denotes mandatory/ required field. Please note, if mandatory fields are not completed the application will be returned.**

Section A | Applicant details

1 *Applicant details:

Registered company name (if applicable):

Trading name (if applicable):

Company registration number (if applicable):

Parent company registered company name (if applicable):

Parent company registration number (if applicable):

If you are not a registered company/business, please provide the applicant's name:

WICKLOW COUNTY COUNCIL

*Contact name: STEPHEN EARLS

*Postal address: WICKLOW COUNTY COUNCIL, COUNTY BUILDINGS, WHITEGATES, WICKLOW TOWN, CO. WICKLOW.

*Eircode: A67FW96

Please provide either a landline or a mobile number

Landline:

*Mobile: 0872973493

*Email: seartls@wicklowcoco.ie

2 Agent details (if applicable):

The fields marked with * in this section are mandatory if using an agent

*Contact name: CONNOR DALY

Company name (if applicable): SDS

*Postal address: UNIT 9, N5 BUSINESS PARK,
CASTLEBAR, CO. MAYO

*Eircode: F23E283

Please provide either a landline or a mobile number

Landline: 0949034914

*Mobile 0876459256

*Email: cdaly@structuraldesign.ie

3 *Please indicate whether it is the applicant or agent who should receive future correspondence in relation to the enquiry:

Applicant ☒ Agent ☐

Section B | Site details

4 *Site address 1 (include Site name/Building name/Building number):

BALLYGUILE RD,

***Address 2**

***Address 3**

***City/Town** WICKLOW TOWN

***County** WICLKLOW **Eircode** A67Y389

5 *Irish Grid co-ordinates (proposed connection point):

Eastings (X) 331261 Northings (Y) 193123

Note: Values for Eastings must be between 015,900 and 340,000. Northings, between 029,000 and 362,000
Eg. co-ordinates of GPO, O'Connell St., Dublin: E(X) 315,878 N(Y) 234,619

6 *Local Authority where proposed development is located:

WICKLOW COUNTY COUNCIL

7 *Has full planning permission been granted? Yes ☐ No ☑

If 'Yes', please provide the current or previous planning reference number:

8 ***Is this development affiliated with a government body/agency?** Yes ☐ No ☑

If 'Yes', please specify the body/agency:

Eg. IDA, HSE, LDA, etc.

Section C | Development details

9 ***Please outline the domestic and/or industry/business use proposed:**

Domestic:

Property type	Number of units	Property type	Number of units
House	8	Apartments	8
Duplex		Number of Apartment Blocks	4

Industry/business:

Property type	Number of units	Property type	Number of units
Agricultural		Brewery / Distillery	
Restaurant / Café / Pub		Car Wash / Valeting	
Creche		Data Centre	
Fire Hydrant		Fire Station	
Food Processing		Hotel Accommodation	
Industrial / Manufacturing		Laundry / Laundrette	
Office		Primary Care Centre	
Residential / Nursing Care Home		Retail	
School		Sports Facility	
Student Accommodation		Warehouse	

Other (please specify type)		No. of Units	

9.1 Please provide additional details if your proposed business use are in the Food Processing, Industrial unit/ Manufacturing, Sports Facility or Other Categories.

9.2 Please provide the maximum expected occupancy in number of people, according to the proposed development you selected, e.g. Number of office workers, number of nursing home residents, maximum pub occupancy, number of hotel beds, number of retail workers:

10 ***Approximate start date of proposed development:** 01 / 05 / 2026

11 ***Is the development multi-phased?** Yes ☐ No ☑

If 'Yes', application must include a master-plan identifying the development phases and the current phase number.

If 'Yes', please provide details of variations in water demand volumes and wastewater discharge loads due to phasing requirements.

12 ***Please indicate the type of connection required by ticking the appropriate box below:**

Both Water and Wastewater ☒ Please complete both Sections D and E

Water only ☐ Please go to Section D

Wastewater only ☐ Please go to Section E

Reason for only applying for one service (if applicable):

Section D | Water connection and demand details

13	***Is there an existing connection to public water mains at the site?**	Yes ☐	No ☑
13.1	If yes, is this enquiry for an additional connection to one already installed?	Yes ☐	No ☐
13.2	If yes, is this enquiry to increase the size of an existing connection?	Yes ☐	No ☐

14 **Approximate date water connection is required:** 01/08/2026

15 ***What diameter of water connection is required to service the development?** 100 mm

16 ***Is more than one connection required to the public infrastructure to service this development?** Yes ☐ No ☑

If 'Yes', how many?

17 **Please indicate the business water demand (shops, offices, schools, hotels, restaurants, etc.):**

Post-development peak hour water demand		**l/s**
Post-development average hour water demand		**l/s**

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

18 **Please indicate the industrial water demand (industry-specific water requirements):**

Post-development peak hour water demand		**l/s**
Post-development average hour water demand		**l/s**

Please include calculations on the attached sheet provided. Where there will be a daily/weekly/seasonal variation in the water demand profile, please provide all such details.

19 **What is the existing ground level at the property boundary at connection point (if known) above Malin Head Ordnance Datum?**

88.10 m

20 **What is the highest finished floor level of the proposed development above Malin Head Ordnance Datum?**

90.00 m

21 **Is on-site water storage being provided?** Yes ☑ No ☐

Please include calculations on the attached sheet provided.

22 **Are there fire flow requirements?** Yes ☐ No ☑

Additional fire flow requirements over and above those identified in Q17-18		**l/s**

Please include calculations on the attached sheet provided, and include confirmation of requirements from the Fire Authority.

23 **Do you propose to supplement your potable water supply from other sources?** Yes ☐ No ☑

If 'Yes', please indicate how you propose to supplement your potable water supply from other sources (see **Guide to completing the application form** on page 15 of this document for further details):

Section E | Wastewater connection and discharge details

24 ***Is there an existing connection to a public sewer at the site?** Yes ☐ No ☑

24.1 If yes, is this enquiry for an additional connection to the one already installed? Yes ☐ No ☐

24.2 If yes, is this enquiry to increase the size of an existing connection? Yes ☐ No ☐

25 ***Approximate date that wastewater connection is required:** 01/08/2026

26 ***What diameter of wastewater connection is required to service the development?** 150 mm

27 ***Is more than one connection required to the public infrastructure to service this development?** Yes ☐ No ☑

If 'Yes', how many?

28 **Please indicate the commercial wastewater hydraulic load (shops, offices, schools, hotels, restaurants, etc.):**

Post-development peak discharge		**l/s**
Post-development average discharge		**l/s**

Please include calculations on the attached sheet provided.

29 **Please indicate the industrial wastewater hydraulic load (industry-specific discharge requirements):**

Post-development peak discharge		**l/s**
Post-development average discharge		**l/s**

Please include calculations on the attached sheet provided.

30 **Wastewater organic load:**

Characteristic	Max concentration (mg/l)	Average concentration (mg/l)	Maximum daily load (kg/day)
Biochemical oxygen demand (BOD)			
Chemical oxygen demand (COD)			
Suspended solids (SS)			
Total nitrogen (N)			
Total phosphorus (P)			
Other			

Temperature range	
pH range	

31 ***Storm water run-off will only be accepted from brownfield sites that already have a storm/surface water connection to a combined sewer. In the case of such brownfield sites, please indicate if the development intends discharging surface water to the combined wastewater collection system:**

Yes ☐ No ☑

If 'Yes', please give reason for discharge and comment on adequacy of SUDS/attenuation measures proposed.

Please submit detailed calculations on discharge volumes, peak flows and attenuation volumes with this application

32 ***Do you propose to pump the wastewater?** Yes ☐ No ☑

If 'Yes', please include justification for your pumped solution with this application.

33 **What is the existing ground level at the property boundary at connection point (if known) above Malin Head Ordnance Datum?**

88.10 m

34 **What is the lowest finished floor level on site above Malin Head Ordnance Datum?** 89.00 m

35 **What is the proposed invert level of the pipe exiting the property to the public road?**

86.57 m

Section F | Supporting documentation

Please provide the following additional information (all mandatory):

> Site location map: A site location map to a scale of 1:1000, which clearly identifies the land or structure to which the enquiry relates. The map shall include the following details: ☑

i. The scale shall be clearly indicated on the map.

ii. The boundaries shall be delineated in red.

iii. The site co-ordinates shall be marked on the site location map.

> Details of planning and development exemptions (if applicable). ☑

> Calculations (calculation sheets provided below). ☑

> Site layout map to a scale of 1:500 showing layout of proposed development, water network and wastewater network layouts, additional water/wastewater infrastructure if proposed, connection points to Irish Water infrastructure. ☑

> Conceptual design of the connection asset from the proposed development to the existing Irish Water infrastructure, including service conflicts, gradients, pipe sizes and invert levels. ☑

> Any other information that might help Irish Water assess this pre-connection enquiry. ☑

Section G | Declaration

I/We hereby make this application to Irish Water for a water and/or wastewater connection as detailed on this form.

I/We understand that any alterations made to this application must be declared to Irish Water.

The details that I/we have given with this application are accurate.

I/We have enclosed all the necessary supporting documentation.

Any personal data you provide will be stored and processed by Irish Water and may be transferred to third parties for the purposes of the water and/or wastewater connection process. I hereby give consent to Irish Water to store and process my personal data and to transfer my personal data to third parties, if required, for the purposes of the connection process.

If you wish to revoke consent at any time or wish to see Irish Water's full Data Protection Notice, please see **https://www.water.ie/privacy-notice/**

Signature:

Date: 17 / 02 / 2026

Your full name (in BLOCK CAPITALS):

CONNOR DALY

Irish Water will carry out a formal assessment based on the information provided on this form.
Any future connection offer made by Irish Water will be based on the information that has been provided here.

Please submit the completed form to **newconnections@water.ie** or alternatively, post to:

Irish Water
PO Box 860
South City Delivery Office
Cork City

Please note that if you are sending us your application form and any associated documentation by email, the maximum file size that we can receive in any one email is 35MB.

Please note, if mandatory fields are not completed the application will be returned.

Irish Water is subject to the provisions of the Freedom of Information Act 2014 ("FOIA") and the codes of practice issued under FOIA as may be amended, updated or replaced from time to time. The FOIA enables members of the public to obtain access to records held by public bodies subject to certain exemptions such as where the requested records may not be released, for example to protect another individual's privacy rights or to protect commercially sensitive information. Please clearly label any document or part thereof which contains commercially sensitive information. Irish Water accepts no responsibility for any loss or damage arising as a result of its processing of freedom of information requests.

Calculations

Water demand

Reference: 'Code of Practice for Water Infrastructure, Connections and Developer Services, Design & Construction Requirements for Self-Lay Developments, July 2020 (Revision 2)',

Section 3.7.2 Water Demand Calculations

Per-capita Consumption = 150l/person/day

Average occupancy ratio of 2.7 persons/dwelling.

16 No. dwellings

Average Daily Domestic Demand (ADDD) = 16 * 2.7 * 150 = 6,480 l/day

Average Hour Water Demand (AHWD) = 6,480 * (1day/24hrs) * (1hr/3600s) = 0.075 l/s

Average Day/Peak Week Demand = 1.25 * ADDD or 1.25 * AHWD

Peak Demand = 5.0 * AD/PWD

Peak Hour Water Demand = 5 * 1.25 * AHWD = 5 * 1.25 * 0.075 l/s = 0.469l/s

On-site storage

Each dwelling will have an attic storage tank capable of providing storage for 24 hours of maximum consumption. As per IW-CDS-5020-03 (Revision 2-2020), the following minimum cold water storage volumes, for new developments using low flush and dual flush WC's, will be provided:

Dwelling house or Apt. (up to 3 Bed without power shower) = 227 litres

Dwelling house or Apt. (4 Bedrooms or single power shower) = 340 litres

Dwelling house or Apt. (having 2 full bathrooms) = 682 litres

Additional water storage per shower en-suite in the above = 90 litres.

Fire flow requirements

Reference: 'Code of Practice for Wastewater Infrastructure, Connections and Developer Services, Design & Construction Requirements for Self-Lay Developments, December 2020 (Revision 2)',

Appendix B Gravity Sewer Design Requirements

Section 2.2 Wastewater Flows - New Networks

Dry Weather Flow = PG + I + E

P=Population = 16 Units * 2.7 persons/unit = 44 Persons (Ref Section 2.2)

G=Water Consumption/Capita = 150 l/person/day (Ref Section 2.2)

I = Infiltration = 10% of G = 15 l/person/day

E=0

Dry Weather Flow = 44 persons * 150 l/person/day + 44 * 15 l/person/day = 7,260 l/day

Design Flow = PfDom * PG + I

PfDom = 6 (Population < 750) See Table (Ref Section 2.2.5)

Design Flow = 6 * 44 * 150 + 44 * 15 = 40,260 l/day

Average Discharge = 7,260 l/day * (1day/24hrs) * (1hr/3600s) = 0.084 l/s

Peak Discharge = 40,260 l/day * (1day/24hrs) * (1hr/3600s) = 0.466 l/s

Guide to completing the pre-connection enquiry form

This form should be completed by applicants enquiring about the feasibility of a water and/or wastewater connection to Irish Water infrastructure.

The Irish Water Codes of Practice are available at **www.water.ie** for reference.

Section A | Applicant Details

Question 1: This question requires the applicant or company enquiring about the feasibility of a connection to identify themselves, their postal address, and to provide their contact details.

Question 2: If the applicant has employed a consulting engineer or an agent to manage the enquiry on their behalf, the agent's address and contact details should be recorded here.

Question 3: Please indicate whether it is the applicant or the agent who should receive future correspondence in relation to the enquiry.

Section B | Site details

Question 4: This is the address of the site requiring the water/wastewater service connection and for which this enquiry is being made.

Question 5: Please provide the Irish Grid co-ordinates of the proposed site. Irish grid positions on maps are expressed in two dimensions as Eastings (E or X) and Northings (N or Y) relative to an origin. You will find these coordinates on your Ordnance Survey map which is required to be submitted with an application.

Question 6: Please identify the Local Authority that is or will be dealing with your planning application, for example Cork City Council.

Question 7: Please indicate if planning permission has been granted for this application, and if so, please provide the planning permission reference number.

Question 8: Please indicate if this development is affiliated with a government body/agency, and if so, specify

Section C | Development details

Question 9: Please specify the number of different property/premises types by filling in the tables provided.

Question 9.1: Please provide additional details if your proposed business use are in the Food Processing, Industrial unit/ Manufacturing, Sports Facility or Other Categories.

Question 9.2: Please indicate the maximum expected occupancy in numbers of people according to the proposed development you selected.

Question 10: Please indicate the approximate commencement date of works on the development.

Question 11: Please indicate if a phased building approach is to be adopted when developing the site. If so, please provide details of the phase master-plan and the proposed variation in water demand/wastewater discharge as a result of the phasing of the development.

Question 12: Please indicate the type of connection required by ticking the appropriate box and proceed to complete the appropriate section or sections.

Section D | Water connection and demand details

Question 13: Please indicate if a water connection already exists for this site.

Question 13.1: Please indicate if this enquiry concerns an additional connection to one already installed on the site.

Question 13.2: Please indicate if you are proposing to upgrade the water connection to facilitate an increase in water demand. Irish Water will determine what impact this will have on our infrastructure.

Question 14: Please indicate the approximate date that the proposed connection to the water infrastructure will be required.

Question 15: Please indicate what diameter of water connection is required to service this development.

Question 16: Please indicate if more than one connection is required to service this development. Please note that the connection size provided may be used to determine the connection charge.

Question 17: If this connection enquiry concerns a business premises, please provide calculations for the water demand and include your calculations on the calculation sheet provided. Business premises include shops, offices, hotels, schools, etc. Demand rates (peak and average) are site specific. Average demand is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). For design purposes, please refer to the Irish Water Codes of Practice for Water Infrastructure.

Question 18: If this connection enquiry is for an industrial premises, please calculate the water demand and include your calculations on the calculation sheet provided. Demand rates (peak and average) are site specific. Average demand is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). The peak demand for sizing of the pipe network will be as per the specific business production requirements. For design purposes, please refer to the Irish Water Codes of Practice for Water Infrastructure.

Question 19: Please specify the ground level at the location where connection to the public water mains will be made. This is required in order to determine if there is sufficient pressure in the existing water infrastructure to serve your proposed development. Levels should be quoted in metres relative to Malin Head Ordnance Datum.

Question 20: Please specify the highest finished floor level on site. This is required in order to determine if there is sufficient pressure in the existing water infrastructure to serve your proposed development. Levels should be quoted in metres relative to Malin Head Ordnance Datum.

Question 21: If storage is required, water storage capacity of 24-hour water demand must usually be provided at the proposed site. In some cases, 24-hour storage capacity may not be required, for example 24-hour storage for a domestic house would be provided in an attic storage tank. Please calculate the 24-hour water storage requirements and include your calculations on the attached sheet provided. Please also confirm that on-site storage is being provided by ticking the appropriate box.

Question 22: The water supply system shall be designed and constructed to reliably convey the water flows that are required of the development including fire flow requirements by the Fire Authority. The Fire Authority will provide the requirement for fire flow rates that the water supply system will have to carry. Please note that while flows in excess of your required demand may be achieved in the Irish Water network and could be utilised in the event of a fire, Irish Water cannot guarantee a flow rate to meet your fire flow requirement. To guarantee a flow to meet the Fire Authority requirements, you should provide adequate fire storage capacity within your development. Please include your calculations on the attached sheet provided, and further provide confirmation of the Fire Authority requirements.

Question 23: Please identify proposed additional water supply sources, that is, do you intend to connect to the public water mains or the public mains and supplement from other sources? If supplementing public water supply with a supply from another source, please provide details as to how the potable water supply is to be protected from cross contamination at the premises.

Section E | Wastewater connection and discharge details

Question 24: Please indicate if a wastewater connection to a public sewer already exists for this site.

Question 24.1: Please indicate if this enquiry relates to an additional wastewater connection to one already installed.

Question 24.2: Please indicate if you are proposing to upgrade the wastewater connection to facilitate an increased discharge. Irish Water will determine what impact this will have on our infrastructure.

Question 25: Please specify the approximate date that the proposed connection to the wastewater infrastructure will be required.

Question 26: Please indicate what diameter of wastewater connection is required to service this development.

Question 27: Please indicate if more than one connection is required to service this development. Please indicate number required.

Question 28: If this enquiry relates to a business premises, please provide calculations for the wastewater discharge and include your calculations on the attached sheet provided. Business premises include shops, offices, hotels, schools, etc. Discharge rates (peak and average) are site specific. Average discharge is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). For design purposes, please refer to the Irish Water Codes of Practice for Wastewater Infrastructure.

Question 29: If this enquiry relates to an industrial premises, please provide calculations for the wastewater discharge and include your calculations on the calculation sheet provided. Discharge rates (peak and average) are site specific. Average discharge is the total daily volume divided by a 24-hour time period and expressed in litres per second (l/s). The peak discharge for sizing of the pipe network will be as per the specific business production requirements. For design purposes, please refer to the Irish Water Codes of Practice for Wastewater Infrastructure.

Question 30: Please specify the maximum and average concentrations and the maximum daily load of each of the wastewater characteristics listed in the wastewater organic load table (if not domestic effluent), and also specify if any other significant concentrations are expected in the effluent. Please complete the table and provide additional supporting documentation if relevant. Note that the concentration shall be in mg/l and the load shall be in kg/day. Note that for business premises (shops, offices, schools, hotels, etc.) for which only domestic effluent will be discharged (excluding discharge from canteens/ restaurants which would require a Trade Effluent Discharge licence), there is no need to complete this question.

Question 31: In exceptional circumstances, such as brownfield sites, where the only practical outlet for storm/ surface water is to a combined sewer, Irish Water will consider permitting a restricted attenuated flow to the combined sewer. Storm/surface water will only be accepted from brownfield sites that already have a storm/surface water connection to a combined sewer and the applicant must demonstrate how the storm/surface water flow from the proposed site is minimised using sustainable urban drainage system (SUDS). This type of connection will only be considered on a case by case basis. Please advise if the proposed development intends discharging surface water to the combined wastewater collection system.

Question 32: Please specify if the development needs to pump its wastewater discharge to gain access to Irish Water infrastructure.

Question 33: Please specify the ground level at the location where connection to the public sewer will be made. This is required to determine if the development can be connected to the public sewer via gravity discharge. Levels should be quoted in metres relative to Malin Head Ordnance Datum.

Question 34: Please specify the lowest floor level of the proposed development. This is required in order to determine if the development can be connected to the public sewer via gravity discharge. Levels should be quoted in metres relative to Malin Head Ordnance Datum.

Question 35: Please specify the proposed invert level of the pipe exiting the property to the public road.

Section F | Supporting documentation

Please provide additional information as listed.

Section G | Declaration

Please review the declaration, sign, and return the completed application form to Irish Water by email or by post using the contact details provided in Section G.

Notes

Notes